# **United States Army**

Fort Monmouth, New Jersey

# Underground Storage Tank Closure and Site Investigation Report

Building 1106 Main Post Area

NJDEP UST Registration No. 081533-166 NJDEP Closure Approval No. C-93-3564

February 1996



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# UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT

## **BUILDING 1106**

### MAIN POST AREA NJDEP UST REGISTRATION NO. 081533-166 NJDEP CLOSURE APPROVAL NO. C-93-3564

#### **FEBRUARY 1996**

### PROJECT NO.: 09-5004-07 **CONTRACT NO.: DACA51-94-D-0014**

#### **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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## EXECUTIVE SUMMARY

#### <u>UST Closure</u>

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On September 15, 1994, a fiberglass underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval No. C-93-3564 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-166, was located immediately adjacent to Building 1106 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-166 was a 1,000-gallon No. 2 diesel oil 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). 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 September 21, 1994, six days after the UST was pulled, post-excavation soil samples A, B, C, D, E, F, and DUP F were collected from a total of six (6) locations along the sidewalls of the excavation. Sample H was also collected immediately below the former location of the piping, which ran approximately 15 feet. All samples were analyzed for total petroleum hydrocarbons (TPHC).

#### **Findings**

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All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 1106 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. 7:26D and revisions dated February 3, 1994). All samples contained levels of TPHC ranging in concentration from 27.1 mg/kg to 445.0 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.

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#### Site Assessment Quality Assurance

The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements*.

#### 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. 081533-166 at Building 1106.



# 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

#### 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-166, was closed at Building 1106 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on September 15, 1994. 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, and assigned TMS No. C-93-3564. The UST was a single-walled, fiberglass, 1,000-gallon tank containing No. 2 diesel oil.

Decommissioning activities for UST No. 081533-166 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. 081533-166 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The signed certifications for UST No. 081533-166 are included in Appendix A.

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 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. 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.



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Site Location Map

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### **1.2 SITE DESCRIPTION**

Building 1106 is located in the southwestern portion of the Main Post area of Fort Monmouth as shown on Figure 1. UST No. 081533-166 was located east of Building 1106 and appurtenant piping ran approximately 15 feet north from Building 1106 to the fill port area. A site map is provided on Figure 2. The fill port area was located directly above the UST.

#### 1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 1106. 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.

#### 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 (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-



Site Map

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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.

#### 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.



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## 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 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. On April 21, 1994 a total of 480 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 B for waste manifest No. NJA-1603246. On September 15, 1994 a total of 20 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc. for disposal. Refer to Appendix B for waste manifest No. NJA-1907296.

The UST was cleaned prior to removal from the excavation in accordance with 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. No evidence of contamination was noted.

Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length.



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### 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. See Appendix C 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 TPHC analysis results from the post-excavation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.

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## 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: Dinkerrai M. Desai Employer: U.S. Army, Fort Monmouth Phone Number: (908) 532-1475
   NJDEP Certification No.: E0002266
- 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. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom, were found to be free of potential contamination.



#### 2.3 SOIL SAMPLING

On September 21, 1994, post-excavation soil samples A, B, C, D, E, F, and DUP F were collected from a total of six (6) locations along the sidewalls of the UST excavation. Post-excavation soil sample H was 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 total petroleum hydrocarbons (TPHC). Because none of the post-excavation soil samples exhibited a TPHC concentration exceeding 1,000 milligrams per kilogram (mg/kg), none were analyzed for volatile organic compounds with a forward library search for 10 tentatively identified compounds (VOCs).

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 in Table 1. The post-excavation soil samples were collected using polystyrene scoops. Actual soil TPHC values may be higher than reported, due to sample utensil absorbency. If absorbency resulted in reducing the actual soil TPHC concentration by 50 %, the highest soil contaminant would have been 890.0 mg/kg, still below the applicable NJDEP soil cleanup standard for total organic contaminants of 10,000 mg/kg. 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.



Soil Sampling Results

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#### SUMMARY OF SAMPLING ACTIVITIES BUILDING 1106, MAIN POST FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
Α	09-21-94	Soil	Post-Excavation	ТРНС	Polystyrene Scoop
В	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
С	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
D	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
Е	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
F	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
DUP F	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
H	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
*Note: TPHC	Total Petroleum Hyd	rocarbons (Method	1418.1 / soil and aqueous)		

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## 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 seven (7) locations on September 21, 1994. 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 in Table 2 and the soil sampling results are shown on Figure 3. The soil analytical data package is provided in Appendix D.

All post-excavation soil samples collected on September 21, 1994, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. All samples contained levels of TPHC ranging in concentration from 27.1 mg/kg to 445.0 mg/kg.

#### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 1106 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 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. 081533-166 at Building 1106.

#### TABLE 2

#### POST-EXCAVATION SOIL SAMPLING RESULTS BUILDING 1106 FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 1

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria * (mg/kg)	Exceeds Cleanup Criteria
A/6,5-7.0'	1646.1	09-21-94	09-23-94	Total Solid			84 %		<sup>·</sup>
				TPHC	6.6	yes	31.8	10,000	
B/6.5-7.0'	1646.2	09-21-94	09-23-94	Total Solid			85 %		
				TPHC	6.6	yes	36.7	10,000	
C/6.5-7.0'	1646.3	09-21-94	09-23-94	Total Solid			88 %		
				TPHC	6.6	yes	276.0	10,000	
D/6.5-7.0'	1646.4	09-21-94	09-23-94	Total Solid			84 %		
				TPHC	6.6	yes	445.0	10,000	
E/6.5-7.0'	1646.5	09-21-94	09-23-94	Total Solid			85 %		
	·			TPHC	6.6	yes	36.7	10,000	
F/6.5-7.0'	1646.6	09-21-94	09-23-94	Total Solid			82 %		
				TPHC	6.6	yes	27.1	10,000	
DUP F/6.5-7.0'	1646.7	09-21-94	09-23-94	Total Solid			83 %	· .	•
				TPHC	6.6	yes	32.2	10,000	·
H/1.5-2.0'	1646.8	09-21-94	09-23-94	Total Solid			89 %		
				TPHC	6.6	yes	30.0	10,000	

Notes:

Cleanup criteria for total organics
 Not applicable / does not exceed criteria
 TPHC Total Petroleum Hydrocarbons

Smith Environmental Technologies Corporation. (Project No. 09-5004-07)

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# APPENDIX A

# CERTIFICATIONS

FOR STATE USE ONLY

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UST#	
Date Rec'd	
TMS #	
Staff	
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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 UST's, explains the regulatory (and technical) requirements for closure and the Scope of Work, Investigation and Corrective Action Requirements for Discharges from Uncerground 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

# B-ldg. 1106

081533-166 FACILITY REGISTRATION #

#### I. FACILITY NAME AND ADDRESS

U.S. Army, Fort Monmouth, New Jersey

Directorate of Engineering a	and Housing, Building 167
Fort Monmouth, New Jersey	County Monmouth
Telephone No. (908) 532-1475	

#### OWNER'S NAME AND ADDRESS, if different from above

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#### Telephone No.

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- 11. 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
- 111. DECOMMISSIONING OF TANK SYSTEMS

Ciosure Approval No. C-93-3564

The site assessment requirements associated with <u>tank decommissioning</u> are explained in the Technical Guidance Document, interim Closure Requirements for UST's, Section V. A-D. <u>Attach</u> complete documentation of the methods used and the results obtained for each of the steps of <u>tank</u> <u>decommissioning</u> used. Please include a <u>site</u> 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
  - 1. 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\_NA

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- 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

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- 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:

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- 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. \_\_\_\_\_\_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. 445.0 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 X\_\_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. <u>Yes X</u> 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 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. \_\_\_\_\_\_ (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 \_\_\_\_\_

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- D. Proximity of wells and contaminant plume
  - 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 wall 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

t has been approved

has been denied

#### VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:148-6.3(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 NJA.C. 7:14B-8 and 9.1 am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

·· NAME (Print or Type) Dinkerrai M. Desai	SIGNATURE A C. 82
COMPANY NAME U.S. Army, Fort Monmouth (Preparer of Site Assessment Place	DATE 11/1/95
CERTIFYING ORGANIZATION NJDEP	CERTIFICATION NUMBER NUMBER

-4

UST-014 2/91

# VIII. <u>TANK DECOMMISSIONING CERTIFICATION</u> [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 NJA.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)	SIGNATURE	
· · · · · · · · · · · · · · · · · · ·		·····
COMPANY NAME	DATE	
(Performer of Ti	ank Decommissioning)	:

#### X. 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 informatic 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 TIMES Off
COMPANY NAME U.S. Army, Fort Monmouth	DATE 2/14/96

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, and complete information, including fines and/or imprisonment."

NAME (Print or Type)	SIGNATURE	·
COMPANY NAME	DATE	<b></b> .

#### GENERATOR CERTIFICATION

I hereby certify that the waste described on Hazardous Waste Manifest No.  $\underline{AJA'I663246}$  dated  $\underline{V/-21-9V}$ , 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: Dil 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 as duly authorized to sign said certification.

Generato	r. LPSA	my Commus	ice dioxis	Electromics C	smarry 2	
Generato	rts EPA	ID No. ATT	210020	57'7		
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Form 003 5/91

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# **APPENDIX B**

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# WASTE MANIFEST

Please	*partment of Er Hazardous CN 421 type or print in block letters, (Form designed for use on elite (1	State of New Jersey Invironmental Protection Waste Regulation Prog Manifest Section , Trenton, NJ 08625-042 2-pitch) typewriter.)	- ar ier gräi 21	rgy Form	Anorouged OM	1 No. 2050 00	20 5						
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3.	Generator's Name and Mailing Address US Army. Commu	mications Electro	nics Co	ma'n'	a Manifest Doci	ment Numb	er						
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Fc	ort Monmouth, NJ 07703		l	B Stat	e Generator s I	D-(Gen. Site	Address)						
	Generator's Phone ( 908 · ) 532-6223			Ma	in Post	<u>Et. w</u>	ionmo						
)   ) <sup>5.</sup>	Transporter 1 Company Name	6. US EPA ID Number		C. Sa:	e Trans. ID-NJE	EPE -	522						
Ę	reehold Cartage, Inc.	NIJD054126	164		Decal N	10	<u>م</u>						
	Transporter 2 Company Rame		!	D. 1:11	ispurier's Phone	<u>(908)</u>	<u>462–100</u>						
	Desunated Facility Name and Site Address	10 US FPA ID Number		E. Stat	e Irans. ID-NJU		<u> </u>						
Т.;	ionetti Oil Recovery co Inc.		ł	5 7 122	Decal r		!!						
	heesequake & Runvor Rds.		ł	G Str	e Facility's ID	<u>,                                     </u>	·						
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	classified, packed, marked, and labeled, and are in all respects	s in proper condition for transpo	ort by highwa	ay acco	rding to applica	ble internatio	ng name and na						
	government regulations.	n -te co to reduce the volume en	d toulable of u		normand to the d		data amina d						
	economically practicable and that I have selected the practicable	method of treatment, storage, or	disposal curr	ently av	ailable to me wh	ich minimize	s the preser						
	future threat to human health and the environment: OR, if I am as the best waste management method that is available to me and	small quantity generator, I have a that I can afford.	nade a good i	laith effo	ort to minimize m	ly waste gen	eration and s						
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	3. Generator's Name and Mailing Address US		nications	Electron	ics Co	nfin S'il's	Manifest	Document	Number					
	c/o James Shirghio, Bldg 2	504, ATTN:	SELFM-DL-			NJA	16	0324						
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	J. Additional Descriptions for Materials Listed A	bove				K. Han	dling Code	s for Wast	es Listed Abo					
1	T,L Petroleum 10%													
	a Water 30 /6	c		<u>.</u>	1 204=Filtrationc.									
ł	T, Fertrolean 1020.	d				b.To	1- Fil	frehow	·I					
	D.     D.     I       15. Special Handling Instructions and Additional Information													
1	NOT REGULATED BY EPA. REGULATED AS HAZARDOUS WASTE IN NJ <b>~} BUS 33 - / CL</b> 24 HOUR EMERGENCY# 201-427-2881													
	NJ DECAL# $55462$ 6 81532-168													
	16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name a classified packed marked, and labeled, and are in all respects in proper condition for transport by biohyay according to applicable international and n													
Į	government regulations.	ut I have a program in	niace to reduce th	he volume and	toxicity of	Waste den	erated to t	he dearee	l have determ					
	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 economically practicable and that I have selected the practicable method of treatment, storaca-or disposal currently available to me which minimizes the present for the degree to the degree I have determined to the de													
	the best waste management method that is a	available to me and t	hat I can allord.	_ V [		~	/		Manth D					
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#### CALCULATION SHEET

Building No. 1/0¢	NJDEPE Reg. No. 0081533 - 166
Tank Size <u>/000</u> gal	Tank Void 7.5 tons

#### CLEAN\_FILL

ITEM NO.

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TICKET # /*8982*\_

TOTAL

STONE

ITEM NO.

DESCRIPTION

QUANTITY

TICKET #

TOTAL

ID#27 soil to stockpile (7.5 + %) - 7.5 = %tons Chargeable clean fill Ø Chargeable stone

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FEB-21-95 TUE 12:10 C. U. T. T. FAX NO. 201 4° 3050 P. 06 18982 1453 W. Park Ave., Wayaide Asbury Park, N.J. 07712 908-493-3333 d & Grevel Co Sta Pana S Feb 1 8 1 95 Order Date Name **Deliver** Date C.O.D. Address Delivered F.O.B./P.U. Charge 14 Quantity / Measure (tons, lbs., yds., ea.) Unit Total Item(s) Price 68250 21.63 tom 25000 3250 U ł Sub Total Driver Delivery Received. \* Company not responsible for damage off public roads, Color not guaranteed! N.J. Tax Have gravel will Total since 1925 Bldg 1106 7.5 tras Bldg 616 14.13 tons

# APPENDIX C

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# UST DISPOSAL CERTIFICATE

**RECLAMATION CENTER** STOTINTC. LLS, NJ 🕸 👘 FACILITY ID NOI 1336F1SP01 MAILING LOUD ASBURY AVE ADDRESS NEPTUNE, NJ 07753 RECEIPT DOCUMENT NUMBER tion -新一般的 01413600 MARP508937 TARE WEIGHT 18.1000 (- 36200 GROSS WEIGHT MARPAL COMPANY PO BOX 188 . . . . . 47 B 17 19 LINCROFT NJ. 07738 10/24/94 JJJ 09:21 2065ZZ XX77PH 09:38 SELOAIL (16 Bulky Waste MONMOUTH COUNTY 2.3900 13 Tonst 《验9**5**》70 - 643 EATONTOWN BOROUGH repayment: Balance DOCUMENT HANSPOHTER'S TOTAL 10.5 CUSTOMER COPY 51. 2 60 4 1,000 GAL FIBERGLASS TANK FROM ROG 1104 3,000 GAL FIBERGLASS TANK FROM BLDG 290 4,000 GAL FIBERGLASS TANK FROM BLDG 166

# APPENDIX D

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# SOIL ANALYTICAL DATA PACKAGE

Report of Analysis

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

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

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Lab. ID #: 1646.1-.8 Sample Rec'd: 09/21/94 Analysis Start: 09/23/94 Analysis Comp: 09/23/94

NJDEPE UST Reg.#: 0081533-166
Closure <b>#: C93-3564</b>
DICAR #:
Location #: Bldg. 1106

Lab ID.	Description	%Solid	Result (mg/K	MDL (g)
1646.1	Site A, Sidewall SE OVA= ND	84	31.8	6.6
1646.2	Site B, Sidewall W OVA= ND	85	36.7	6.6
1646.3	Site C, Sidewall NE OVA= ND	88	276.	6.6
1646.4	Site D, Sidewall NW OVA= ND	84	445.	6.6
1646.5	Site E, Sidewall E OVA= ND	85	36.7	6.6
1646.6	Site F, Sidewall SW OVA= ND	82	27.1	6.6
1646.7	Site G, DUP	83	32.2	6.6
1646.8	Site H, feedline	89	30.0	6.6
·				
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
 \* = Silica Gel Added, NA = Not Applicable
1646.6dup= 80% 1646.6s= 84% 1646.6sd= 82% RPD= 2.4%
Cal Chk = 97%

Brian K. McKee Laboratory Director

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

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

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Lab. ID #: 1646.1-.8 Sample Rec'd: 09/21/94 Analysis Start: 09/23/94 Analysis Comp: 09/23/94

Analysis: Munsel

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Lab ID#	Soil Color
1646.1	10YR 3/2 Very Dark Grayish Brown
1646.2	10YR 3/3 Dark Brown
1646.3	10YR 4/3 Brown
1646.4	10YR 3/1 Very Dark Grayish Brown
1646.5	10YR 3/2 Very Dark Grayish Brown
1646.6	10YR 3/2 Very Dark Grayish Brown
1646.7	10YR 3/4 Dark Yellowish Brown
1646.8	10YR 3/6 Dark Yellowish Brown
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Brian K. McKee Laboratory Director

# U.S. ARMY FORT MONMOUTH

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81.5 JZIM 163 242AV Method Blank Blog 1106 041 1646.1 8MV 164612 94V 1646.3 56MV ---- 1646.4 8541 1646.5 9Mr 1646.6 T.MV 0.0.00-000 1646.6 64V Dup. 1646.6 904V Spk. 1646.6 88.HV Dup. Spk. 1646.8 841 40.75 Cal Check 63.41 1641.1 dil 7 135 MV 1647.2 dil 7 98.41 1647.3 dill3 1624V - Method Black Bldg, 618 -1648.1 dil7 102.41V 1648.2 42MK יתוותכם 1648.3 34MV 1648.4 dil 7 1540 1648.5 5M/ - 1648.6 841 40.75 Cal Check 65.41

PHC Conformance/Non-conformance Summary Report

<u>No Yes</u>

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.

Project #1646

Brian K. McKee

Laboratory Manager