

**United States Army**  
Fort Monmouth, New Jersey

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**Underground Storage Tank  
Closure and Site Investigation  
Report**

***Building 205  
Main Post Area***

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**NJDEP UST Registration No. 0081533-3  
NJDEP Closure Approval No. C-93-2612**

**January 2000**

**UNDERGROUND STORAGE TANK  
CLOSURE AND SITE INVESTIGATION REPORT**

**BUILDING 205**

**MAIN POST AREA  
NJDEP UST REGISTRATION NO. 0081533-3**

**JANUARY 2000**

**PREPARED FOR:**

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

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**PROJECT NO. 09-5004-01**

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## EXECUTIVE SUMMARY

### UST Closure

On October 24, 1993, a fiberglass underground storage tank (UST) was closed by removal in accordance with Closure Approval No. C-93-2612 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-3, was located immediately adjacent to Building 205 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-3 was a 4,000-gallon No. 2 diesel UST. The UST fill port was located directly above the tank. The tank closure was performed by Cleaning Up The Environment Inc. (CUTE).

### Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring instruments for evidence of contamination. Following removal, the UST was inspected for holes. No holes were noted in the UST and no potentially contaminated soils were observed surrounding the tank.

On October 25, 1993, following removal of the UST, post-excavation soil samples were collected. Post-excavation samples A, B, C, D, E, DUP E, and G were collected from a total of six (6) locations along the sidewalls of the excavation immediately above groundwater. Post-excavation soil samples H and I were also collected from the base of the piping portion of the excavation. Groundwater was present at approximately 5 feet below ground surface (BGS). All samples were analyzed for total petroleum hydrocarbons (TPHC).

On October 26, 1993, following removal of approximately 16 cubic yards of potentially contaminated soils, post-excavation soil samples J, K, L, M, DUP K, and O were collected from a total of five (5) locations along the sidewalls of the expanded portions of the excavation, and were analyzed for TPHC. These samples were also collected immediately above the water table.

On October 23, 1999, five (5) soil samples were collected along the former piping length of the excavation, which was approximately forty (40) feet in length. The piping samples were collected at a depth of 1.5 and 1.8 feet bgs.

### Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 205 contained TPHC concentrations

below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26E and revisions dated February 3, 1994). The samples collected on October 25, 1993 (A, B, C, D, E, DUP E, G, H, and I) contained TPHC concentrations ranging from 4.78 mg/kg to 127 mg/kg. The samples collected on October 26, 1993 (J, K, L, M, DUP K, and O) contained TPHC concentrations ranging from 7.91 mg/kg to 139 mg/kg. The samples collected on October 23, 1999 (1, 2, 3, 4, 5, and DUP 3) contained TPHC concentrations ranging from non detect to 412.24 mg/kg.

### Site Restoration

Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill. The excavation site was then restored to its original condition.

### Conclusions and Recommendations

Based on the post-excavation soil sampling results, soils with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg do not remain in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-3 at Building 205.

# 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

## 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-3, was closed at Building 205 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on October 24, 1993. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on June 6, 1993. The plan was approved on July 12, 1993 and assigned TMS No. C-93-2612. The UST was a single-walled fiberglass, 4,000-gallon tank containing No. 2 diesel.

Decommissioning activities for UST No. 081533-3 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: N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted onsite for inspection. CUTE Inc., the contractor that conducted the decommissioning activities, is registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 081533-3 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and the signed certifications for UST No. 081533-3 are included in Appendices A and B, respectively.

Based on an inspection of the UST, field screening of subsurface soils and analytical results of collected soil samples, the DPW has concluded that no significant historical discharges are associated with the UST or associated piping.

This UST Closure and Site Investigation Report has been prepared by BCM Engineers/Smith Environmental Technologies Corporation to assist the United States Army Directorate of Public Works (DPW) in complying with the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST) regulations. The applicable NJDEP-BUST regulations at the date of closure were the *Interim Closure Requirements for Underground Storage Tank Systems* (N.J.A.C. 7: 14B-1 et seq. September 1990 and revisions dated November 1, 1991).

This report was prepared using information required at the time of closure. Where possible, information required by the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) (*Technical Requirements*) was included. 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, including the results of the soil sampling investigation, are presented in the final section of this report.

## 1.2 SITE DESCRIPTION

Building 205 is located in the eastern portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 08 1533-3 was located east of Building 205 and appurtenant piping ran approximately 40 feet southeast to the fill port area. A site map is provided on Figure 2. The fill port area was located adjacent to an asphalt parking lot for easy access. The area surrounding Building 205 was assessed for old USTs using past maps and metal locating devices. None were found.

### 1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 205. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area. A geological map is provided on Figure 1A.

#### 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, 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 (Zapeczka, 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 Zapeczka, 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 gray 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).

### Hydrogeology

The water table aquifer in 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 of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (BGS). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore the direction of shallow groundwater should be determined on a case by case basis.

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

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

Due to the fluvial nature of the overburden deposits (e.g., 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 gravel silt and/or clay.

Building 205 is located approximately 1150 feet north of Oceanport Creek, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 205 is anticipated to be to the southeast.

### **1.3 HEALTH AND SAFETY**

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involve 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 an organic vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

### **1.4 REMOVAL OF UNDERGROUND STORAGE TANK**

#### **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 visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all closure activities.

#### **1.4.2 Underground Storage Tank Excavation and Cleaning**

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 305 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc., a NJDEP approved petroleum recycling and disposal facility located in Old Bridge, New Jersey. Refer to Appendix C for waste manifest (No. NJA-1706536).

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. *After* the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No cracks or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. All sites appeared to be clean except for possible contamination in sample areas C and D, where a profuse odor of fuel was noted and OVA readings were over 60 parts per million (ppm).

Soil screening was also performed along the USTs piping. No contamination was noted anywhere along the piping length.

### **1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL**

The tank was transported by CUTE Inc., to Monmouth County Reclamation Center for disposal in compliance with all applicable regulations and laws. Refer to Appendix D for UST disposal certificate.

The Subsurface Evaluator labeled the UST prior to transport with the following information:

- site of origin
- contact person
- NJDEP UST Facility ID number
- name of transporter/contact person
- destination site/contact person

### **1.6 MANAGEMENT OF EXCAVATED SOILS**

Based on OVA air monitoring and visual observations, approximately 16 cubic yards of potentially contaminated soils were excavated from sample location areas C and D on October 26, 1993. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to the Main Post ID 27 Soil Staging Area (T-80) prior to ultimate disposal at Soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination were used as backfill following removal of the UST.

## 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 U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (September 1990 and revisions dated November 1, 1991) which was the applicable regulation at the date of the closure. All records of the Site Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Closure and Site Investigation Activities.

- Closure Contractor: Cleaning Up The Environment Inc. (CUTE)  
Contact Person: Nancy Williams  
Phone Number: (201) 427-2881  
NJDEP Company Certification No.: 0200128
- Subsurface Evaluator: Charles M. Appleby  
Employer: U.S. Army, Fort Monmouth  
Phone Number: (908) 532-6224  
NJDEP Certification No.: 002056
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory  
Contact Person: Brian K. McKee  
Phone Number: (908) 532-4359  
NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Freehold Cartage, Inc.  
Contact Person: Barry Olsen  
Phone Number: (908) 462-1001  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soils were removed from the excavation surrounding UST No. 081533-3 until no evidence of contamination remained.

## 2.3 SOIL SAMPLING

On October 25, 1993, post-excavation soil samples A, B, C, D, E, DUP E, and G were collected from a total of six (6) locations along the sidewalls of the UST excavation immediately above groundwater. Groundwater was present at approximately 5 feet below ground surface (BGS). On October 25, 1993, two (2) post-excavation soil samples (H, and I) were also collected immediately below the former location of piping associated with the UST. Refer to soil sampling location map on Figure 3. All samples were analyzed for TPHC. Because none of the soil samples exhibited a concentration exceeding 1,000 milligrams per kilograms (mg/kg), none were analyzed for volatile organic compounds with a forward library search for 10 tentatively identified compounds (VO+ 10).

On October 26, 1993, soils from sampling location areas C and D were excavated due to OVA readings of over 60 ppm. Following removal of approximately 16 cubic yards of potentially contaminated soils, post-remediation soil samples (J, K, L, M, DUP K, and O) were collected from a total of five (5) locations along the sidewalls of the expanded portions of the excavation and were analyzed for TPHC.

On October 23, 1999, five (5) soil samples were collected along the former piping length of the excavation, which was approximately forty eight (48) feet in length. The piping samples were collected at a depth of 1.5 and 1.8 feet bgs. Refer to soil sampling location map on Figure 3.

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided on Table 1. The post-excavation soil samples were collected using polystyrene scoops. Following soil sampling activities, the samples were chilled and delivered to U.S. Army, Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey for analysis.

## 3.0 CONCLUSIONS AND RECOMMENDATIONS

### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of eight locations on October 25, 1993, five locations on October 26, 1993, and from a total of five locations on October 23, 1999. All samples were analyzed for TPHC. The post-excavation soil sample results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided on Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix E. The full data package, including associated quality control data, is on file at the U.S. Army Fort Monmouth, DPW.

All post-excavation soil samples collected on October 25, 1993, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Post-excavation samples A, B, C, D, E, DUP E, G, H, and I contained TPHC concentrations ranging from 4.78 mg/kg to 127 mg/kg.

All post-excavation soil samples collected on October 26, 1993 from the UST excavation contained concentrations of contaminants below the NJDEP soil cleanup criteria. Post-excavation samples J, K, L, M, DUP K, and O contained TPHC ranging in concentration from 7.91 mg/kg to 139 mg/kg.

All post-excavation soil samples collected on October 23, 1999 from the UST excavation contained concentrations of contaminants below the NJDEP soil cleanup criteria. Post-excavation samples 1, 2, 3, 4, 5, and DUP 3 contained TPHC ranging in concentration from non detect to 412.24 mg/kg.

### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all of post-excavation soil samples collected from the UST closure excavation at Building 205 were below the NJDEP soil cleanup criteria for total organic contaminants.

Based on the post-excavation soil sampling results, soils with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg do not remain in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-3 at Building 205.



TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES  
 BUILDING 205, MAIN POST AREA  
 FORT MONMOUTH, NEW JERSEY

Page 1 of 2

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
A	10/25/93	10/25/93	Soil	Post-Excavation	TPHC	418.1
B	10/25/93	10/25/93	Soil	Post-Excavation	TPHC	418.1
C	10/25/93	10/25/93	Soil	Post-Excavation	TPHC	418.1
D	10/25/93	10/25/93	Soil	Post-Excavation	TPHC	418.1
E	10/25/93	10/25/93	Soil	Post-Excavation	TPHC	418.1
DUP E	10/25/93	10/25/93	Soil	Post-Excavation	TPHC	418.1
G	10/25/93	10/25/93	Soil	Post-Excavation	TPHC	418.1
H	10/25/93	10/25/93	Soil	Post-Excavation	TPHC	418.1
I	10/25/93	10/25/93	Soil	Post-Excavation	TPHC	418.1
J	10/26/93	10/26/93	Soil	Post-Excavation	TPHC	418.1
K	10/26/93	10/26/93	Soil	Post-Excavation	TPHC	418.1
L	10/26/93	10/26/93	Soil	Post-Excavation	TPHC	418.1
M	10/26/93	10/26/93	Soil	Post-Excavation	TPHC	418.1
DUP K	10/26/93	10/26/93	Soil	Post-Excavation	TPHC	418.1
O	10/26/93	10/26/93	Soil	Post-Excavation	TPHC	418.1

Note:

\* TPHC Total Petroleum Hydrocarbons



TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES  
BUILDING 205, MAIN POST AREA  
FORT MONMOUTH, NEW JERSEY

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Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
1	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
2	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
3	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
4	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
5	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
DUP 3	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

\* TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 205, MAIN POST AREA  
 FORT MONMOUTH, NEW JERSEY

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Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/4.5-5.0' =	1297.1	10/25/93	10/25/93	Total Solid	--	--	82%	--	--
				TPHC	3.3	Yes	4.78	10,000	No
B/4.5-5.0' =	1297.2	10/25/93	10/25/93	Total Solid	--	--	87%	--	--
				TPHC	3.3	Yes	6.91	10,000	No
C/4.5-5.0' =	1297.3	10/25/93	10/25/93	Total Solid	--	--	82%	--	--
				TPHC	3.3	Yes	127.0	10,000	No
D/4.5-5.0' =	1297.4	10/25/93	10/25/93	Total Solid	--	--	81%	--	--
				TPHC	3.3	Yes	68.2	10,000	No
E/4.5-5.0' =	1297.5	10/25/93	10/25/93	Total Solid	--	--	82%	--	--
				TPHC	3.3	Yes	6.06	10,000	No
DUP E/4.5-5.0' =	1297.6	10/25/93	10/25/93	Total Solid	--	--	82%	--	--
				TPHC	3.3	Yes	17.6	10,000	No
G/4.5-5.0' =	1297.7	10/25/93	10/25/93	Total Solid	--	--	85%	--	--
				TPHC	3.3	Yes	37.6	10,000	No
H/1.0-1.5' =	1297.8	10/25/93	10/25/93	Total Solid	--	--	86%	--	--
				TPHC	3.3	Yes	13.3	10,000	No
I/1.0-1.5' =	1297.9	10/25/93	10/25/93	Total Solid	--	--	84%	--	--
				TPHC	3.3	Yes	7.76	10,000	No

## Note:

- \* Total Solid results are expressed as a percentage.
- \*\* NJDEP Residential Direct Contact soil cleanup criteria for total organics
- Not detected above stated sample quantitation limit
- TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 205, MAIN POST AREA  
 FORT MONMOUTH, NEW JERSEY

Page 2 of 3

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
J/4.5-5.0' =	1300.1	10/26/93	10/26/93	Total Solid	--	--	82%	--	--
				TPHC	3.3	Yes	33.2	10,000	No
K/4.5-5.0' =	1300.2	10/26/93	10/26/93	Total Solid	--	--	82%	--	--
				TPHC	3.3	Yes	8.0	10,000	No
L/4.5-5.0' =	1300.3	10/26/93	10/26/93	Total Solid	--	--	82%	--	--
				TPHC	3.3	Yes	139.0	10,000	No
M/4.5-5.0' =	1300.4	10/26/93	10/26/93	Total Solid	--	--	83%	--	--
				TPHC	3.3	Yes	26.1	10,000	No
DUP K/4.5-5.0' =	1300.5	10/26/93	10/26/93	Total Solid	--	--	83%	--	--
				TPHC	3.3	Yes	7.91	10,000	No
O/4.5-5.0' =	1300.6	10/26/93	10/26/93	Total Solid	--	--	83%	--	--
				TPHC	3.3	Yes	106.0	10,000	No

## Note:

- \* Total Solid results are expressed as a percentage.
- \*\* NJDEP Residential Direct Contact soil cleanup criteria for total organics
- Not detected above stated sample quantitation limit
- TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 205, MAIN POST AREA  
 FORT MONMOUTH, NEW JERSEY

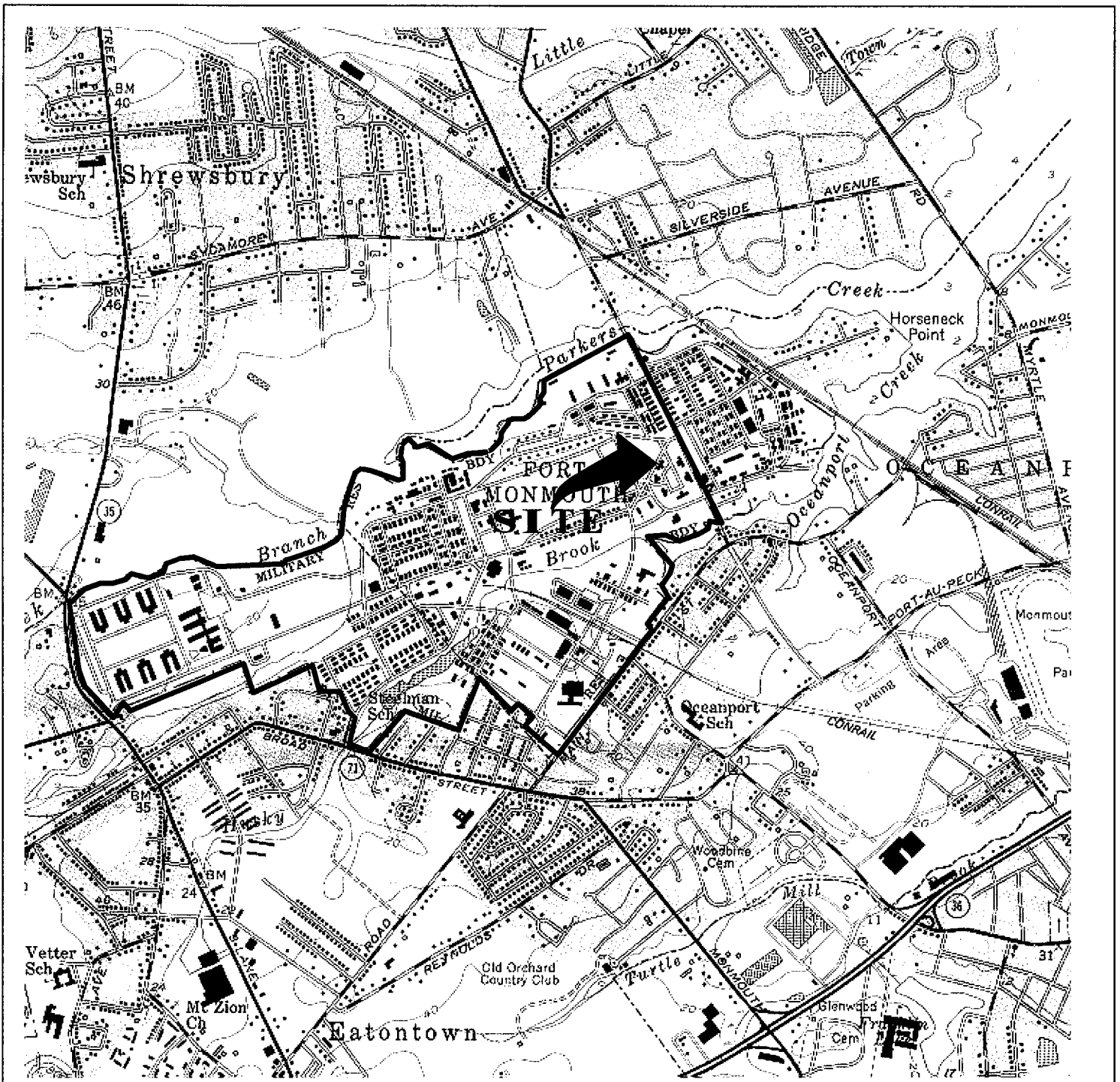
Page 3 of 3

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
1/1.8' =	4876.01	10/23/99	10/25/99	Total Solid	--	--	79.78%	--	--
				TPHC	194	Yes	ND	10,000	No
2/1.8' =	4876.02	10/23/99	10/25/99	Total Solid	--	--	81.34%	--	--
				TPHC	192	Yes	ND	10,000	No
3/1.5' =	4876.03	10/23/99	10/25/99	Total Solid	--	--	82.29%	--	--
				TPHC	191	Yes	ND	10,000	No
4/1.5' =	4876.04	10/23/99	10/25/99	Total Solid	--	--	76.93%	--	--
				TPHC	205	Yes	ND	10,000	No
5/1.8' =	4876.05	10/23/99	10/25/99	Total Solid	--	--	94.00%	--	--
				TPHC	159	Yes	412.24	10,000	No
Dup3/1.5' =	4876.06	10/23/99	10/25/99	Total Solid	--	--	80.96%	--	--
				TPHC	194	Yes	ND	10,000	No

## Note:

- \* Total Solid results are expressed as a percentage.
- \*\* NJDEP Residential Direct Contact soil cleanup criteria for total organics
- Not detected above stated sample quantitation limit
- TPHC Total Petroleum Hydrocarbons

**FIGURES**



**FIGURE 1**

LOCATION MAP  
 Building 205  
 Main-Post West  
 Fort Monmouth Army Base  
 Monmouth County, NJ

**VERSAR**  
 Engineers, Managers, Scientists, & Planners  
 Bristol, PA

Scale; 1" = 2000'

Date: OCT 1993

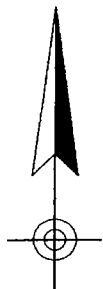
LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822



NEW JERSEY  
 QUADRANGLE LOCATION

# Geologic Map of New Jersey

## SEDIMENTARY ROCKS

### CENOZOIC

- Holocene: sand
- Tertiary: sand, silt, clay

### MESOZOIC

- Cretaceous: sand, silt, clay
- Jurassic: siltstone, shale, sandstone
- Triassic: siltstone, shale, sandstone

### PALEOZOIC

- Devonian: conglomerate, sandstone,
- Silurian: conglomerate, sandstone, shale, limestone
- Ordovician: shale, limestone
- Cambrian: limestone, sandstone

## IGNEOUS AND METAMORPHIC ROCKS

### MESOZOIC

- Jurassic: basalt
- Jurassic: diabase

### PRECAMBRIAN

- marble
- gneiss, granite



FIGURE 1A  
GEOLOGICAL MAP  
FORT MONMOUTH ARMY BASE  
MONMOUTH COUNTY, NJ

**VERSAR**  
Engineers, Managers, Scientists & Planners  
Bristol, Pennsylvania

HILDRETH AVENUE

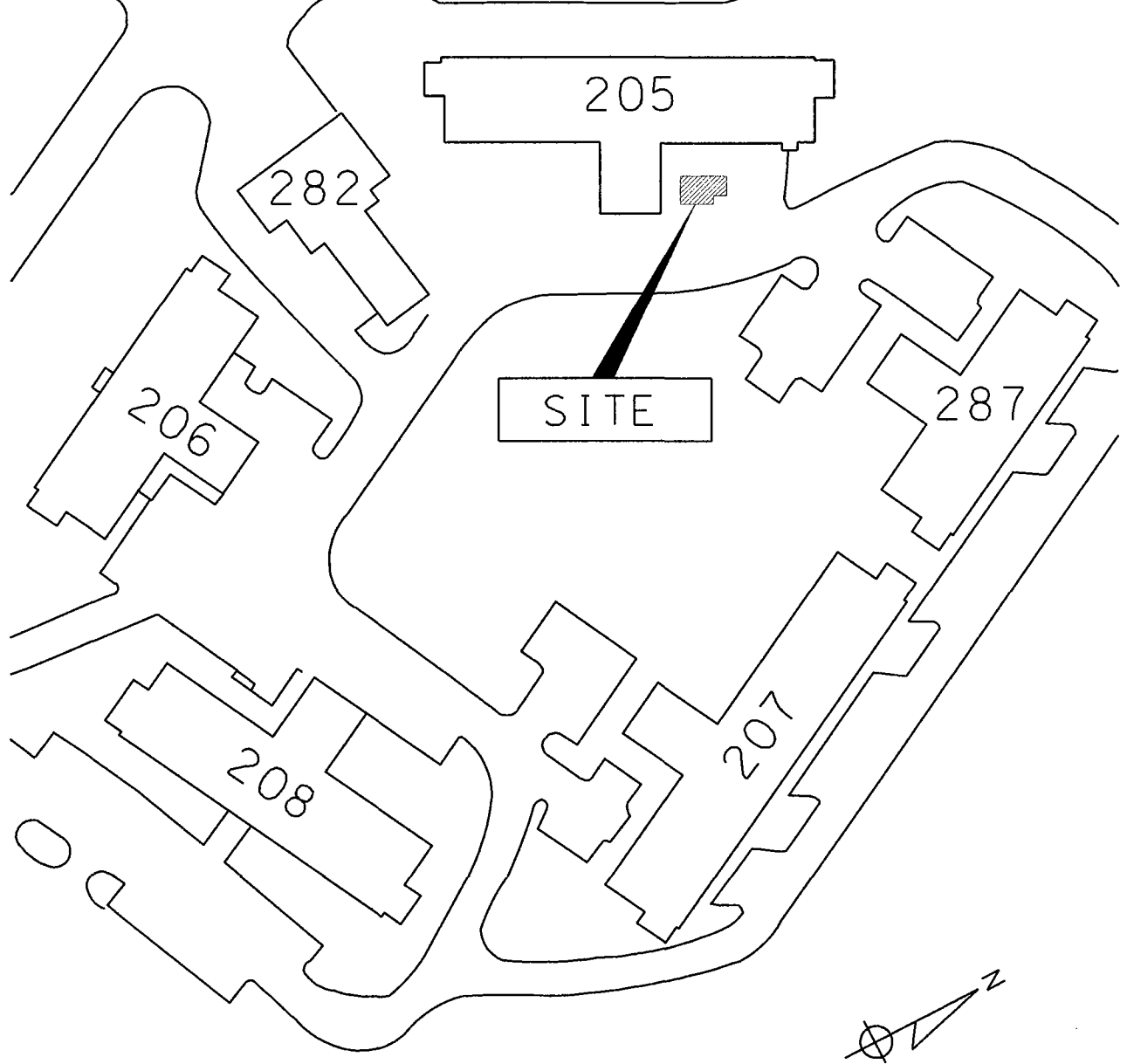


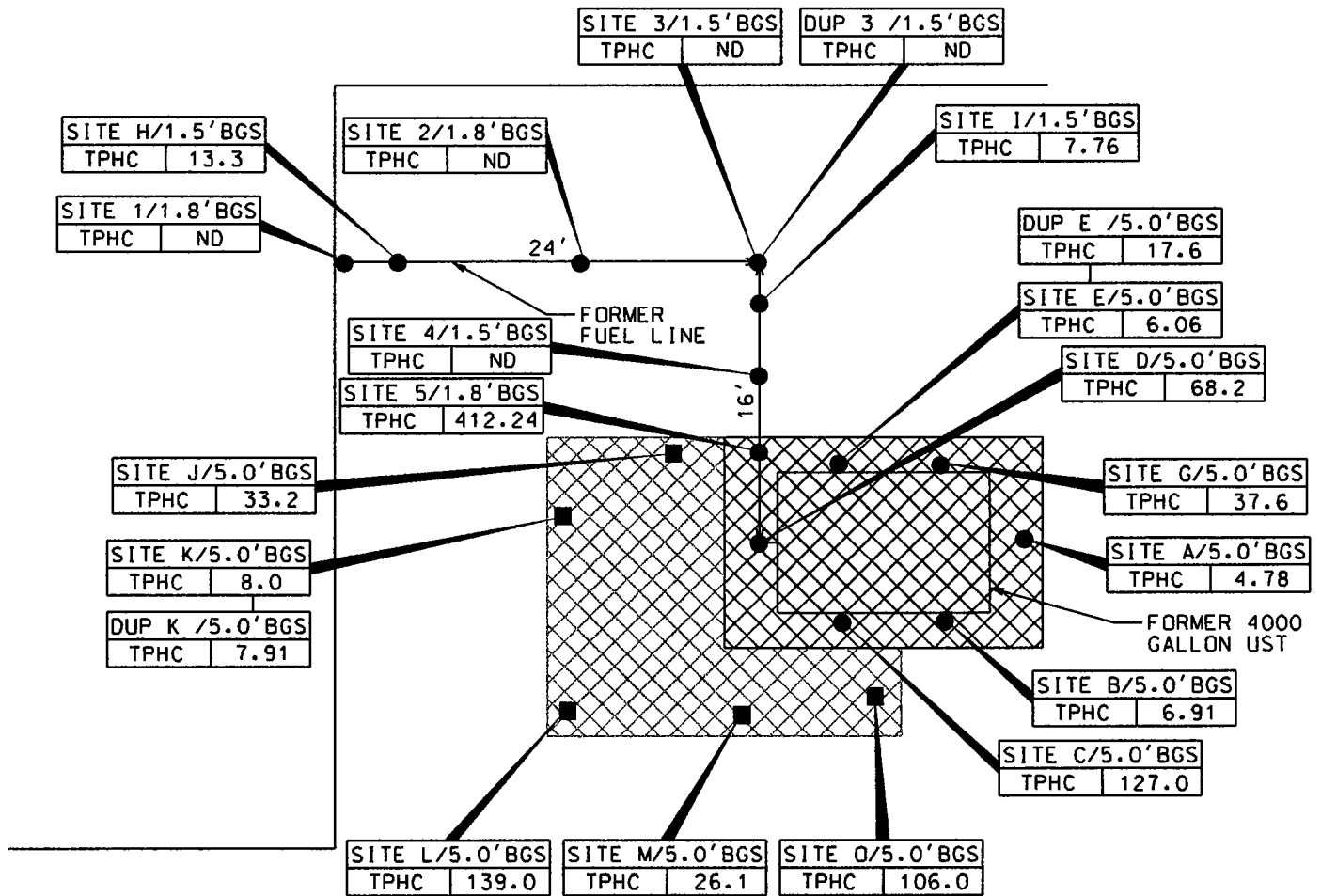
FIGURE 2  
SITE MAP  
BUILDING 205  
FORT MONMOUTH ARMY BASE  
MONMOUTH COUNTY, NJ

VERSAR  
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS  
BRISTOL, PA.

SCALE: 1"=100'      DATE: OCT 1993



# BUILDING 205



## LEGEND

- SOIL SAMPLE LOCATION (OCTOBER 25, 1993)
- SOIL SAMPLE LOCATION (OCTOBER 26, 1993)
- SOIL SAMPLE LOCATION (OCTOBER 23, 1999)
- ▨ LIMIT OF EXCAVATION (OCTOBER 25, 1993)
- ▨ LIMIT OF EXCAVATION (OCTOBER 26, 1993)

## NOTES:

1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE

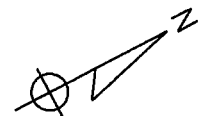


FIGURE 3  
SOIL SAMPLING LOCATION MAP  
BUILDING 205  
FORT MONMOUTH ARMY BASE  
MONMOUTH COUNTY, NJ

VERSAR  
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS  
BRISTOL, PA.

SCALE: 1"=10'

DATE: OCT 1993



**APPENDIX A**

**NJDEP BUST CLOSURE APPROVAL**

# UNDERGROUND STORAGE TANK SYSTEM CLOSURE APPROVAL

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL  
PROTECTION AND ENERGY

DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION  
BUREAU OF UNDERGROUND STORAGE TANKS  
CN-029, TRENTON, NJ 08625-0029

TMS # C-93-2612

UST #

0081515

US Army Fort Monmouth DEH Bldg. 205 Ft. Monmouth, NJ	0081533 <i>W</i>
Monmouth	

THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM  
THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14B-1 et seq.:

Removal of: one 4,000 gallon #2 diesel UST(s) and appurtenant piping.

SITE ASSESSMENT: Soil samples will be taken every five (5) feet along the center line of each tank and one (1) soil sample for every 15 feet along all associated piping. Two (2) additional samples will be taken from around the tank and biased to the areas of highest field screened readings. Samples will be analyzed for TPHC. If sample results are greater than 1,000ppm than samples will be analyzed for VO+10.

ON-SITE MANAGER: C. Appleby

TELEPHONE: 908-532-1475

OWNER:

TELEPHONE:

EFFECTIVE DATE: JUL 12 1993

THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED  
ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTION AT ALL TIMES.



KEVIN F. KRATINA, BUREAU CHIEF  
BUREAU OF UNDERGROUND STORAGE TANKS



**APPENDIX B**  
**CERTIFICATIONS**



UST # \_\_\_\_\_  
Date Rec'd \_\_\_\_\_  
TMS # \_\_\_\_\_  
Staff \_\_\_\_\_

State of New Jersey  
Department of Environmental Protection and Energy  
Division of Responsible Party Site Remediation  
CN 029  
Trenton, NJ 08625-0029  
Tel. # 609-984-3156  
Fax. # 609-292-5604

Scott A. Weiner -  
Commissioner

Karl J. Delaney  
Director

**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 USTs, 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.

10 1 AUG 1995

10 1 AUG 1995

Date of Submission \_\_\_\_\_

Building 205

0081533-3

FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

U.S. Army Fort Monmouth New Jersey

Directorate of Engineering and Housing Building 167

Fort Monmouth New Jersey 07703 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  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  N/A

III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. C-93-2612

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?  Yes  No  N/A
2. Were soil borings taken at the tank system closure site as prescribed?  Yes  No  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  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. 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. 139.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (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  Yes  No
  2. Free product contaminated soils are suspected to exist below the water table  Yes  No
  3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No
- D. Was the vertical and horizontal extent of contamination determined?  Yes  No  N/A
- E. Does soil contamination intersect ground water?  Yes  No  N/A

VI. GROUND WATER CONTAMINATION N/A

- A. Was ground water contamination found?  Yes  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. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
  2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
  3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
  4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
  5. greatest thickness of separate phase product found \_\_\_\_\_
  6. separate phase product has been delineated  Yes  No  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  N/A
  2. The number of these wells identified is \_\_\_\_\_.

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

E. A plan for separate phase product recovery has been included.  Yes  No  N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well.  
 Yes  No  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
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  
 Yes  No
3. Off property access (circle one):    is being sought    has been approved    has been denied

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 7-27-95  
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION NJDEP CERTIFICATION NUMBER 2056



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) next page SIGNATURE \_\_\_\_\_  
COMPANY NAME \_\_\_\_\_ DATE \_\_\_\_\_  
(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)1].

*"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 SIGNATURE *James Ott*  
COMPANY NAME U.S. Army Fort Monmouth DATE 7/27/95

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

- 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 \_\_\_\_\_

**UNDERGROUND STORAGE TANK (UST)  
CLOSURE CERTIFICATION**

BUILDING NO. 205

NJDEP UST REGISTRATION NO. 81533-3

DATE TANK REMOVED Oct. 25, 1993

IJO / CONTRACT NUMBER 93-1016

I CERTIFY UNDER PENALTY OF LAW THAT TANK DECOMMISSIONING ACTIVITIES WERE PERFORMED IN COMPLIANCE WITH NJAC 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) John Loneragan

SIGNATURE 

NJDEP UST CLOSURE CERTIFICATE NO. 0003248

COMPANY PERFORMING TANK DECOMMISSIONING CUTE Inc.

NJDEP UST CLOSURE CORPORATE CERTIFICATE NO. 0200128

DATE OF SUBMITTAL 2/20/95



**APPENDIX C**  
**WASTE MANIFEST**



**State of New Jersey  
Department of Environmental Protection and Energy  
Hazardous Waste Regulation Program  
Manifest Section  
CN 028, Trenton, NJ 08625-0028**

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

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NJ 32110020597	Manifest Document No. 000016	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address US Army Communications Electronics Command c/o James Shirghio, Bldg 2504 ATTN: SELFM-DL-EM-MS Fort Monmouth NJ 07703			State Manifest Document Number <b>NJA 1706536</b>		
4. Generator's Phone (908) 532-6224	6. US EPA ID Number		B. State Generator's ID Bldg. 205-81533-3 Main Post 0-93-2612		
5. Transporter 1 Company Name Freehold Cartage Inc.	7. US EPA ID Number NJ D054126164		C. State Trans. ID HDEP 15226		
7. Transporter 2 Company Name	8. US EPA ID Number		D. Transporter's Phone (908) 462-1001		
9. Designated Facility Name and Site Address Lionetti Oil Recovery Co., Inc. Runyon & Cheesequake Rds. Old Bridge, NJ 08857		10. US EPA ID Number		E. State Trans. ID	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) X Petroleum Oil N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III		12. Containers 0 0 1 T T		F. Transporter's Phone ( ) G. State Facility's ID H. Facility's Phone (908) 721-0900	
J. Additional Descriptions for Materials Listed Above T, L Petroleum Oil 90% Water 10%		K. Handling Codes for Wastes Listed Above T04-Filtration			
15. Special Handling Instructions and Additional Information NOT EPA REGULATED, REGULATED AS HAZARDOUS WASTE IN NJ 24 HOUR EMERGENCY# 201-427-2881 NJ DECAL# 48594 ERG# 27					
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. 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 or future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to maximize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name Charles M. Appleby		Signature <i>[Signature]</i>		Month Day Year 11 10 19	
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name ALFONSO TROCENITO		Signature <i>[Signature]</i>		Month Day Year 11 10 19	
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name		Signature		Month Day Year	
19. I prepared this manifest using					
20. I certify that the information on this manifest is true and correct and that the hazardous materials covered by this manifest are as listed on this manifest.					
Printed/Typed Name		Signature		Month Day Year	

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

SIGNATURE AND INFORMATION MUST BE LEGIBLE ON ALL COPIES

GENERATOR CERTIFICATION

I hereby certify that the waste described on Hazardous Waste Manifest No. NJA 1706538 dated \_\_\_\_\_, is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

X721: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

X722: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

X723: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.

X724: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.

X725: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.

X726: The following used and unused waste oils: metal working oils; turbine lubricating oils; diesel lubricating oils; and quenching oils.

X728: Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

I am duly authorized to sign said certification.

Generator U.S. Army Communications Electronics Command, Fort Monmouth

Generator's EPA ID No. NJ3210020597 - 200

Address C/O James Shicchio, Bldg 2504 ATW 5E1PM-DL-EM-115 <sup>Fort Monmouth NJ 077</sup>

Print Name Charles Appleby Signature [Signature]

Title Environmental Protection Specialist

Date 11/1/93



**APPENDIX D**

**UST DISPOSAL CERTIFICATE**



MONMOUTH COUNTY RECLAMATION CENTER

TINTON FALLS, NJ  
MAILING ADDRESS: 2000 ASSURAY AVE  
NEPTUNE, NJ 07753

632709

FACILITY ID NO. 13361501

RECEIPT DOCUMENT NUMBER

01337919

FREEHOLD 152  
FREEHOLD CARTAGE INC  
P.O. BOX 5010  
FREEHOLD NJ 07728

TARE WEIGHT 18.6800 37350  
GROSS WEIGHT 22.5900 45180

DATE OF RECEIPT: 11/10/93 OPERATOR: MED-14106 TRUCK NO: 15939AX TIRTY PLATE NO: KP51KA 14135

QUANTITY	UNITS	DESCRIPTION	ORIGIN	AMOUNT
3.9100	Tons	Bulky Waste	MONMOUTH COUNTY EATONTOWN BOROUGH	

QUANTITY	UNITS	DESCRIPTION	ORIGIN	AMOUNT
3.9100	Tons	Bulky Waste	MONMOUTH COUNTY EATONTOWN BOROUGH	

Prepayment Balance Remaining: \$2528.97  
TRANSPORTER'S SIGNATURE: [Signature]

DOCUMENT TOTAL

3.91 tons Bulky Waste  
Fiberglass tank disposal Bldg 208A, 282, 205, 207A, 287, 206



## APPENDIX E

### SOIL 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 #: 1297.1-.9  
 Sample Rec'd: 10/25/93  
 Analysis Start: 10/25/93  
 Analysis Comp: 10/25/93

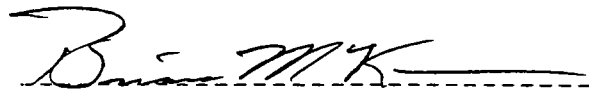
Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Method: SONC.

NJDEPE UST Reg.#: 0081533-3  
 TMS #: C-93-2612  
 NJDEPE Case #:  
 Location #: Bldg. # 205

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1297.1	Site A, 4.5 - 5' hNu< 1.0	82	4.78	3.3
1297.2	Site B, 4.5 - 5' hNu=2.0	87	6.91	3.3
1297.3	Site C, 4.5 - 5' hNu=30.	82	127.	6.6
1297.4	Site D, 4.5 - 5' hNu=50.	81	68.2	6.6
1297.5	Site E, 4.5 - 5' hNu< 1.0	82	6.06	3.3
1297.6	Site F, Dup. of E hNu=3.0	82	17.6	3.3
1297.7	Site G, 4.5 - 5' hNu=4.0	85	37.6	3.3
1297.8	Site H, 1 - 1.5' hNu< 1.0	86	13.3	3.3
1297.9	Site I, 1 - 1.5' hNu< 1.0	84	7.76	3.3
M. BL.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added

1297.6 Spike = 95% 1297.6 Spike Dup. = 98% RPD: 97%



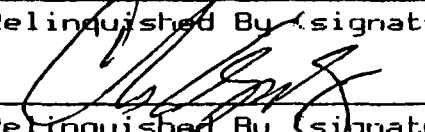
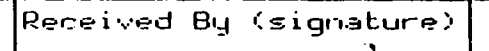
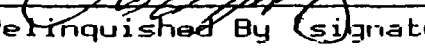
Brian K. McKee  
 Laboratory Director

P.O. #: \_\_\_\_\_

Chain of Custody

Project #: <b>C-93-2612</b>	Sampler: <b>COTE</b>	Date / Time <b>10/25/93 1330</b>	Analysis Parameters	Start:
Customer: <b>Charles Appleby</b> <b>DPW - Subsurface Evaluation</b> <b>2056</b>	Site Name: <b>Bldg 205 ust closure</b> <b>UST# 81533-3</b>			Finish:
Phone: <b>26224</b>				Preservation Method

Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	% Solids	Manganese	Oil	Remarks
1297-1	10/25/93 1343	Site A - 4.5-5	Soil	1	X	X	X	2.0	
12	1347	Site B 4.5-5	Soil	1	X	X	X	2.0	
13	1350	Site C 4.5-5	Soil	1	X	X	X	30.0	
14	1348	Site D 4.5-5	Soil	1	X	X	X	50.0	
15	1356	Site E 4.5-5	Soil	1	X	X	X	<1	
16	135	Site F - Duplicate of E	Soil	1	X	X	X	3.0	
17	1359	Site G - 4.5-5	Soil	1	X	X	X	4.0	Kept 24°C
18	1402	Site H - 1-1.5	Soil	1	X	X	X	<1	Over-see A.58114
19	1406	Site J - 1-1.5	Soil	1	X	X	X	<1	Calibrate to 95 ppm methanol Read - 96.5 ppm dCO4

Relinquished By (signature) 	Date / Time <b>10/25/93 1420</b>	Received By (signature) 	Shipped By:
Relinquished By (signature) 	Date / Time	Received for Lab by (signature): <b>X Sarah J. Hubbard</b>	Date / Time

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

PRINTED IN U.S.A.

October 25, 1993 Sarah Hubbard

1800

Blank 0 MV

33.75 79 MV

67.5 158 MV

135 317 MV

R. 9999

1297.1 11 MV

1297.2 16 MV

1297.3 del (1.5) 299 MV

1297.4 del (7) 160 MV

1297.5 14 MV

1297.6 41 MV

1297.6 ~~2~~ spk 106

1297.6 spk dup 109 MV

1297.7 88 MV

1297.8 31 MV

1297.9 18 MV

10-1-6070-10

PHC Conformance/Non-conformance Summary Report

No Yes

1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank

2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)

3. IR Spectra submitted for standards, blanks, & samples

4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.

5. Extraction holding time met. (If not met, list number of days exceeded for each sample)

6. Analysis holding time met. (If not met, list number of days exceeded for each sample)

Comments:

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

  
Brian K. McKee  
Laboratory Manager

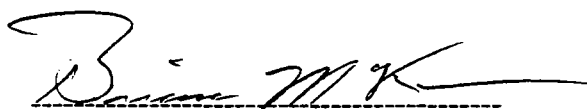
**Report of Analysis**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEPE Certification # 13461**

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

Lab. ID #: 1297.1-.9  
Sample Rec'd: 10/25/93  
Analysis Start: 10/25/93  
Analysis Comp: 10/25/93

Analysis: Munsel

Lab ID#	Soil Color
1297.1	5Y 4/2 Olive Gray
1297.2	5Y 5/2 Olive Gray
1297.3	5Y 3/1 Very Dark Gray
1297.4	5Y 4/2 Olive Gray
1297.5	5Y 4/2 Olive Gray
1297.6	5Y 4/2 Olive Gray
1297.7	5Y 4/2 Olive Gray
1297.8	5Y 4/2 Olive Gray
1297.9	5Y 4/3 Olive



Brian K. McKee  
Laboratory Director

11/8/93 2:28 PM

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 #: 1300.1-.6  
 Sample Rec'd: 10/26/93  
 Analysis Start: 10/26/93  
 Analysis Comp: 10/27/93


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

NJDEPE UST Reg.#: 0081533-3  
 TMS #: C-93-2612  
 NJDEPE Case #:  
 Location #: Bldg. # 205

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1300.1	Site J, 4.5 - 5' hNu < 1.0	82	33.2	3.3
1300.2	Site K, 4.5 - 5' hNu = 2.0	82	8.0	3.3
1300.3	Site L, 4.5 - 5' hNu < 1.0 *	82	139.	3.3
1300.4	Site M, 4.5 - 5' hNu = 1.0	83	26.1	3.3
1300.5	Site N, Dup. of K, hNu = 1.0	83	7.91	3.3
1300.6	Site O, 4.5 - 5' hNu < 1.0 *	83	106.	3.3
M. BL.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added

1300.5 Spike = 104% 1300.5 Spike Dup. = 102% RPD: 98%



Brian K. McKee  
 Laboratory Director

P.O. #: \_\_\_\_\_

Chain of Custody

Project #: C-93-2612		Sampler: Cote Inc.		Date / Time: 10/26/93 1030		Analysis Parameters				Start:	
Customer: DPW Charles Apple		Site Name: Bldg. 205								Finish:	
Phone: X 26224		UST# 81533-3 TMS-C-93-2612								Preservation Method	
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPAC	% Solid	Mutual			OUR Ready	Remarks
1300.1	10/26/93 1340	Site J - 4.5-5'	Soil	1	X	X	X			<10	
1300.2	1342	K - 4.5-5'	Soil	1	X	X	X			2.0	
1300.3	1344	L - 4.5-5'	Soil	1	X	X	X			<10	
1300.4	1347	M - 4.5-5'	Soil	1	X	X	X			1.0	
1300.5	1342	N - Dipe of K	Soil	1	X	X	X			1.0	Kept 240°C
1300.6	1349	O - 4.5-5'	Soil	1	X	X	X			<10	
										CWA-50114 Collected 10/26/93 - 10:30 w/ 95ppm method → Real 92ppm CA	
Relinquished By (signature): <i>Ch Apple</i>		Date / Time: 10/26/93 1435		Received By (signature): <i>Sarah J. Hubbard</i>		Shipped By:					
Relinquished By (signature):		Date / Time:		Received For Lab by (signature):				Date / Time:			

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

October 27, 1993  
Sarah Hubbard

Blank 0 MV

1445

33.75 82 MV

67.5 164 MV

135 327 MV

1300.1 20 MV

1300.2 5 MV

1300.3 83 MV

1300.4 16 MV

1300.5 5 MV (Dup of 1300.2)

1300.5 Spk 80 MV

1300.5 Spk Dup 78 MV

1300.6 64 MV

198-6970-00





PHC Conformance/Non-conformance Summary Report

No Yes

1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank

2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)

3. IR Spectra submitted for standards, blanks, & samples

4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.

5. Extraction holding time met. (If not met, list number of days exceeded for each sample)

6. Analysis holding time met. (If not met, list number of days exceeded for each sample)

Comments:

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.



Brian K. McKee  
Laboratory Manager

**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 #: 1300.1-6  
Sample Rec'd: 10/26/93  
Analysis Start: 10/26/93  
Analysis Comp: 10/27/93

Analysis: Munsel

Lab ID#	Soil Color
1300.1	2.5 4/2 Dark Grayish Brown
1300.2	5Y 4/3 Olive
1300.3	5Y 4/2 Olive Gray
1300.4	5Y 5/3 Olive
1300.5	5Y 4/3 Olive
1300.6	5Y 4/3 Olive



Brian K. McKee  
Laboratory Director

11/8/93 2:15 PM

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699




ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: UST

## Bldg. 205

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
205-1 22"	4876.01	Soil	23-Oct-99 12:00	10/25/99
205-2 22"	4876.02	Soil	23-Oct-99 12:13	10/25/99
205-3 1.5'	4876.03	Soil	23-Oct-99 12:27	10/25/99
205-4 1.5'	4876.04	Soil	23-Oct-99 12:35	10/25/99
205-5 22"	4876.05	Soil	23-Oct-99 12:43	10/25/99
Field Dup. 1.5'	4876.06	Soil	23-Oct-99	10/25/99

ANALYSIS:  
FORT MONMOUTH ENVIRONMENTAL LAB  
TPHC, %SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

 10-29-99  
Daniel Wright/Date  
Laboratory Director

## Table of Contents

<u>Section</u>	<u>Pages</u>
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Results Summary	4
Initial Calibration Summary	5-10
Continuing Calibration Summary	11-13
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MS/MSD Results Summary	15
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Raw Sample Data	17-30
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## Method Summary

### NJDEP Method OQA-QAM-025-10/97

#### Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1 mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

000001

**PHC Conformance/Non-conformance Summary Report**

Indicate  
Yes, No, N/A

- 1. Method Detection Limits provided. Yes
  
- 2. Method Blank Contamination – If yes, list the sample and the corresponding concentrations in each blank. NO  
\_\_\_\_\_  
\_\_\_\_\_
  
- 3. Matrix Spike Results Summary Meet Criteria Yes  
(If not met, list the sample and corresponding recovery which falls outside the acceptable range).  
\_\_\_\_\_  
\_\_\_\_\_
  
- 4. Duplicate Results Summary Meet Criteria Yes  
(If not met, list the sample and corresponding recovery which falls outside the acceptable range).  
\_\_\_\_\_  
\_\_\_\_\_
  
- 5. IR Spectra submitted for standards, blanks and samples. NA
  
- 6. Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted. Yes
  
- 7. Analysis holding time met. Yes  
(If not met, list number of days exceeded for each sample).  
\_\_\_\_\_  
\_\_\_\_\_

Additional comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

  
\_\_\_\_\_  
Laboratory Manager

10-29-99  
\_\_\_\_\_  
Date



# Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil

NJDEP Certification #13461

## Chain of Custody Record

Customer: <u>APPLEBY</u>				Project No:				Analysis Parameters						Comments:							
Phone #: <u>26624</u>				Location: <u>BLDG. 205</u>				T	P	H	C	%	S	O	I	D	H	N	U	Cal. # <u>2</u>	
( ) DERA ( ) WOMA ( ) Other: _____				Samplers Name / Company: <u>MARIL LAURA - TVS - PWS 07</u>																Sample #	
Lab Sample I.D.	Sample Location		Date	Time	Type	bottles															
<u>4870</u>	<u>1</u>	<u>205-1</u>	<u>22"</u>	<u>10-23-99</u>	<u>1200</u>	<u>soil</u>	<u>1</u>	<u>&gt;</u>	<u>X</u>								<u>0</u>	<u>PPM</u>	<u>4" - SIDEWALK</u>	<u>2400</u>	
	<u>2</u>	<u>-2</u>	<u>"</u>	<u>"</u>	<u>1213</u>	<u>"</u>	<u>"</u>	<u>X</u>	<u>X</u>								<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>	
<u>1</u>	<u>3</u>	<u>-3</u>	<u>1.5'</u>	<u>"</u>	<u>1227</u>	<u>"</u>	<u>"</u>	<u>&gt;</u>	<u>X</u>								<u>"</u>	<u>LAWN</u>	<u>"</u>	<u>"</u>	
	<u>4</u>	<u>-4</u>	<u>1.5'</u>	<u>"</u>	<u>1235</u>	<u>"</u>	<u>"</u>	<u>X</u>	<u>X</u>								<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>	
	<u>5</u>	<u>-5</u>	<u>22"</u>	<u>"</u>	<u>1243</u>	<u>"</u>	<u>"</u>	<u>X</u>	<u>X</u>								<u>"</u>	<u>ASPHALT 4"</u>	<u>"</u>	<u>"</u>	
	<u>6</u>	<u>FIELD DUP.</u>	<u>1.5'</u>	<u>"</u>	<u>-</u>	<u>"</u>	<u>"</u>	<u>X</u>	<u>X</u>								<u>"</u>	<u>-</u>	<u>"</u>	<u>"</u>	
Relinquished by (signature): <u>[Signature]</u>				Date/Time: <u>10/23/99 1750</u>		Received by (signature): <u>[Signature]</u>				Relinquished by (signature):				Date/Time:		Received by (signature):					
Relinquished by (signature):				Date/Time:		Received by (signature):				Relinquished by (signature):				Date/Time:		Received by (signature):					
Report Type: <input type="radio"/> Full, <input type="radio"/> Reduced, <input checked="" type="radio"/> Standard, <input type="radio"/> Screen / non-certified										Remarks:											
Turnaround time: <input checked="" type="radio"/> Standard 3 wks, <input type="radio"/> Rush _____ Days, <input type="radio"/> ASAP Verbal _____ Hrs.																					

000003

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

**Client :** U.S. Army  
 DPW. SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703


**Lab. ID # :** 4876  
**Date Rec'd:** 25-Oct-99  
**Analysis Start:** 25-Oct-99  
**Analysis Complete:** 26-Oct-99

**Analysis:** OQA-QAM-025  
**Matrix:** Soil  
**Analyst:** D.DEINHARDT  
**Inst. ID.** GC TPHC INST. #1  
**Column Type** RTX 5  
**Ext. Meth:** Shake

**UST Reg. #:**  
**Closure #:**  
**DICAR #:**  
**Injection Volume** 1 ul  
**Column ID** 0.32 mm  
**Location #:** Bldg. 205

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4876.01	205-1	1.00	15.15	79.78	194	ND
4876.02	205-2	1.00	15.05	81.34	192	ND
4876.03	205-3	1.00	14.96	82.29	191	ND
4876.04	205-4	1.00	14.92	76.93	205	ND
4876.05	205-5	1.00	15.70	94.00	159	412.24
4876.06	Field Dup.	1.00	15.00	80.96	194	ND
<b>METHOD BLANK</b>	TBLK275	1.00	15.00	100.00	157	ND

ND = Not Detected  
 MDL = Method Detection Limit

  
 Daniel K. Wright  
 Laboratory Director



**LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY**

**THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS**

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

- 1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted
- 2. Table of Contents submitted
- 3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted
- 4. Document paginated and legible
- 5. Chain of Custody submitted
- 6. Samples submitted to lab within 48 hours of sample collection
- 7. Methodology Summary submitted
- 8. Laboratory Chronicle and Holding Time Check submitted
- 9. Results submitted on a dry weight basis
- 10. Method Detection Limits submitted
- 11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP

✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓

Laboratory Manager or Environmental Consultant's Signature  
Date 10/29/99

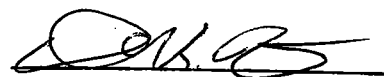


Laboratory Certification #13461

\*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

## Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

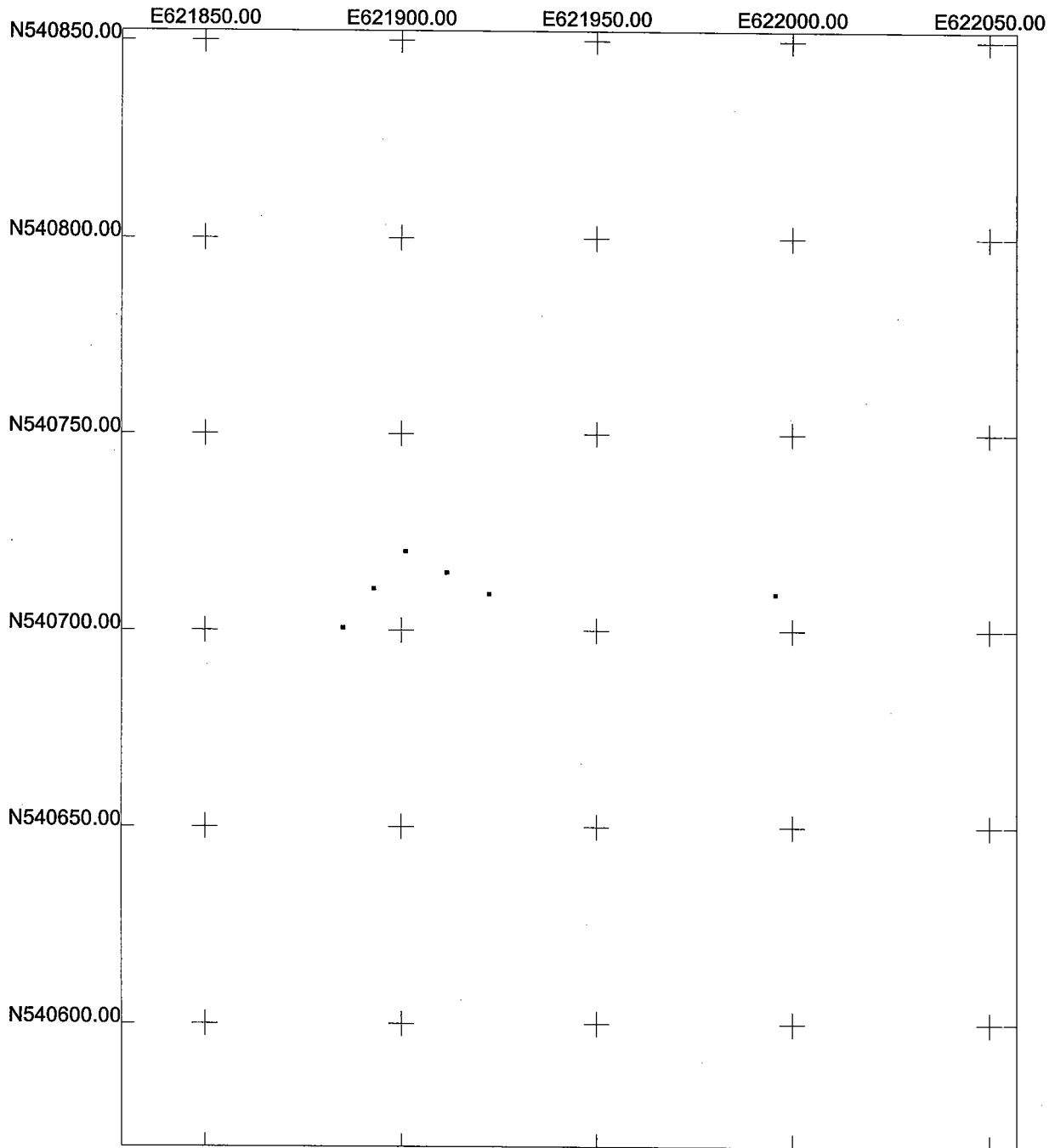


**Daniel K. Wright**  
**Laboratory Manager**

000032

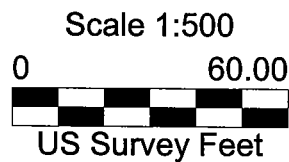
**APPENDIX F**

**ELECTRONIC DATA DELIVERABLES**



## Bldg. 205 UST Soil Samples GPS Map

US State Plane 1983  
 New Jersey (NY East) 2900  
 NAD 1983 (Conus)



r051316b.cor  
 5/17/2000  
 Pathfinder Office  
**Trimble**

**BLDG. 205 UST SOILSAMPLES GPS MAPS**

US STATE PLANE 1983 NJ ( NY EAST ) 2900 NAD 1983 ( CONUS )

( IN US SURVEY FEET )

**SAMPLE POINTS**

<b><u>POSITION / DESC.</u></b>	<b><u>Y COORD. ( NORTHING )</u></b>	<b><u>X COORD. ( EASTING )</u></b>
1	540700.81	621885.014
2	540710.822	621892.861
3	540720.293	621900.979
4	540714.881	621911.532
5	540709.524	621922.356

**REFERENCE POINTS**

<b><u>POSITION / DESC.</u></b>	<b><u>Y COORD. ( NORTHING )</u></b>	<b><u>X COORD. ( EASTING )</u></b>
STROM DRAIN	540709.469	621995.523