

United States Army

Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

***Building 601
Main Post***

**NJDEP UST Registration No. 081533-84
NJDEP Closure Approval Letter Dated June 10, 1994
Spill Case No. 94-8-18-1613-35**

February 1997

SMITH
TECHNOLOGY CORPORATION

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

BUILDING 601

MAIN POST

**NJDEP UST REGISTRATION NO. 081533-84
NJDEP CLOSURE APPROVAL LETTER DATED JUNE 10, 1994
SPILL CASE NO. 94-8-18-1613-35**

FEBRUARY 1997

**PROJECT NO.: 09-5004-08
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:

**SMITH TECHNOLOGY CORPORATION
BROMLEY CORPORATE CENTER
THREE TERRI LANE
BURLINGTON, NEW JERSEY 08016**

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EXECUTIVE SUMMARY

UST Closure

On August 16, 1994, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated June 10, 1994 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-84, was located immediately adjacent to Building 601 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-84 was a 1,000-gallon No. 2 fuel 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) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. Holes were noted in the UST, however, no evidence of potentially contaminated soils was observed surrounding the tank.

On August 16, 1994, following the removal of the UST, post-excavation soil samples A, B, C, and D were collected from a total of four (4) locations along the sidewalls of the excavation, immediately above groundwater. The samples were collected at a depth of 5.0 feet below ground surface (bgs). Groundwater was present at approximately 5.5 feet bgs. Sample E was collected along the former piping length of the excavation, which was approximately 15 feet in length. The piping sample was collected at a depth of 0.5 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On August 18, 1994, due to elevated TPHC levels, the DPW had concluded that an historical discharge was associated with the UST and associated piping. A spill was reported to the NJDEP "Hotline" for UST No. 081533-84 and was assigned Spill Case No. 94-8-18-1613-35.

On August 26, 1994, due to elevated TPHC levels in the former piping trench, approximately 10 cubic yards of potentially contaminated soil was removed. The area in the vicinity of sample E was resampled at a depth of 1.0 feet bgs, following removal of soil. The sample was designated as E1, and was analyzed for TPHC.

Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 601 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). Samples A, B, C, and D, collected on August 16, 1994, contained levels of TPHC ranging in concentration from 42.7 mg/kg to 55.3. Sample E contained a TPHC concentration of 1,190.0 mg/kg. Sample E-1, collected on August 26, 1994, contained a TPHC concentration of 82.6 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.

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 for Site Remediation*.

Discrepancies

The removal contractor collected soil samples using polystyrene scoops instead of NJDEP approved stainless steel scoops. The results of the soil samples were therefore evaluated at 50% of the actual value to compensate for any potential loss due to absorbency of the polystyrene scoop.

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 exist 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. 081533-84 at Building 601.



1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

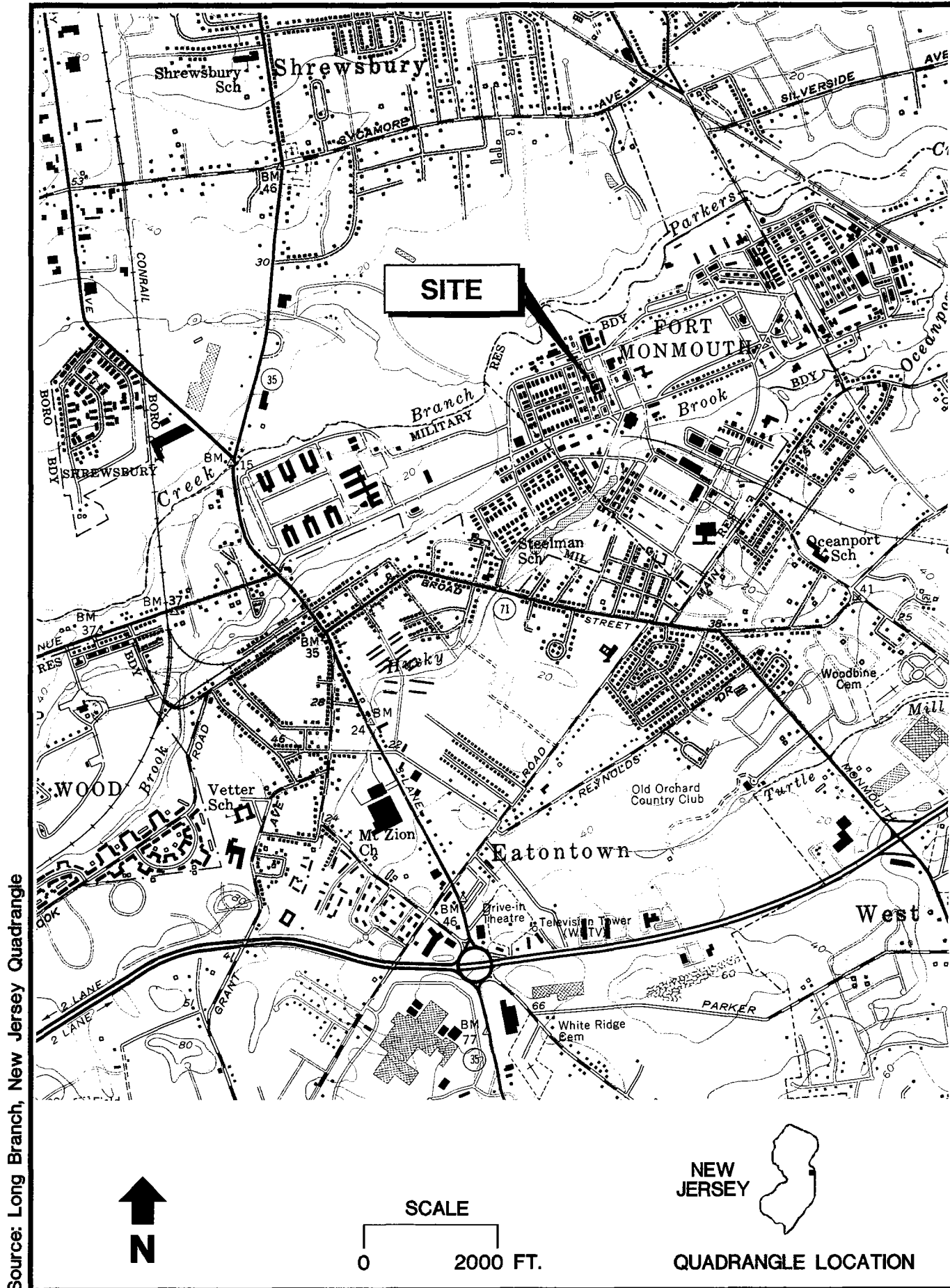
One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-84, was closed at Building 601 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on August 16, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on June 10, 1994. The plan was approved on July 5, 1994. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 081533-84 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. 081533-84 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 081533-84 are included in Appendices A and B, respectively.

Based on elevated TPHC levels, the DPW has concluded that an historical discharge was associated with the UST and associated piping. On August 18, 1994, a spill was reported to the NJDEP "Hotline" for UST No. 081533-84 and was assigned Spill Case No. 94-8-18-1613-35.

This UST Closure and Site Investigation Report has been prepared by Smith Technology Corporation. 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.



Source: Long Branch, New Jersey Quadrangle

Project No. 09-5004-08

Figure 1
Site Location Map
Building 601

1.2 SITE DESCRIPTION

Building 601 is located in the central portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 081533-84 was located south of Building 601 and appurtenant piping ran approximately 15 feet north from the excavation to Building 601. The fill port area was located directly above the tank. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 601. 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.

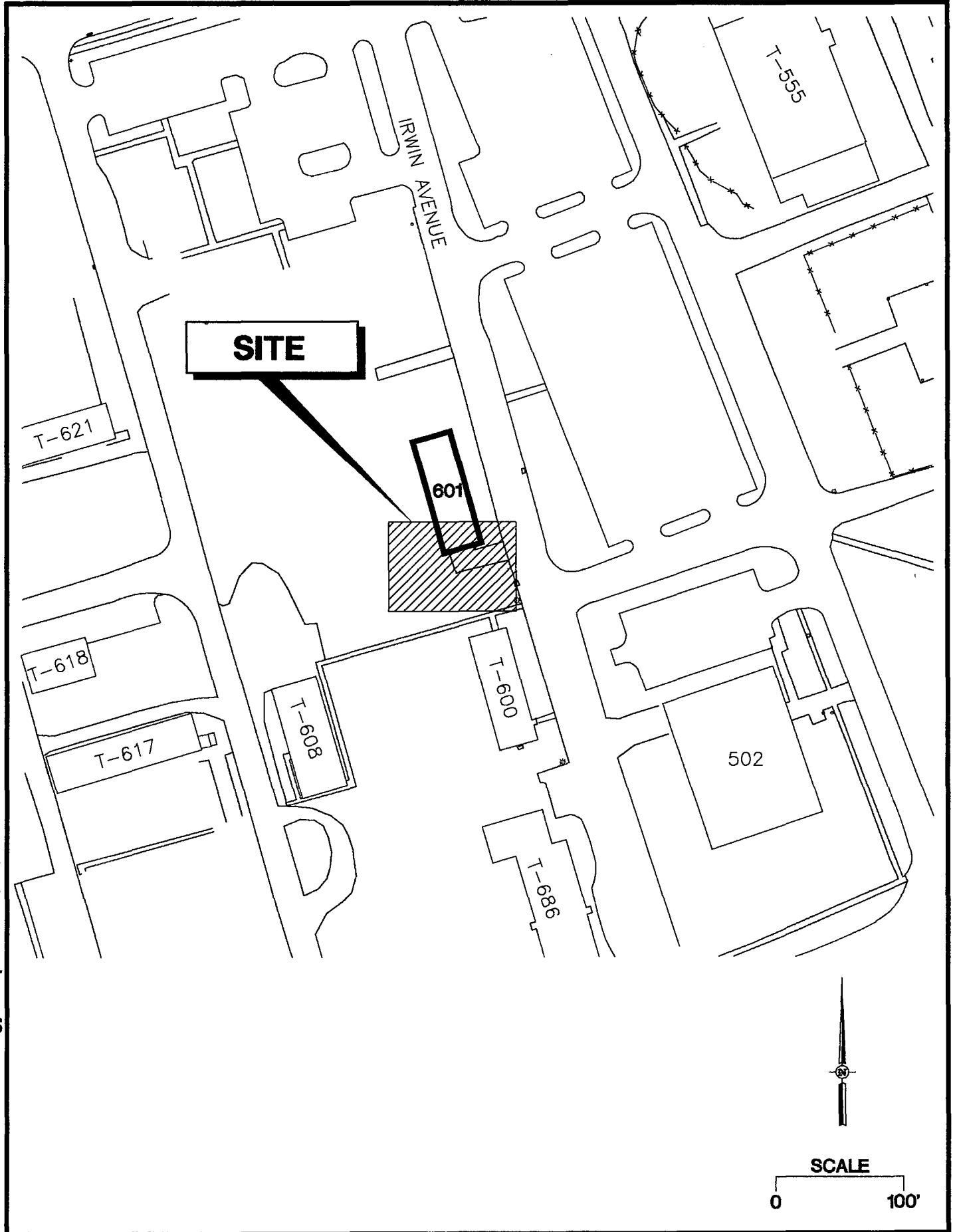
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka, 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

Source: Smith Technology Corporation (118)



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Figure 2
**Building 601
Site Map**

(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.

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 Site Assessment 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. The waste manifest for this UST was not available.

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. Holes were observed in the UST 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 observed.

Soil screening was also performed along the piping associated with the UST. 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 Mazza & Sons Inc. for disposal in compliance with all applicable regulations and laws. The UST Disposal Certificate was not available.

It is assumed the removal contractor 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

The UST was removed prior to photographic documentation by the Subsurface Evaluator.

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on elevated TPHC results, approximately 10 cubic yards of potentially contaminated soils were excavated from the piping portion of the excavation on August 26, 1994. 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 a hazardous storage area on Main Post prior to ultimate disposal at soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination 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)
Closure Supervisor: George Bernotsky
Phone Number: (201) 427-2881
NJDEP Certification No.: 3249
- Subsurface Evaluator: Charles Appleby
Employer: U.S. Army, Fort Monmouth
Phone Number: (908) 532-6224
NJDEP Certification No.: 2056
- 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: Unknown *
Contact Person: Unknown
Phone Number: Unknown
NJDEP Hazardous Waste Hauler No.: Unknown

* It is assumed by the Subsurface Evaluator that only a small quantity of tank bottom sludge was generated from the draining of the UST and that the waste was combined with wastes from other UST closures by the contractor. All such wastes were disposed of IAW the Fort Monmouth Hazardous Waste Management Plan. For this reason, no documentation of the waste materials are available for this specific site.

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 until no evidence of contamination remained.

2.3 SOIL SAMPLING

On August 16, 1994, following the removal of the UST, post-excavation soil samples A, B, C, and D were collected from a total of four (4) locations along the sidewalls of the excavation, immediately above groundwater. The samples were collected at a depth of 5.0 feet below ground surface (bgs). Groundwater was present at approximately 5.5 feet bgs. Sample E was collected along the former piping length of the excavation, which was approximately 15 feet in length. The piping sample was collected at a depth of 0.5 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On August 18, 1994, due to elevated TPHC levels, the DPW had concluded that an historical discharge was associated with the UST and associated piping. A spill was reported to the NJDEP "Hotline" for UST No. 081533-84 and was assigned Spill Case No. 94-8-18-1613-35.

On August 26, 1994, due to elevated TPHC levels in the former piping trench, approximately 10 cubic yards of potentially contaminated soil was removed. The area in the vicinity of sample E was resampled at a depth of 1.0 feet bgs, following removal of soil. The sample was designated as E1, and was analyzed for TPHC.

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 165.2 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.

TABLE 1
PAGE 1 OF 1

SUMMARY OF SAMPLING ACTIVITIES
BUILDING 601, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	8/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
B	8/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
C	8/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
D	8/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
E	8/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
E1	8/26/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop

* Note:

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

Smith Technology Corporation (Project No. 09-5004-08)

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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 five (5) locations on August 16, 1994, and from one (1) location on August 26, 1994. All samples were analyzed for TPHC. The post-excavation sampling 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 analytical data package is provided in Appendix C.

All post-excavation soil samples collected on August 16, 1994, and on August 26, 1994, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Post-excavation soil samples A, B, C, and D collected on August 16, 1994 contained levels of TPHC ranging in concentration from 42.7 mg/kg to 55.3 mg/kg. Sample E contained a TPHC concentration of 1,190.0 mg/kg. Post-excavation soil sample E1, collected on August 26, 1994, contained a TPHC concentration of 82.6 mg/kg.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 601 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

The existing discrepancy as listed in the Executive Summary is believed to be acceptable as explained and does not warrant further investigation or explanation. Procedures have been corrected to eliminate recurrences in the future.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-84 at Building 601.

TABLE 2
PAGE 1 OF 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 601
FT. MONMOUTH, NEW JERSEY

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/5.0-5.5'	1614.1	8/16/94	8/17/94	Total Solid	--	--	85 %	--	--
				TPHC	6.6	yes	43.8	10,000	--
B/5.0-5.5'	1614.2	8/16/94	8/17/94	Total Solid	--	--	87 %	--	--
				TPHC	6.6	yes	42.7	10,000	--
C/5.0-5.5'	1614.3	8/16/94	8/17/94	Total Solid	--	--	84 %	--	--
				TPHC	6.6	yes	55.3	10,000	--
D/5.0-5.5'	1614.4	8/16/94	8/17/94	Total Solid	--	--	86 %	--	--
				TPHC	6.6	yes	43.2	10,000	--
E/0.0-0.5'	1614.5	8/16/94	8/17/94	Total Solid	--	--	86 %	--	--
				TPHC	6.6	yes	1,190.0	10,000	--
E1/1.0-1.5'	1623.1	8/26/94	8/31/94	Total Solid	--	--	87 %	--	--
				TPHC	6.6	yes	82.6	10,000	--

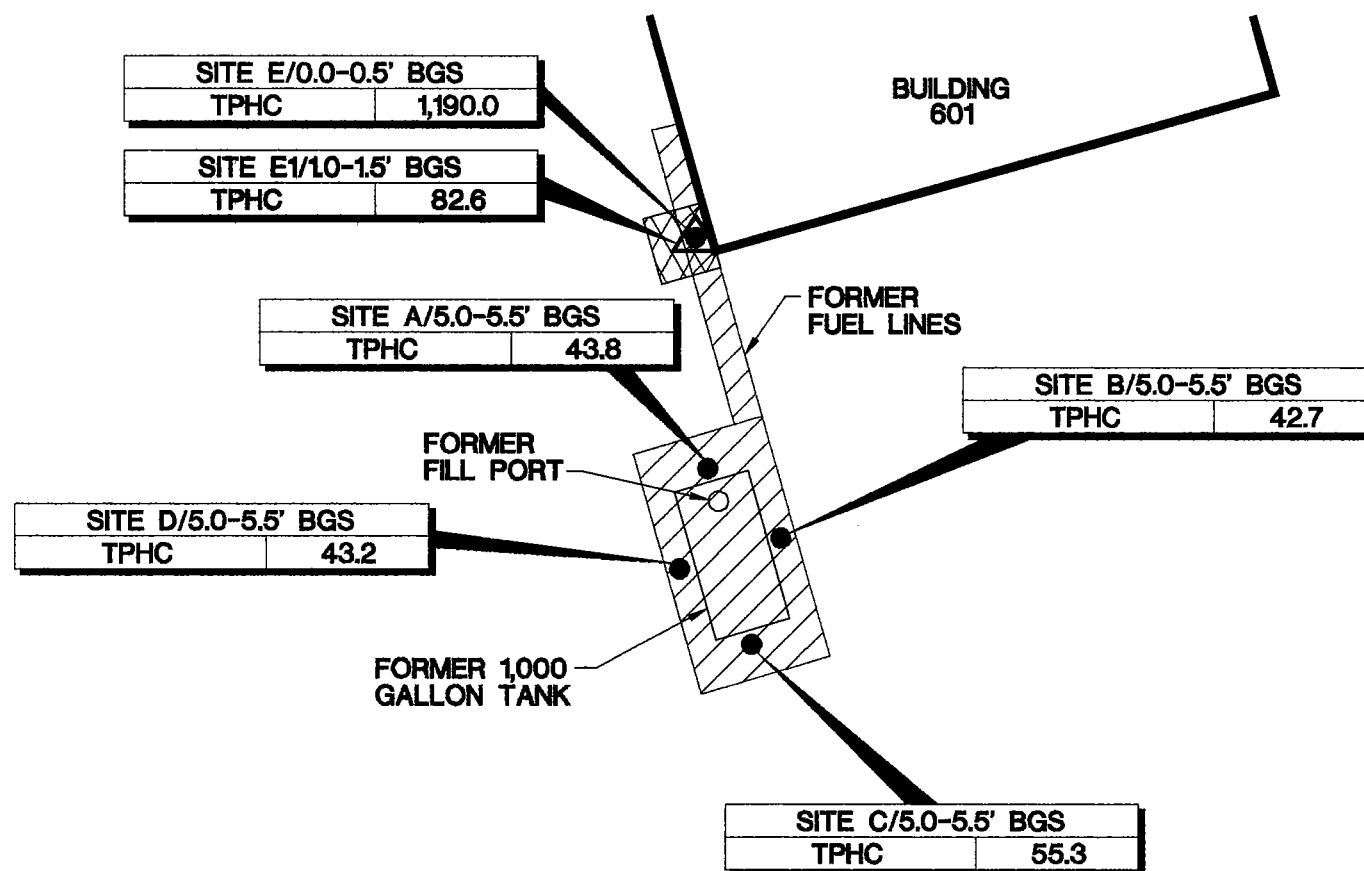
Notes:

* Cleanup criteria for total organics
 -- Not applicable / does not exceed criteria
 TPHC Total Petroleum Hydrocarbon

Actual soil TPHC values may be higher than reported due to absorbency by polystyrene scoops. If absorbency resulted in reducing the actual soil TPHC concentration by 50%, the highest soil contaminant would be 165.2 mg/kg.

Smith Technology Corporation (Project No. 09-5004-08)

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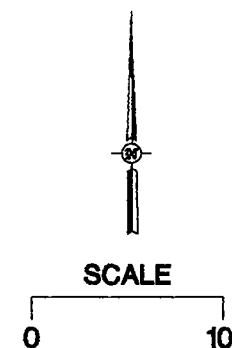
LEGEND

- SOIL SAMPLE LOCATION (AUGUST 16, 1994)
- △ SOIL SAMPLE LOCATION (AUGUST 26, 1994)

▨ LIMIT OF EXCAVATION (AUGUST 16, 1994)

▩ LIMIT OF EXCAVATION (AUGUST 26, 1994)

- NOTES: 1. ALL RESULTS IN MILLIGRAMS PER KILOGRAM (DRY WEIGHT)
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE



APPENDIX A
NJDEP BUST CLOSURE APPROVAL



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

CHRISTINE TODD WHITMAN
Governor

ROBERT C. SHINN, JR.
Commissioner

Mr. Joseph Fallon
SELF-M-EH-EV
Headquarters CECOM Fort Monmouth
Fort Monmouth, NJ 077703-5000

JUL 5 1994

Dear Mr. Fallon:

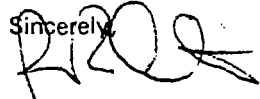
Re: UST Closure Approval Applications (#2)
Fort Monmouth, Monmouth County

I have reviewed the Underground Storage Tank (UST) Closure Approval Applications submitted on June 10, 1994 for the five registered tanks numbers 0090010-20; and 0081533-96, 101, 105, and 84. The applications are technically accurate and the NJDEPE approves the applications with the following required changes.

Since the reports are all drafted from the same shell document, the required changes noted here apply to all of these documents and future UST Closure Approval Applications.

1. "UNDERGROUND STORAGE TANK (UST) DECOMMISSIONING/CLOSURE PLAN" Section A. General Requirements: The laws listed should include the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E et seq.).
2. Same Section: THE NJDEPE, will be changing its name to NJDEP on 7/1/94. Documents which are named NJDEPE should remain so named, however references to the Department should be abbreviated NJDEP.
3. Section E. Excavated Soils Management: The NJDEPE has updated the document titled "Management of Excavated Soils". This updated version is dated May 14, 1993.
4. Section F. Changes/Authorizations: Prior authorization must be obtained from the Bureau of Federal Case Management (BFCM), not BUST.
5. "UNDERGROUND ... ASSESSMENT PLAN" General: See comment 1 and 4. Sentence should be modified to read "... and submitted to the NJDEPE-BFCM in accordance with N.J.A.C. 7:14B-9.2 and 9.3 and N.J.A.C. 7:26E et seq.
6. CERTIFICATION section, this paragraph should include a reference to compliance with the minimum requirements of the *Technical Regulations for Site Remediation*, N.J.A.C. 7:26E et seq.

If you should have any questions or require additional information, please do not hesitate to contact me at (609) 633-1455.

Sincerely,


Ian R. Curtis, Case Manager
Bureau of Federal Case Management

cc. Kevin Kratina, BUST
RPCEIBFCMFTMMTH14.IRC

APPENDIX B
CERTIFICATIONS

UST-014
2/91



FOR STATE USE ONLY

UST # _____
Date Rec'd. _____
TMS # _____
Staff _____

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028
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 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 _____

Bldg. 601

081533-84
FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

US Army Fort Monmouth, New Jersey
Directorate of Public Works, Bldg. 167
Fort Monmouth, NJ 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. 94-8-18-1613-35
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)
- B. The substance(s) discharged was(were) #2 fuel oil
- C. Have any vapor hazards been mitigated? ☐ Yes ☐ No ☒ N/A

III. DECOMMISSIONING OF TANK SYSTEMS

Letter dated July 5
Closure Approval No. 1994 from NJDEP-BF

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:

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

C. Soil samples and borings (check appropriate answer)

- Were soil samples taken from the excavation as prescribed? ☒ Yes ☐ No ☐ N/A
- Were soil borings taken at the tank system closure site as prescribed? ☐ Yes ☐ No ☒ X
- Attach the analytical results in tabular form and include the following information about each sample
 - Customer sample number (keyed to the site map)
 - The depth of the soil sample
 - Soil boring logs
 - Method detection limit of the method used
 - 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:

- Site diagram number for each well installed
- Depth of ground water surface
- Depth of screened interval
- Method detection limit of the method used
- Well logs
- Well permit numbers
- 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:

- N/A ppb total BTEX, N/A ppb total non-targeted VOC
- N/A ppb total B/N, N/A ppb total non-targeted B/N
- 82.6 ppm TPHC
- N/A ppb (for non-petroleum substance)

C. Remediation of free product contaminated soils N/A

- 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
- Free product contaminated soils are suspected to exist below the water table Yes No
- 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:

- ppb total BTEX, ppb total non-targeted VOC
- ppb total B/N, ppb total non-targeted B/N
- ppb total MTBE, ppb total TBA
- ppb (for non-petroleum substance)
- greatest thickness of separate phase product found
- separate phase product has been delineated Yes No N/A

C. Result(s) of well search

- 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
- 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 9.1. 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 M. Appleby SIGNATURE _____

COMPANY NAME US Army Fort Monmouth DATE _____
(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) George Bernotsky SIGNATURE N/A

COMPANY NAME CUTE DATE N/A
(Performer of Tank Decommissioning)

* The contractor was not available for signing this document

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 _____

COMPANY NAME US Army Fort Monmouth DATE _____

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 _____



APPENDIX C

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

Lab. ID #: 1614.1-.5
Sample Rec'd: 08/16/94
Analysis Start: 08/17/94
Analysis Comp: 08/17/94

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

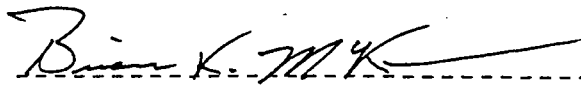
NJDEPE UST Reg.#: 0081533-84
Closure #: BFCM-7-5-94
DICAR #:
Location #: Bldg. 601

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1614.1	Site A, N-Sidewall 5.5' OVA= <1	85	43.8	6.6
1614.2	Site B, E-Sidewall 5.5' OVA= <1	87	42.7	6.6
1614.3	Site C, S-Sidewall 5.5' OVA= <1	84	55.3	6.6
1614.4	Site D, W-Sidewall 5.5' OVA= <1	86	43.2	6.6
1614.5	Site E, Piperun .5' OVA= <1 *	86	1190.	6.6
M. Bl.	Method Blank	100	ND	3.3

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

* = Silica Gel Added, NA = Not Applicable

Batch dup= 97% Batch s= 75% Batch sd= 71% RPD= 1.4%



Brian K. McKee
Laboratory Director

Analysis: Munsel

U.S. ARMY FORT MONMOUTH

P.O. #: *PWS-007* *TPHC*

Chain of Custody

dicar # *94-8-18-1613-35*

Project #: <i>0081533-84</i>		Sampler: <i>George B / Cate Inc.</i>		Date / Time: <i>8-16-94 1515</i>		Analysis Parameters		Start:					
Customer: <i>C. Appleby SELFm-PW-EV</i>		Site Name: <i>Bldg. 601</i>						Finish:					
Phone: <i>126004</i>		UST# <i>0081533-84</i>						Preservation Method					
		<i>Closure - BFCM - 7-5-94</i>											
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC % Solids MUNSEL EVA								Remarks
<i>1614.1</i>	<i>8/16/94 1520</i>	<i>Site A - N-Sidewall 5.5'</i>	<i>Soil</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>			<i>L1 Sample kept < 40°C</i>			
<i>1.2</i>	<i>1530</i>	<i>Site B - E-Sidewall 5.5'</i>	<i>↓</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>			<i>L1 Sample Jars ESS - Pre Clean</i>			
<i>1.3</i>	<i>1523</i>	<i>Site C - S-Sidewall 5.5'</i>	<i>↓</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>			<i>L1 Lot 72094</i>			
<i>1.4</i>	<i>1521</i>	<i>Site D - W-Sidewall 5.5'</i>	<i>↓</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>			<i>L1</i>			
<i>1.5</i>	<i>1525</i>	<i>Site E - Pipe Run .5'</i>	<i>↓</i>	<i>1</i>	<i>X</i>	<i>X</i>	<i>X</i>			<i>L1 ora SN A52114</i>			
										<i>Calibrated w/ Zero Air</i>			
										<i>+ 95 ppm methane at</i>			
										<i>600 Select = 3 - Read 85 ppm</i>			
										<i>8-18-94 10:45 AM</i>			
										<i>C. Appleby SELFm-PW-EV</i>			
Relinquished By (signature)		Date / Time		Received By (signature)		Shipped By:							
<i>[Signature]</i>		<i>8-16-94 1600</i>		<i>Sarah J. Hubbard</i>		<i>8/16/94 1600</i>							
Relinquished By (signature)		Date / Time		Received for Lab by (signature):		Date / Time							
<i>[Signature]</i>		<i>8-16-94 1600</i>		<i>Sarah J. Hubbard</i>		<i>8/16/94 1600</i>							
Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody. <i>Attached</i>													

Samples extracted 8/17/94

Samples analyzed on 8/18/94 0840

Sarah Hubbard

Blank 0 MV

40.75 55 MV

81.5 111 MV

163 234 MV

Method Blank 0 MV

1612.1 9 MV Building 656

1612.2 6 MV

1612.3 5 MV

1612.4 5 MV

1612.5 30 MV

1612.5 29 MV dup

1612.5 144 MV Spk

1612.5 142 MV dup. Spk.

Method Blank - Building 655
0 MV

1613.1 16 MV

1613.2 3 MV

1613.4 (3) 27 MV
1613.5 (4) 4 MV

1613.5 1 MV

1613.6 14 MV

1613.7 2 MV

1613.8 4 MV

Method Blank 0 MV Bldg. 601

195-6970-00

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Method Blank 0 MV

1612.1 9 MV Building 656

1612.2 6 MV

1612.3 5 MV

1612.4 5 MV

1612.5 30 MV

1612.5 29 MV dup

1612.5 144 MV Spk

1612.5 142 MV dup. Spk

Method Blank - Building 655

1613.1 16 MV

1613.2 3 MV

1613.3 27 MV

1613.5 4 MV

1613.5 1 MV

1613.6 14 V

1613.7 2 MV

1613.8 4 MV

Method Blank 0 MV Bldg - 601

1614.1 5 MV

1614.2 3 MV

1614.3 7 MV

1614.4 5 MV

1614.5 27 MV

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)

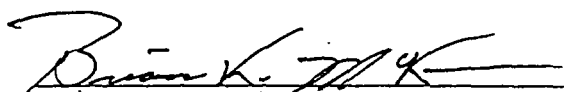
✓

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.

Project #1614


Brian K. McKee
Laboratory Manager

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

Lab. ID #: 1623.1
Sample Rec'd: 08/26/94
Analysis Start: 08/31/94
Analysis Comp: 08/31/94

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

NJDEPE UST Reg. #: 0081533-84
Closure #:
DICAR #:
Location #: Bldg. 601

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1623.1	Site E1 FEEDLINE OVA= ND	87	82.6	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added, NA = Not Applicable
BATHC dup= 115% BATCH s= 116% BATCH sd= 115% RPD= 0.8%



Brian K. McKee
Laboratory Director

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

Analysis: Munsel

[illegible]



Brian K. McKee
Laboratory Director

U.S. ARMY FORT MONMOUTH

P.O. #:

Chain of Custody

Project #: 0181533-84		Sampler: <i>George / Cate</i>		Date / Time: 8/26 10-20		Analysis Parameters		Start:	
Customer: <i>Dickinson</i>		Site Name: 601						Finish:	
Phone:		BT# 0081533-84						Preservation Method	
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	THC Mussel BS OVA				Remarks
1623.1	8/26 10-23	E1 (Feed line)	Soil	1	X	X	X	ND	<i>Inspection 4/92</i>
									<i>OVA collected</i>
									<i>2000th</i>
									<i>1st Metam 91</i>
									<i>Ready 74</i>
									<i>OVA</i>
									<i># 52114</i>
Relinquished By (signature)		Date / Time		Received By (signature)		Shipped By:			
<i>[Signature]</i>		8/26 10-30		<i>Brian K. McK</i>		8-26-94 10-30			
Relinquished By (signature)		Date / Time		Received for Lab by (signature):		Date / Time			
<i>[Signature]</i>		8/26 10-30		<i>Brian K. McK</i>		8-26-94 10-30			
Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.									

Frank J. McLeod 105

Blank

40.75 54 MV

81.5 111 MV

163 240 MV

1628.1 80 MV Building 625

1628.2 5 MV

1628.3 5 MV

1628.4 2 MV

1628.4 Dup 3 MV

1628.4 Spk 123 MV

1628.4 Dup Spk 122 MV

1628.5 13 MV

1628.6 4 MV

1628.7 3 MV

1628.1 11 MV Building 601

1624.1 0 MV Building 621

1624.2 0 MV

1624.3 0 MV

1624.4 0 MV

1624.5 3 MV

1624.6 0 MV

1624.7 2 MV

1624.8 29 MV

1625.1 ¹⁹⁸_{del 76} Building 482

1625.2 66 del 7

1625.3 128 MV

135-6970-00

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No Yes

- ✓

- ✓

- [Signature]*

- ☒

- ✓

Comments: _____

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