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UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT  
FORMER BUILDING 8005 WAYSIDE AREA NWS EARLE NJ  
7/1/1995  
SMITH ENVIRONMENTAL TECHNOLOGIES CORPORATION

late copy

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

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

*Former Building 8005  
Wayside Area*

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**NJDEP UST Registration No. 0192477-2  
NJDEP Closure Approval No. C-92-2952**

July 1995

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Carl King

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

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

***Former Building 8005  
Wayside Area***

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**NJDEP UST Registration No. 0192477-2  
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July 1995

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

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

**FORMER BUILDING 8005**

**WAYSIDE AREA  
NJDEP UST REGISTRATION NO. 0192477-2  
NJDEP CLOSURE APPROVAL NO. C-92-2952**

**JULY 1995**

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

**BCM ENGINEERS/  
SMITH ENVIRONMENTAL TECHNOLOGIES CORPORATION  
BROMLEY CORPORATION  
THREE TERRI LANE  
BURLINGTON, NEW JERSEY 08016**

8005.DOC





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## EXECUTIVE SUMMARY

### UST Closure

On July 8, 1993, the former location of a steel underground storage tank (UST) was excavated for the purpose of closing the UST in accordance with Closure Approval No. C-92-2952 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 0192477-2, was believed to have been located immediately adjacent to former Building 8005 (now only a concrete foundation) in the Wayside area of U.S. Army, Fort Monmouth. Upon excavation, no UST was found. It was then believed that the UST must have been removed after former Building 8005 was struck by lightning and burned to the ground. UST No. 0192477-2 was registered as a steel 550-gallon No. 2 fuel oil UST. The UST fill port was located directly above the tank. The soil excavation at the former UST location was performed by All Service Environmental Inc.

### 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 excavated from the former location of the UST, were screened visually and with air monitoring instruments for evidence of contamination. A five-point composite was collected from the excavated soil pile on July 8, 1993, and was analyzed for total petroleum hydrocarbons (TPHC).

On July 9, 1993, soils surrounding the former location of the tank were screened visually and with air monitoring instruments for evidence of contamination. An oil-like odor was noted coming from the excavation and approximately four (4) cubic yards of potentially contaminated soils were removed.

On July 13, 1993, following removal of approximately 25 cubic yards of potentially contaminated soils, post-excavation soil samples A, B, C, D, E, F, and DUP F were collected from a total of six (6) locations along the base and sidewalls of the expanded portions of the excavation. These samples were analyzed for TPHC.

On July 15, 1993, following removal of approximately 6 cubic yards of potentially contaminated soils, post-excavation soil samples G, H, I, and DUP I were collected from a total of three (3) locations along the western base and sidewalls of the expanded portions of the excavation. These samples were analyzed for TPHC.

### Findings

All post-excavation soil samples collected from the excavation at former Building 8005 contained either non-detectable concentrations of TPHC or 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).

#### 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 the 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. 0192477-2 at former Building 8005.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 0192477-2, was closed at Building 8005 at U.S. Army Fort Monmouth, New Jersey on July 8, 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 August 5, 1992. The plan was approved on September 14, 1992 and assigned TMS No. C-92-2952. The UST was a steel, 550-gallon tank containing No. 2 fuel oil.

Decommissioning activities of UST No. 0192477-2 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. All Service Environmental Inc., the contractor that conducted the decommissioning activities, is registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 0192477-2 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. 0192477-2 are included in Appendices A and B, respectively.

Based on field screening of subsurface soils and analytical results of collected soil samples, the DPW has concluded that no 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

Former Building 8005, now only a concrete foundation, was located in the northern portion of the Wayside area of Fort Monmouth as shown on Figure 1. Building 8005 was a boiler plant for Military Housing Facility at the base. UST No. 0192477-2 was located north of former Building 8005. A site map is provided on Figure 2. The UST's appurtenant piping ran less than 15 feet to a fill port area.

### 1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding former Building 8005. 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 Wayside area.

#### Regional Geology

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

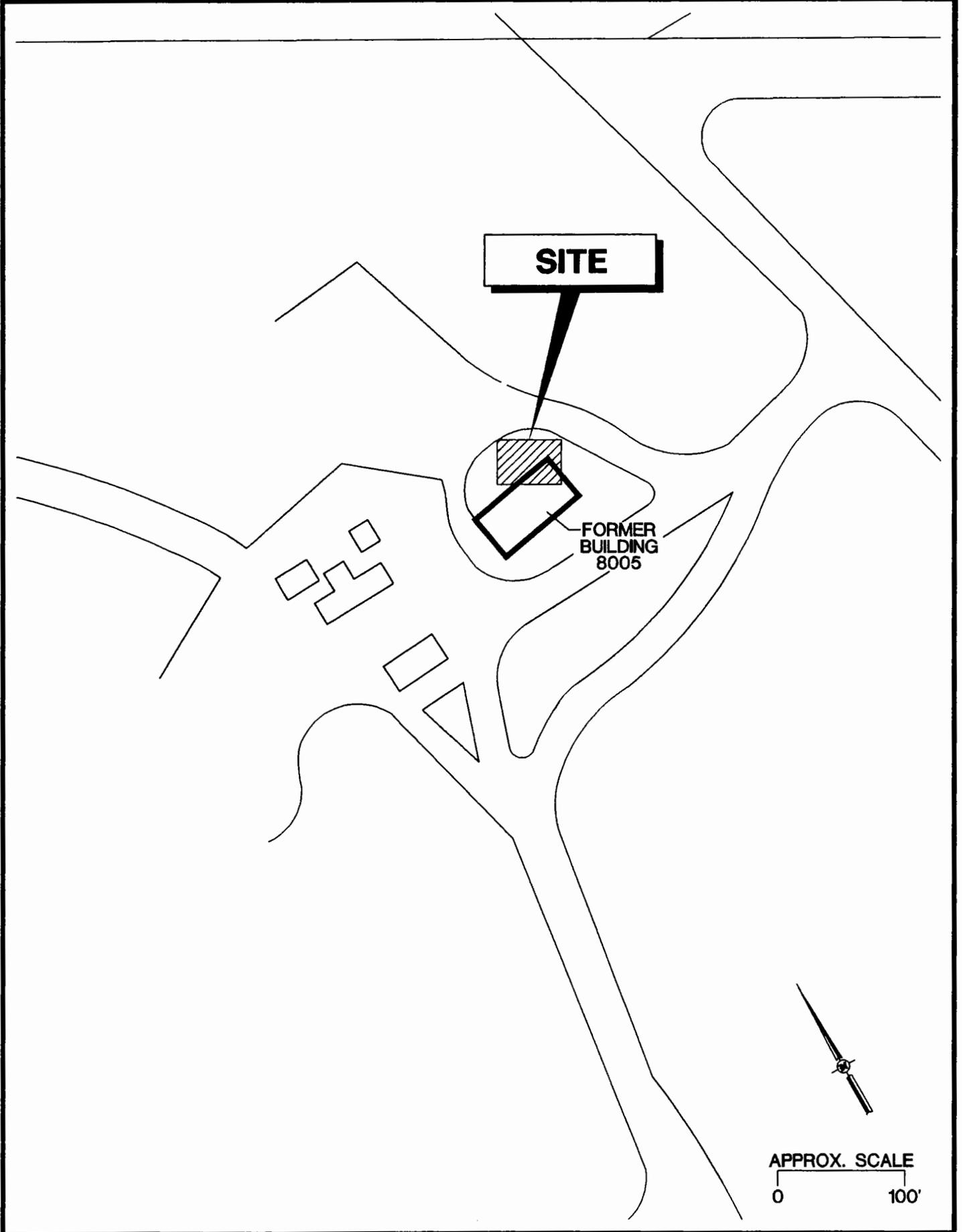
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka, 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 Tertiary age Vincentown and Kirkwood Formations outcrop at the Wayside area. The Vincentown Formation lies unconformably over the Hornerstown Sand and dips to the southeast at 27 feet per mile. The upper member of the Vincentown Formation ranges from a fine to medium grained quartz sand to

Source: BCM/Smith Environmental Technologies Corporation (020)



Project No. 09-5004-01

Figure 2  
**Former Building 8005  
Site Map**

09-5004-01



a sandy, clayey, limestone. The sand in this member is similar to coquina by its micaceous, glauconitic, calcareous, and fossiliferous attributes.

The Kirkwood Formation unconformably overlies the Vincentown Formation and dips to the southeast at a rate of 20 feet per mile. The lower unit of the Kirkwood Formation appears to be primarily brown silt in Monmouth County (Jablonski). The upper unit is fine yellowish-brown or light gray quartz sand containing layers of clay.

### Hydrogeology

The water table aquifer at the Wayside 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.

The Kirkwood Formation has been described by Jablonski to consist of alternating layers of sand and clay that are chiefly discontinuous. Development of the aquifer in the Kirkwood Formation has been limited. Only a small percentage of the county is underlain by an aquifer thickness of 30 feet or more.

According to Jablonski, those wells that tap this aquifer may produce from 5 to 1,236 gallons per minute (gpm). Some well owners have reported water that requires treatment to remove iron. The water has also been reported to contain noticeable amounts of hydrogen sulfide gas, but this can be removed easily by aeration.

Shallow groundwater is locally influenced within the Wayside 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 Wayside area
- presence of clay and silt lenses in the natural overburden deposits
- local groundwater recharge areas (i.e., streams, lakes)

Due to the fluvial nature of the overburden deposits (i.e., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis.

## **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 SOIL EXCAVATION PROCEDURES**

### **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.

## **1.5 MANAGEMENT OF EXCAVATED SOILS**

Based on OVA air monitoring and visual observations, approximately 35 cubic yards of potentially contaminated soils were excavated from the area surrounding the previous location of UST No. 0192477-2. The soils were stockpiled separately from other excavated materials, and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to a concrete pad located near Building 8005 for storage prior to ultimate disposal at Soil Remediation of Philadelphia. All soils free of evidence of contamination were backfilled into the excavation following removal of the UST.

### 2.3 SOIL SAMPLING

On July 8, 1993, the former UST location was excavated, but no UST was found. A five-point composite was collected from the excavated soil stockpile and labeled as "soil pile." The sample was analyzed for total petroleum hydrocarbons (TPHC). Due to a noted oil-like odor from the excavation, approximately four cubic yards of potentially contaminated soils were removed on July 9, 1993.

On July 13, 1993, because the five-point composite had a TPHC concentration of 1,050 mg/kg, approximately 25 cubic yards of potentially contaminated soils were excavated. Post-excavation soil samples A, B, C, D, E, F, and DUP F then were collected from a total of six (6) locations along the base and sidewalls of the expanded portions of the excavation, and were analyzed for TPHC. Refer to soil sampling location map on Figure 3.

On July 15, 1993, approximately 6 cubic yards of potentially contaminated soils from the western portion of the excavation. Post-excavation soil samples G, H, I, and DUP I were then collected from a total of three (3) locations along the base and sidewalls of the expanded portions of the excavation, and were analyzed for TPHC. 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 samples were collected using decontaminated stainless steel 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.

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES  
 BUILDING 8005, WAYSIDE  
 FORT MONMOUTH, NEW JERSEY

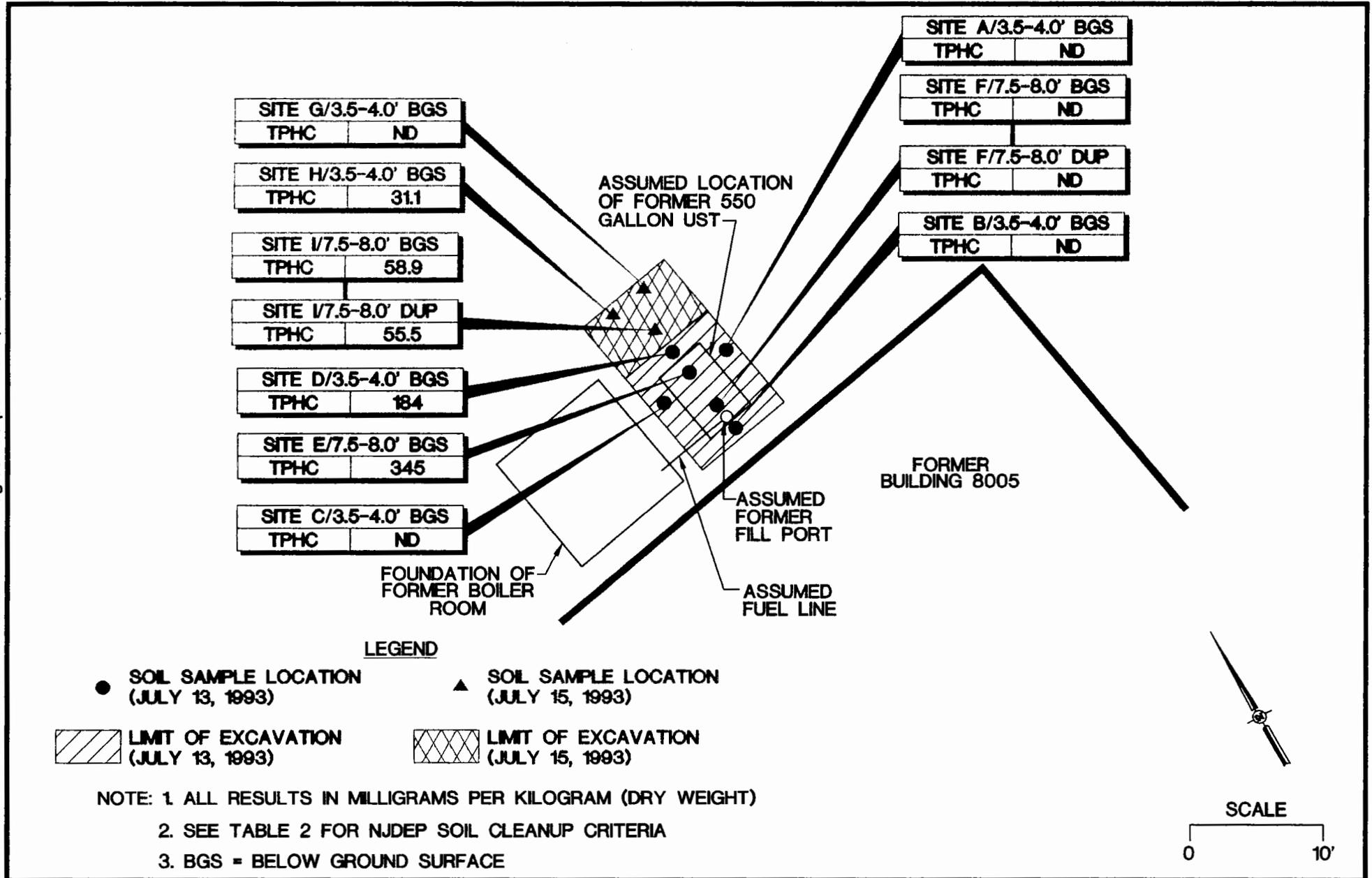
Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters (and USEPA Methods)**	Sampling Method
Soil Pile*	7/08/93	7/09/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
A	7/13/93	7/14/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
B	7/13/93	7/14/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
C	7/13/93	7/14/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
D	7/13/93	7/14/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
E	7/13/93	7/14/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
F	7/13/93	7/14/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
DUP F	7/13/93	7/14/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
G	7/15/93	7/16/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
H	7/15/93	7/16/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
I	7/15/93	7/16/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
DUP I	7/15/93	7/16/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop

Note:

\* 5 point composite

\*\* TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)

Source: BCM/Smith Environmental Technologies Corporation (021)





### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions at the former UST location, post-excavation soil samples were collected from a total of six (6) locations on July 13, 1993, and from a total of three (3) locations on July 15, 1993. All of these 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 soil analytical data package is provided in Appendix C. The full data package, including associated quality control data, is on file at the U.S. Army Fort Monmouth, DPW.

The five-point composite collected from the soil stockpile on July 8, 1993, has a TPHC concentration of 1,050 milligrams per kilogram (mg/kg).

All post-excavation soil samples collected from the former UST locations at former Building 8005 contained TPHC concentrations that were either non-detectable or below the NJDEP Soil Cleanup Criteria. The samples collected on July 13, 1993 (A, B, C, D, E, F, and G) contained TPHC concentrations ranging from non-detectable to 345 mg/kg. The samples collected on July 15, 1993, from the expanded excavation (G, H, I, and DUP I) contained from non-detectable to 58.9 mg/kg.

#### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the excavation at former Building 8005 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.

No further action is proposed in regard to the closure and site assessment of the assumed location of former UST No. 0192477-2 at former Building 8005.

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 8005, WAYSIDE AREA  
 FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 2

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/3.5-4.0'	1241.1	7-13-93	7-14-93	Total Solid	--	--	98%	--	--
				TPHC	3.3	yes	ND	10,000	--
B/3.5-4.0'	1241.2	7-13-93	7-14-93	Total Solid	--	--	91%	--	--
				TPHC	3.3	yes	ND	10,000	--
C/3.5-4.0'	1241.3	7-13-93	7-14-93	Total Solid	--	--	86%	--	--
				TPHC	3.3	yes	ND	10,000	--
D/3.5-4.0'	1241.4	7-13-93	7-14-93	Total Solid	--	--	96%	--	--
				TPHC	3.3	yes	184.0	10,000	--
E/7.5-8.0'	1241.5	7-13-93	7-14-93	Total Solid	--	--	96%	--	--
				TPHC	3.3	yes	345.0	10,000	--
F/7.5-8.0'	1241.6	7-13-93	7-14-93	Total Solid	--	--	96.0	--	--
				TPHC	3.3	yes	ND	10,000	--
DUP F/7.5-8.0'	1241.7	7-13-93	7-14-93	Total Solid	--	--	95%	--	--
				TPHC	3.3	yes	ND	10,000	--
G/3.5-4.0'	1245.1	7-15-93	7-16-93	Total Solid	--	--	92%	--	--
				TPHC	3.3	yes	ND	10,000	--

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 8005, WAYSIDE AREA  
 FT. MONMOUTH, NEW JERSEY

PAGE 2 OF 2

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
H/3.5-4.0'	1245.2	7-15-93	7-16-93	Total Solid	--	--	87%	--	--
				TPHC	3.3	yes	31.4	10,000	--
I/7.5-8.0'	1245.3	7-15-93	7-16-93	Total Solid	--	--	88%	--	--
				TPHC	3.3	yes	58.9	10,000	--
DUP I/7.5-8.0'	1245.4	7-15-93	7-16-93	Total Solid	--	--	86%	--	--
				TPHC	3.3	yes	55.5	10,000	--
Soil Pile***	1237.7	7-08-93	7-09-93	Total Solid	--	--	89%	--	--
				TPHC	13.0	yes	1050.0	10,000	--

Note:

- \* Unless noted otherwise
- \*\* NJDEP Residential Direct Contact soil cleanup criteria for total organics
- \*\*\* 5 point composite
- Not applicable / does not exceed criteria
- TPHC Total Petroleum Hydrocarbons

BCM Engineers Inc. ( BCM Project No. 09-5004-01)

soil8005.doc

**SMITH**

**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

*Bldg. 8005*

TMS # C-92-2952

UST # 0192477 - 2

US Army Fort Monmouth  
DEH Bldg. 167  
Ft. Monmouth, NJ 07703  
  
(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: One 550 gallon #2 fuel oil (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: Dinkerrai Desai

908-532-1475  
TELEPHONE:

OWNER:

TELEPHONE:

EFFECTIVE DATE: September 14, 1992

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

*Michael S Kelly (for)*  
KEVIN F. KRATINA, ACTING BUREAU CHIEF  
BUREAU OF UNDERGROUND STORAGE TANKS

**SMITH**

**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.

Date of Submission 26 JUL 1995

Building 8005

00192477-2  
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-92-2952

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. 345.0 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

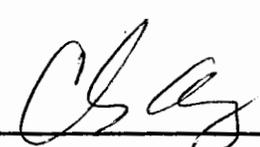
G. Delineation of contamination

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-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 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) ALL SERVICE ENVIRONMENTAL, INC. SIGNATURE [Signature]  
523 Route 303  
COMPANY NAME Orangeburg, NY 10962 DATE 9-30-93  
(Performer of Tank Decommissioning)

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

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

**SMITH**

**APPENDIX C**  
**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 #: 1237.7  
 Sample Rec'd: 07/08/93  
 Analysis Start: 07/09/93  
 Analysis Comp: 07/09/93

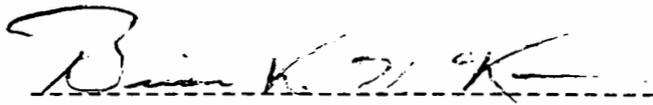
Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard

NJDEPE UST Reg.#: 00192477-2  
 TMS #: C-92-2452  
 NJDEPE Case #:  
 Location #: 8005

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1237.7	Soil pile (5 point composite) #	89	1050.	13.
M. Bl.	METHOD BLANK	100	ND	3.3

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

Batch Dup = 99% Batch Spike = 97% recovery



Brian K. McKee  
 Laboratory Director



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 #: 1241.1-.7  
 Sample Rec'd: 07/13/93  
 Analysis Start: 07/14/93  
 Analysis Comp: 07/14/93

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

NJDEPE UST Reg.#: 00192477-2  
 TMS #: C-92-2952  
 NJDEPE Case #:  
 Location #: 8005

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1241.1	Site A, N wall #	98	ND	3.3
1241.2	Site B, E wall #	91	ND	3.3
1241.3	Site C, S wall #	86	ND	3.3
1241.4	Site D, W wall #	96	184.	3.3
1241.5	Site E, W pit bottom #	96	345.	3.3
1241.6	Site F, E pit bottom #	96	ND	3.3
1241.7	Site G, dup of "E" #	95	ND	3.3
M. Bl.	METHOD BLANK	100	ND	3.3

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

1241.7Dup = 100%; 1241.7 spike = 118%; Spike Dup. = 99%

*Sarah J. Hubbard* (ACTING FOR)  
 Brian K. McKee  
 Laboratory Director

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

Chain of Custody

Project #:	Sampler: <i>Charles Appleby</i>	Date / Time: <i>7/13/93</i>	Analysis Parameters	Start:
Customer: <i>DEH C. APPLEBY</i>	Site Name: <i>Bldg. 8005- UST#-00170477-2 C-92-2952</i>			Finish:
Phone: <i>X-26254</i>	<i>UST SITE ASSESSMENT</i>			Preservation Method

Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TAP/C	HNU	Remarks
<i>1241.1</i>	<i>7/13/93 10:55</i>	<i>Site A N Wall</i>	<i>Seal</i>	<i>1</i>	<i>X</i>	<i>ND</i>	
	<i>10:56</i>	<i>B E Wall</i>	<i>↓</i>	<i>1</i>	<i>X</i>	<i>ND</i>	
	<i>10:57</i>	<i>C S Wall</i>	<i>↓</i>	<i>1</i>	<i>X</i>	<i>ND</i>	
	<i>10:58</i>	<i>D W Wall</i>	<i>↓</i>	<i>1</i>	<i>X</i>	<i>ND</i>	
	<i>10:59</i>	<i>E W Pit Bottom</i>	<i>↓</i>	<i>1</i>	<i>X</i>	<i>ND</i>	
	<i>11:00</i>	<i>F E Pit Bottom</i>	<i>↓</i>	<i>1</i>	<i>X</i>	<i>ND</i>	
<i>.7</i>	<i>11:01</i>	<i>G - Duplicate of 'E'</i>	<i>↓</i>	<i>1</i>	<i>X</i>	<i>ND</i>	
							<i>HNU-SN-27036-HL</i>
							<i>Cal. w/ SS per SPAN 675</i>
							<i>to a span of 8.8</i>
							<i>at 10:45 AM</i>

Relinquished By (signature): <i>[Signature]</i>	Date / Time: <i>7/13/93 1315</i>	Received By (signature): <i>[Signature]</i>	Shipped By:
Relinquished By (signature): <i>[Signature]</i>	Date / Time: <i>7/13/93 1315</i>	Received for Lab by (signature): <i>B. McK</i>	Date / Time: <i>7-13 1315</i>

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

July 14, 1993 Wednesday  
0945  
Sarah J. Hullard

Blank 0 MV

33.75 (78 MV)

67.5 (185 MV)

135 (343 MV)

Method Blank - ND

1241.1 ND

1241.2 ND

1241.3 ND

1241.4 (136 MV)

1241.5 (255 MV)

1241.6 ND

1241.7 ND

1241.7 Dup

1241.7 Spk (240 MV)

1241.7 Dup Spk (242 MV)

PHC ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

No. Yes

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

\_\_\_\_\_

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

\_\_\_\_\_

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

4. Chromatograms submitted for all standards, blanks, & 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: \_\_\_\_\_

\_\_\_\_\_

Additional Comments: \_\_\_\_\_

\_\_\_\_\_

Laboratory Manager: Arnell J. Hubbard (acting) Date: 7/14/93

## 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.

*Sarah J. Hubbard (acting for)*  
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 #: 1245.1-.4  
 Sample Rec'd: 07/15/93  
 Analysis Start: 07/16/93  
 Analysis Comp: 07/16/93

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

NJDEPE UST Reg.#: 00192477-2  
 TMS #: C-92-2952  
 NJDEPE Case #:  
 Location #: Bldg. # 8005

Site Remediation

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1245.1	Site G, NW. SIDE WALL hNu = ND	92	ND	3.3
1245.2	Site H, SW. SIDE WALL hNu = ND	87	31.4	3.3
1245.3	Site I, W.PIT BOTTOM hNu = ND	88	58.9	3.3
1245.4	Site J, DUP OF I hNu = ND	86	55.5	3.3
M. Bl.	METHOD BLANK	100	ND	3.3

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

Batch Dup = 95%: Batch Spike = 90% Batch Spike Dup. = 98%



Brian K. McKee  
 Laboratory Director