

**United States Army**

Fort Monmouth, New Jersey

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

***Building 3027  
Charles Wood Area***

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**NJDEP UST Registration No. 192486-28  
NJDEP Closure Approval No. C-93-3675**

**February 1996**

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

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

**BUILDING 3027**

**CHARLES WOOD AREA  
NJDEP UST REGISTRATION NO. 192486-28  
NJDEP CLOSURE APPROVAL NO. C-93-3675**

**FEBRUARY 1996**

**PROJECT NO.: 09-5004-06  
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**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

### UST Closure

On April 4, 1994, a steel underground storage tank (UST) was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) Closure Approval No. C-93-3675 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 192486-28, was located immediately adjacent to Building 3027 in the Charles Wood area of U.S. Army, Fort Monmouth. UST No. 192486-28 was a 7,500-gallon No. 2 fuel oil UST. The UST fill port was located approximately 23 feet northeast of the tank. The tank closure was performed by Cleaning Up The Environment Inc. (CUTE).

### Site Assessment

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

On April 5, 1994, following the removal of the UST, post-excavation soil samples C, D, E, F, G, and H were collected from six (6) locations along the sidewalls of the excavation, immediately above groundwater. Groundwater was present at approximately 5 feet below ground surface (bgs). Post-excavation soil samples A, B, and DUP B were also collected from the base of the piping portion of the excavation at a depth of 2.0 feet bgs. This piping area, which was designated as Area A, extended approximately 20 feet from the UST to Building 3027. Five samples were collected from the second piping portion of the excavation, adjacent to the former fill port. Samples J, L, and M were collected from the sidewalls of the piping portion of the excavation, at a depth of 1.5 feet bgs. Samples I, and K were collected from the base of the piping portion of the excavation, at a depth of 2.0 feet bgs. This former fill port and piping area, which was designated as Area B, extended approximately 23 feet from the fill port to the UST. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On April 7, 1994, following removal of approximately 8 cubic yards of potentially contaminated soils from Area A, post-excavation soil samples O, P, and Q were collected from three (3) locations along the base of the expanded portions of the excavation, at a depth of 4.0 feet bgs. The samples were analyzed for TPHC.

On April 21, 1994, 1.5 cubic yards of potentially contaminated soils were removed from Area B, and three (3) post-excavation soil samples (R, S, and T) were collected from the sidewalls of the



expanded portions of the fill port excavation area, at a depth of 2.5 feet bgs. Sample U was also collected from the base of the excavation at a depth of 3.0 feet bgs. The samples were analyzed for TPHC.

### Findings

The samples collected from below the former UST on April 5, 1994, at Building 3027 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 C, D, E, F, G, and H, contained TPHC concentrations ranging from 7.22 mg/kg to 55.0 mg/kg.

The samples collected from below the area designated as Area A, on April 5, 1994 contained TPHC concentrations below the NJDEP soil cleanup criteria of 10,000 mg/kg. Samples B, and DUP B each contained a TPHC concentration of 15.4 mg/kg. Sample A contained a TPHC concentration of 920.0 mg/kg.

On April 7, 1994, following removal of potentially contaminated soils from the area surrounding sample location A, three additional samples (O, P, and Q) were collected. Samples O, P, and Q contained TPHC concentrations ranging from 15.2 mg/kg to 310.0 mg/kg.

One sample (sample M), which was collected from Area B on April 5, 1994, contained an elevated TPHC concentration of 13,300 mg/kg. This exceeded the NJDEP soil cleanup criteria of 10,000 mg/kg. All other samples collected from Area B on April 5, 1994 contained TPHC concentrations below the NJDEP soil cleanup criteria. Samples I, J, and L contained levels of TPHC ranging in concentration from 15.4 mg/kg to 125.0 mg/kg. Sample K contained a TPHC concentration of 1,260.0 mg/kg.

On April 21, 1994, following removal of potentially contaminated soils from the area surrounding sample locations K, and M, four additional samples (R, S, T, and U) were collected. Sample R contained a TPHC concentration of 81.3 mg/kg. Sample U, which was collected from the exact location as the previous sample K, contained a TPHC concentration of 493.0 mg/kg. Sample S, which was collected directly below the location of previous sample M, contained a non-detectable concentration of TPHC. Sample T also contained a non-detectable concentration of TPHC.

### 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 analyses 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 associated piping.

Based on the soil sampling results, which indicated decreasing TPHC concentrations with depth, and the 5-foot depth to the water table, groundwater impacts were not anticipated and a groundwater investigation was deemed unnecessary.

No further action is proposed in regard to the closure and site assessment of UST No. 192486-28 at Building 3027.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 192486-28, was closed at Building 3027 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on April 4, 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 July 22, 1993. The plan was approved on September 7, 1993 and assigned TMS No. C-93-3675. The UST was a steel 7,500-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 192486-28 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. Cleaning Up The Environment Inc. (CUTE), the contractor that conducted the decommissioning activities, is registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 192486-28 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. 192486-28 are included in Appendices A and B, respectively.

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

This UST Closure and Site Investigation Report has been prepared by 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).

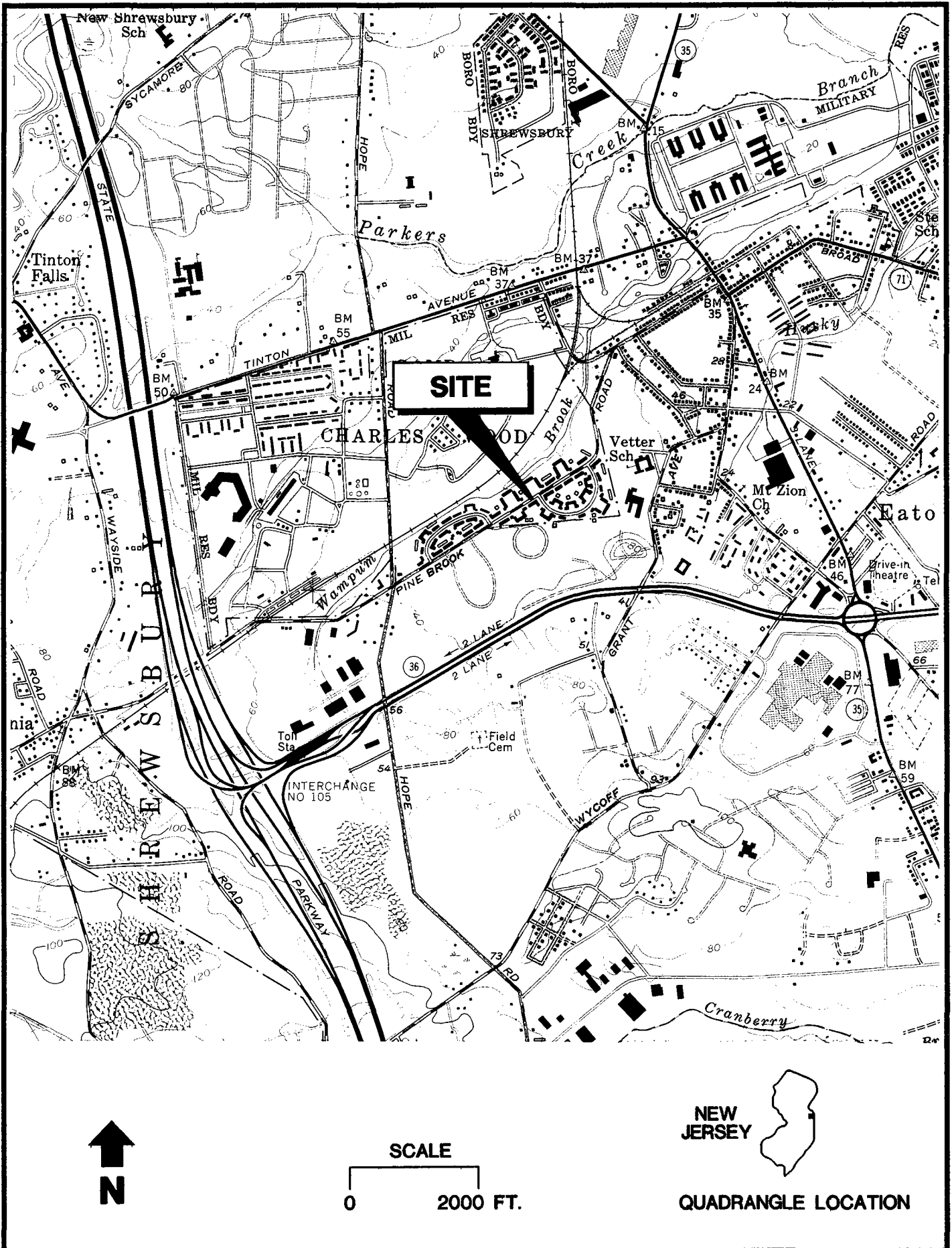
This report was prepared using information required at the time of closure. Section 1 of this UST Closure and Site Investigation Report provides a summary of the UST decommissioning activities. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling investigation, are presented in the final section of this report.



# SMITH

U.S. Army  
Department of Public Works  
Fort Monmouth, New Jersey

Source: U.S.G.S. Quadrangle Long Branch, N.J. (Photorevised 1981)



Project No. 09-5004-07

Figure 1  
**Site Location Map**

## **1.2 SITE DESCRIPTION**

Building 3027 is located in the southeastern portion of the Charles Wood area of Fort Monmouth, as shown on Figure 1. UST No. 192486-28 was located east of Building 3027. Appurtenant piping ran approximately 23 feet southwest from the fill port area to the UST and approximately 20 feet southwest from the UST to Building 3027. The fill port area was located adjacent to the curb along Mitchell Drive for easy access. 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 3027. 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 Charles Wood 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.

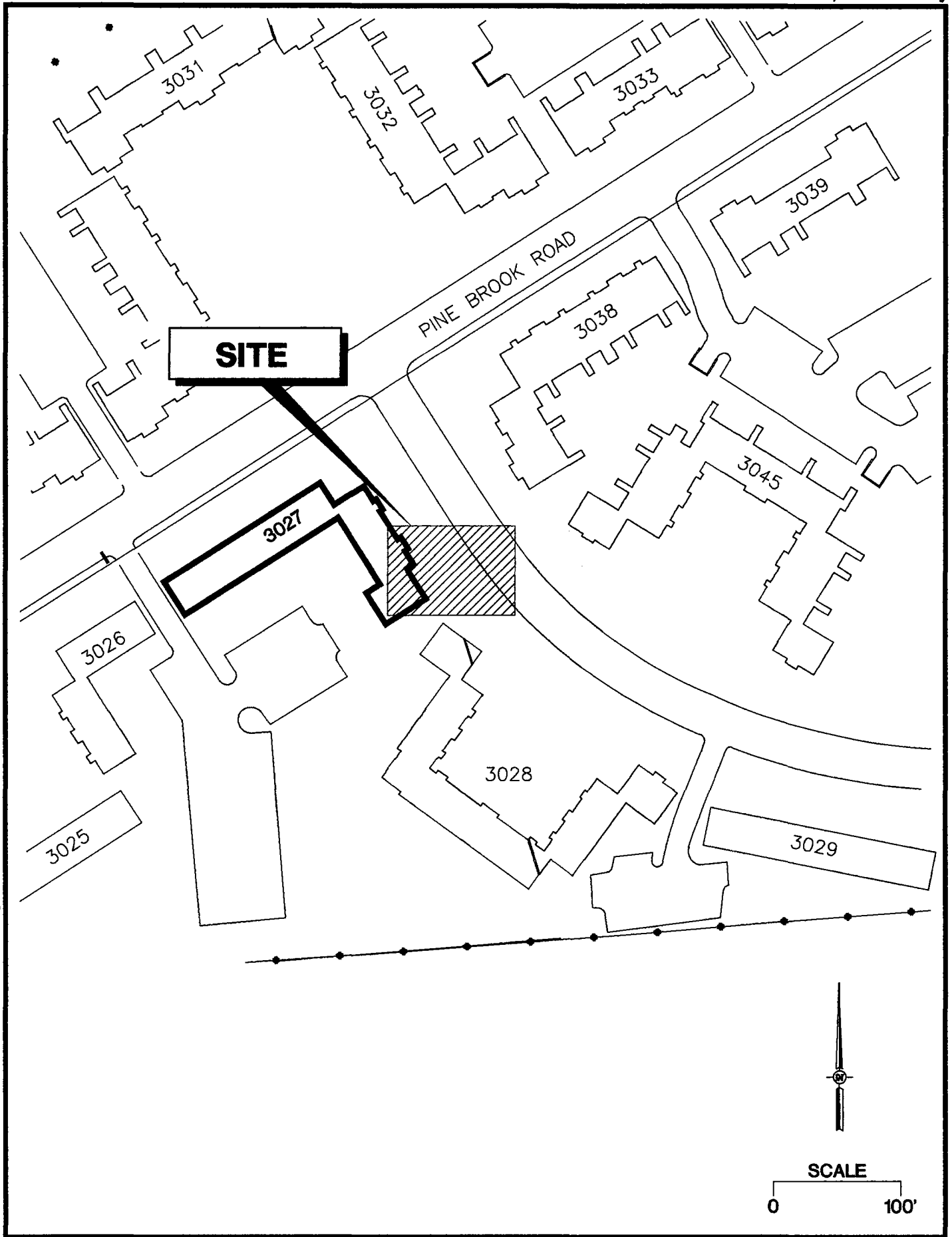
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapcza, 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 Zapcza, 1990).

#### Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Charles Wood 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-

Source: Smith Environmental Technologies Corporation (088)



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 ironoxide encrusted (Minard).

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities by the military. Topographic elevations for the Charles Wood area range from 20 feet above mean seal level (MSL) to 71 feet above MSL.

## Hydrogeology

The water table aquifer in the Charles Wood 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.

Six well records for monitor wells installed at locations within the Charles Wood area in February 1981 were used for reference. The wells were completed to total depths ranging from 20 to 25 feet below ground surface (bgs). Water was encountered at depths ranging from 5 to 12 feet bgs.

The lithologic descriptions for these borings described deposits that were primarily fine to coarse, glauconitic sands, with traces of gravel, silt, and clay. These sediments are part of the Hornerstown Marl, from the Tertiary Period (Paleocene Series, approximately 58 to 66 Ma). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce from 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Shallow groundwater is locally influenced within the Charles Wood 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 Charles Wood 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 involved with, or were affected by, the decommissioning of the UST system were minimized. All areas which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

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

#### **1.4.1 General Procedures**

- All underground obstructions (utilities, etc.) were marked out by the contractor performing the closure prior to excavation activities.
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all closure activities.

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

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. A total of 7,544 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc., a NJDEP-



approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifests (manifest Nos. NJA-1603174 and NJA-1603175).

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 corrosion holes. No holes, 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 UST's piping and fill port areas. No contamination was noted anywhere along the piping lengths or fill port area.

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

The tank was transported by CUTE Inc. to Mazza and Sons Inc., for disposal in compliance with all applicable regulations and laws. See Appendix D for UST Disposal Certificate.

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

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

## **1.6 MANAGEMENT OF EXCAVATED SOILS**

Based on elevated TPHC results, approximately 8 cubic yards of potentially contaminated soils were excavated from Area A on April 7, 1994. On April 21, 1994 approximately 1.5 cubic yards of soil were removed from Area B based on TPHC results. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to the Charles Wood ID 27 Soil Staging Area (Building 2624) prior to ultimate disposal at Soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

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

The following Parties participated in Closure and Site Investigation Activities.

- Closure Contractor: Cleaning Up The Environment Inc. (CUTE)  
Contact Person: Nancy Williams  
Phone Number: (201)427-2881  
NJDEP Company Certification No.: 0200128
- Subsurface Evaluator: Charles M. Appleby  
Employer: U.S. Army, Fort Monmouth  
Phone Number: (908)532-6224  
NJDEP Certification No.: 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: Freehold Cartage Inc.  
Contact Person: Barry Olsen  
Phone Number: (908)721-0900  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soils were removed from Area A and Area B until no evidence of contamination remained.

### 2.3 SOIL SAMPLING

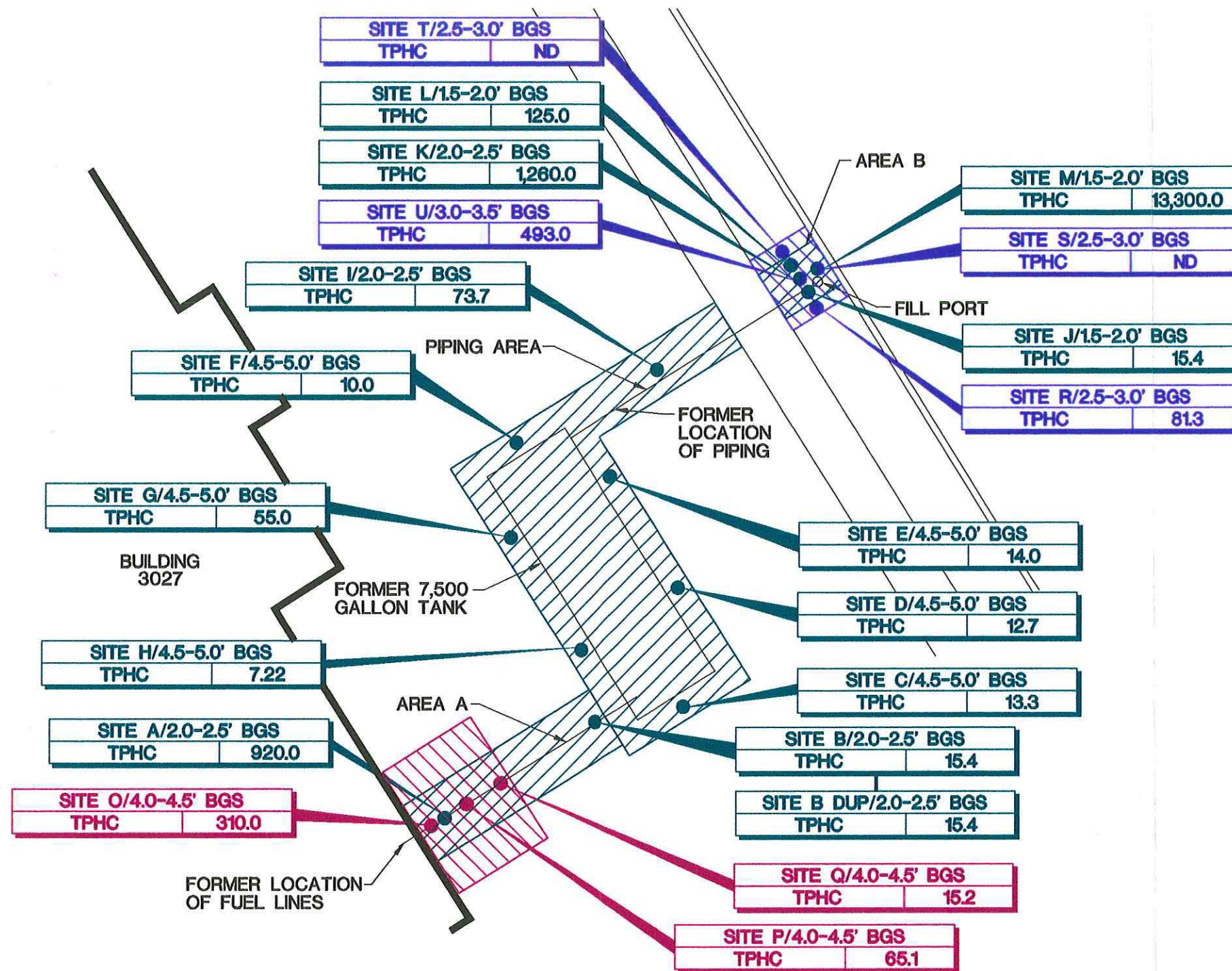
On April 5, 1994 post-excavation soil samples C, D, E, F, G, and H were collected from six (6) locations along the sidewalls of the UST excavation, immediately above groundwater. Groundwater was present at approximately 5 feet below ground surface (bgs). Refer to soil sampling location map in Figure 3. On April 5, 1994, three (3) post-excavation soil samples (A, B, and DUP B) were also collected immediately below the former location of piping, at a depth of 2.0 feet below ground surface (bgs). This piping area, which was designated as Area A, extended approximately 20 feet from the UST to Building 3027. Additionally, five (5) samples (I, J, K, L, and M) were collected along the base and sidewalls of the former fill port and piping area, which extended approximately 23 feet from the fill port to the UST. Samples J, L, and M were collected from the sidewalls of this piping portion of the excavation, at a depth of 1.5 feet bgs. Samples I, and K were collected from the base of the piping portion of the excavation, at a depth of 2.0 feet bgs. This former fill port and piping area was designated as Area B. Refer to soil sampling location map on Figure 3. All samples were analyzed for TPHC.

On April 7, 1994, soils from sampling location Area A were excavated due to elevated TPHC results. Following removal of approximately 8 cubic yards of potentially contaminated soils, post-excavation soil samples (O, P, and Q) were collected from three (3) locations along the base of the expanded portions of the excavation, at a depth of 4.0 feet bgs. The samples were analyzed for TPHC. Refer to soil sampling location map on Figure 3.

On April 21, 1994 soils from sampling location Area B were excavated due to elevated TPHC results. Following removal of approximately 1.5 cubic yards of potentially contaminated soils, four (4) post-excavation soil samples were collected from the base and sidewalls of the expanded portions of the excavation. Three (3) post-excavation soil samples (R, S, and T) were collected from the sidewalls of the expanded portions of the fill port excavation area, at a depth of 2.5 feet bgs. Sample U was also collected from the base of the excavation at a depth of 3.0 feet bgs. The samples were analyzed for TPHC. Refer to soil sample location map in Figure 3.

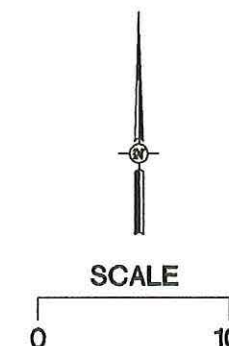
The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using 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 986.0 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 SAMPLE LOCATION (APRIL 5, 1994)    ● SOIL SAMPLE LOCATION (APRIL 7, 1994)    ● SOIL SAMPLE LOCATION (APRIL 21, 1994)    ● SAMPLES COLLECTED FROM SAME LOCATION
- ▨ LIMIT OF EXCAVATION (APRIL 5, 1994)    ▨ LIMIT OF EXCAVATION (APRIL 7, 1994)    ▨ LIMIT OF EXCAVATION (APRIL 21, 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



### 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 fourteen (14) locations on April 5, 1994, from a total of three (3) locations on April 7, 1994, and from a total of four (4) locations on April 21, 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 E.

The samples collected from below the former UST on April 5, 1994, at Building 3027 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 C, D, E, F, G, and H, contained TPHC concentrations ranging from 7.22 mg/kg to 55.0 mg/kg.

The samples collected from below the area designated as Area A, on April 5, 1994 contained TPHC concentrations below the NJDEP soil cleanup criteria of 10,000 mg/kg. Samples B, and DUP B each contained a TPHC concentration of 15.4 mg/kg. Sample A contained a TPHC concentration of 920.0 mg/kg.

On April 7, 1994, following removal of potentially contaminated soils from the area surrounding sample location A, three additional samples (O, P, and Q) were collected. Samples O, P, and Q contained TPHC concentrations ranging from 15.2 mg/kg to 310.0 mg/kg.

One sample (sample M), which was collected from Area B on April 5, 1994, contained an elevated TPHC concentration of 13,300 mg/kg. This exceeded the NJDEP soil cleanup criteria of 10,000 mg/kg. All other samples collected from Area B on April 5, 1994 contained TPHC concentrations below the NJDEP soil cleanup criteria. Samples I, J, and L contained levels of TPHC ranging in concentration from 15.4 mg/kg to 125.0 mg/kg. Sample K contained a TPHC concentration of 1,260.0 mg/kg.

On April 21, 1994, following removal of potentially contaminated soils from the area surrounding sample locations K, and M, four additional samples (R, S, T, and U) were collected. Sample R contained a TPHC concentration of 81.3 mg/kg. Sample U, which was collected from the exact location as the previous sample K, contained a TPHC concentration of 493.0 mg/kg. Sample S, which was collected directly below the location of previous sample M, contained a non-detectable concentration of TPHC. Sample T also contained a non-detectable concentration of TPHC.

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES  
BUILDING 3027, CHARLES WOOD  
FORT MONMOUTH, NEW JERSEY

| Sample ID | Date of Collection | Matrix | Sample Type     | Analytical Parameters<br>(and USEPA Methods) * | Sampling Method   |
|-----------|--------------------|--------|-----------------|------------------------------------------------|-------------------|
| A         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| B         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| C         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| D         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| E         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| F         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| G         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| H         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| I         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| J         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| K         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| L         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| M         | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| DUP B     | 04-05-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| O         | 04-07-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| P         | 04-07-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| Q         | 04-07-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| R         | 04-21-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| S         | 04-21-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| T         | 04-21-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |
| U         | 04-21-94           | Soil   | Post-Excavation | TPHC                                           | Polystyrene Scoop |

\*Note: TPHC

Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)



### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all final post-excavation soil samples collected from the UST closure excavation at Building 3027 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 remain in the former location of the UST or associated piping.

Based on the soil sampling results, which indicated decreasing TPHC concentrations with depth, and the 5-foot depth to the water table, groundwater impacts were not anticipated and a groundwater investigation was deemed unnecessary.

No further action is proposed in regard to the closure and site assessment of UST No. 192486-28 at Building 3027.

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
BUILDING 3027  
FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 2

| 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/2.0-2.5'      | 1438.1               | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 96 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 20.0                              | yes                 | 920.0          | 10,000                                | --                       |
| B/2.0-2.5'      | 1438.2               | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 94 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 15.4           | 10,000                                | --                       |
| C/4.5-5.0'      | 1438.3               | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 89 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 13.3           | 10,000                                | --                       |
| D/4.5-5.0'      | 1438.4               | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 93 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 12.7           | 10,000                                | --                       |
| E/4.5-5.0'      | 1438.5               | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 94 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 14.0           | 10,000                                | --                       |
| F/4.5-5.0'      | 1438.6               | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 92 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 10.0           | 10,000                                | --                       |
| G/4.5-5.0'      | 1438.7               | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 92 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 55.0           | 10,000                                | --                       |
| H/4.5-5.0'      | 1438.8               | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 91 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 7.22           | 10,000                                | --                       |
| I/2.0-2.5'      | 1438.9               | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 91 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 73.7           | 10,000                                | --                       |
| J/1.5-2.0'      | 1438.10              | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 94 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 15.4           | 10,000                                | --                       |
| K/2.0-2.5'      | 1438.11              | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 92 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 20.0                              | yes                 | 1,260.0        | 10,000                                | --                       |
| L/1.5-2.0'      | 1438.12              | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 95 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 125.0          | 10,000                                | --                       |
| M/1.5-2.0'      | 1438.13              | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 96 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 140.0                             | yes                 | 13,300.0       | 10,000                                | --                       |
| DUP B/2.0-2.5'  | 1438.14              | 04-05-94    | 04-06-94      | Total Solid   | --                                | --                  | 94 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 15.4           | 10,000                                | --                       |



TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 3027  
 FT. MONMOUTH, NEW JERSEY

PAGE 2 OF 2

| 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 |
|-----------------|----------------------|-------------|---------------|---------------|-----------------------------------|---------------------|----------------|---------------------------------------|--------------------------|
| O/4.0-4.5'      | 1441.1               | 04-07-94    | 04-08-94      | Total Solid   | --                                | --                  | 85 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 9.9                               | yes                 | 310.0          | 10,000                                | --                       |
| P/4.0-4.5'      | 1441.2               | 04-07-94    | 04-08-94      | Total Solid   | --                                | --                  | 86 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 5.0                               | yes                 | 65.1           | 10,000                                | --                       |
| Q/4.0-4.5'      | 1441.3               | 04-07-94    | 04-08-94      | Total Solid   | --                                | --                  | 87 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 5.0                               | yes                 | 15.2           | 10,000                                | --                       |
| R/2.5-3.0'      | 1454.1               | 04-21-94    | 04-22-94      | Total Solid   | --                                | --                  | 94 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | 81.3           | 10,000                                | --                       |
| S/2.5-3.0'      | 1454.2               | 04-21-94    | 04-22-94      | Total Solid   | --                                | --                  | 94 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | ND             | 10,000                                | --                       |
| T/2.5-3.0'      | 1454.3               | 04-21-94    | 04-22-94      | Total Solid   | --                                | --                  | 94 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 3.3                               | yes                 | ND             | 10,000                                | --                       |
| U/3.0-3.5'      | 1454.4               | 04-21-94    | 04-22-94      | Total Solid   | --                                | --                  | 93 %           | --                                    | --                       |
|                 |                      |             |               | TPHC          | 5.0                               | yes                 | 493.0          | 10,000                                | --                       |

Notes:

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

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

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soil3027.doc

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**APPENDIX A**  
**NJDEP BUST CLOSURE APPROVAL**

# UNDERGROUND STORAGE TANK SYSTEM CLOSURE APPROVAL

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL  
PROTECTION AND ENERGY

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

TMS #

UST #

C-93-3675

0192486

US Army  
BLDG. 3027  
Ft. Monmouth, NJ

Monmouth

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

Removal of: one 7,500 gallon #2 diesel UST(s) and appurtenant  
piping.

SITE ASSESSMENT: Soil samples will be taken every five (5) feet  
along the center line of each tank and one (1) soil sample for  
every 15 feet along all associated piping. Two (2) additional  
samples will be taken from around the tank and biased to the areas  
of highest field screened readings. Samples will be analyzed for  
TPHC. If sample results are greater than 1,000ppm than 25% of the  
samples will be analyzed for VO+10.

ON-SITE MANAGER: C. Appleby

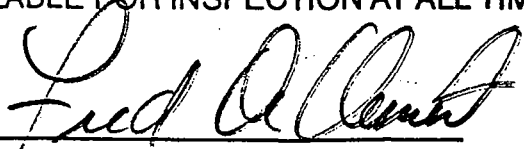
TELEPHONE: 609-532-1475

OWNER:

TELEPHONE:

EFFECTIVE DATE: SEP 07 1993

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

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



**APPENDIX B**

**CERTIFICATIONS**



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

State of New Jersey  
Department of Environmental Protection and Energy  
Division of Responsible Party Site Remediation

CN 029  
Trenton, NJ 08625-0029  
Tel. # 609-984-3156  
Fax. # 609-292-5604

Scott A. Weiner -  
Commissioner

Karl J. Delaney  
Director

**UNDERGROUND STORAGE TANK  
SITE ASSESSMENT SUMMARY**

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

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

**INSTRUCTIONS:**

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

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

Bldg. 3027

0192486-28  
FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

U.S. Army, Fort Monmouth, New Jersey  
Directorate of Engineering and Housing Building 167  
Fort Monmouth, New Jersey 07703 County Monmouth  
Telephone No. (908) 532-6224

OWNER'S NAME AND ADDRESS, if different from above

Telephone No. \_\_\_\_\_

## II. DISCHARGE REPORTING REQUIREMENTS

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

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

C. Have any vapor hazards been mitigated? ☐ Yes ☐ No ☒ N/A

## III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. C-93-3675

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. 493.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

C. Remediation of free product contaminated soils

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

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

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

VI. GROUND WATER CONTAMINATION N/A

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

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

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

C. Result(s) of well search

1. A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. Yes ☒ No ☒ N/A ☒
2. The number of these wells identified is \_\_\_\_\_.

D. Proximity of wells and contaminant plume

1. The shallowest depth of any well noted in the well search which may be in the horizontal or vertical potential path(s) of the contaminant plume(s) is \_\_\_\_\_ feet below grade (consideration has been given for the effects of pumping, subsurface structures, etc. on the direction(s) of contaminant migration). This well is \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ feet.
2. The shallowest depth to the top of the well screen for any well in the potential path of the plume(s) (as described in D1 above) is \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ feet from the source.
3. The closest horizontal distance of a private, commercial or municipal well in the potential path of the plume (as determined in D1) is \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

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

F. A ground water contour map has been submitted which includes the ground water elevations for each well.  
\_\_\_\_ Yes \_\_\_\_ No \_\_\_\_ N/A

G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. \_\_\_\_ Yes \_\_\_\_ No
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  
\_\_\_\_ Yes \_\_\_\_ No
3. Off property access (circle one):    is being sought    has been approved    has been denied

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

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

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

NAME (Print or Type) Charles M. Appleby SIGNATURE 

COMPANY NAME U.S. Fort Monmouth DATE 12/21/95  
(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."*

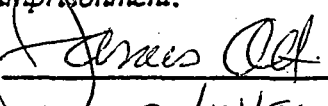
NAME (Print or Type) \_\_\_\_\_ SIGNATURE \_\_\_\_\_

COMPANY NAME \_\_\_\_\_ DATE \_\_\_\_\_  
(Performer of Tank Decommissioning)

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

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

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

NAME (Print or Type) James Ott SIGNATURE 

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)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 \_\_\_\_\_

F-10

F-11

F-12

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## APPENDIX C

## WASTE MANIFEST



State of New Jersey  
Department of Environmental Protection and Energy  
Hazardous Waste Regulation Program  
Manifest Section  
CN 028, Trantion, NJ 08628-0038

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

Form Approved. OMB No. 2050-0038. Expires 9-30-94

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                                 |               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------|---------------|
| <b>UNIFORM HAZARDOUS WASTE MANIFEST</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | 1. Generator's US EPA ID No.<br>NJ1212110101210191718 | Manifest Document No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2. Page 1 of 1     | Information in the shaded areas is not required by Federal law. |               |
| 3. Generator's Name and Mailing Address<br>US Army Communications Electronics Center<br>Charles Wood Area, c/o James Shirghio, Bldg 2504<br>ATTN: SEFM-DL-EM-MS, Fort Monmouth, NJ 07703                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                       | A. State Manifest Document Number<br>NJ1603175                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                                                                 |               |
| 4. Generator's Phone (908) 532-6223                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                       | B. State Generator's ID<br>NJ1603175                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |                                                                 |               |
| 5. Transporter 1 Company Name<br>Freehold Cartage Inc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                                       | C. State Trans. ID<br>NJ010198-51                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |                                                                 |               |
| 6. US EPA ID Number<br>NJ1212110101210191718                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                       | D. Transporter's Phone (908) 532-1801                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                                                                 |               |
| 7. Transporter 2 Company Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                       | E. State Trans. ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                                                                 |               |
| 8. US EPA ID Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                       | F. Transporter's Phone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                 |               |
| 9. Designated Facility Name and Site Address<br>Lionetti Oil Recovery Co., Inc.<br>Runyon & Cheesequake Rds.<br>Old Bridge, NJ 08857                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                       | G. State Facility's ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                 |               |
| 10. US EPA ID Number<br>NJ1212110101210191718                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                       | H. Facility's Phone (908) 721-0900                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                                                                 |               |
| 11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)<br>HM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                       | 12. Containers<br>No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 13. Total Quantity | 14. Unit<br>Wt/Vol                                              | 15. Waste No. |
| a. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil)<br>Combustible Liquid UN 1270 PG III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                       | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1000               | 40 G                                                            | 171212        |
| b. X PETROLEUM OIL, N.O.S. CLASS (3) PETROLEUM<br>OIL, COMBUSTIBLE LIQUID UN 1270<br>PG III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                       | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1000               | 40 G                                                            | 171212        |
| c.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                                 |               |
| d.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                                 |               |
| 16. Additional Descriptions for Materials Listed Above<br>Petroleum Oil<br>Water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                       | 17. Handling Codes for Wastes Listed Above<br>101, 111, 121, 131, 141, 151, 161, 171, 181, 191, 201, 211, 221, 231, 241, 251, 261, 271, 281, 291, 301, 311, 321, 331, 341, 351, 361, 371, 381, 391, 401, 411, 421, 431, 441, 451, 461, 471, 481, 491, 501, 511, 521, 531, 541, 551, 561, 571, 581, 591, 601, 611, 621, 631, 641, 651, 661, 671, 681, 691, 701, 711, 721, 731, 741, 751, 761, 771, 781, 791, 801, 811, 821, 831, 841, 851, 861, 871, 881, 891, 901, 911, 921, 931, 941, 951, 961, 971, 981, 991 |                    |                                                                 |               |
| 15. Special Handling Instructions and Additional Information<br>NOT EPA REGULATED. REGULATED AS HAZARDOUS WASTE IN NJ.<br>11a. ERG #27 24 HOUR EMERGENCY PHONE: 201-427-2881<br>NJ DECAL# 2265-55364                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                       | a) UST# 00192486-28<br>b) UST# 0081533-61                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                                                 |               |
| 16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.<br>If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. |  |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                                 |               |
| Printed/Typed Name<br>Charles M. Appleby SEFM-PW-EX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                       | Signature<br>[Signature]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    | Month Day Year<br>10/10/94                                      |               |
| 17. Transporter 1 Acknowledgement of Receipt of Materials<br>Printed/Typed Name<br>ANTONIO TROCCHIO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                       | Signature<br>[Signature]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    | Month Day Year<br>04/04/94                                      |               |
| 18. Transporter 2 Acknowledgement of Receipt of Materials<br>Printed/Typed Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                       | Signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    | Month Day Year                                                  |               |
| 19. Discrepancy Indication Space                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                                 |               |
| 20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 18.<br>Printed/Typed Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                                 |               |
| Signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                       | Month Day Year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |                                                                 |               |

NJ1603175







STAVOLA ASPHALT CO. - TINTON FALLS

**Stavola Asphalt Co., Inc.****ASPHALT PLANTS**Old Bergen Mill Rd.  
Millstone, NJ  
(908) 446-7700Hamilton Rd.  
Tinton Falls, NJ  
(908) 542-2328Yellowbrook Rd.  
Farmingdale, NJ  
(908) 938-2801

CONTROL NO.

**B346002**

B12g 3027

RECEIVED &amp; ACCEPTED BY:

**X**

CUSTOMER'S SIGNATURE

  
DRIVER'S SIGNATURE
EXECUTIVE OFFICE  
HAMILTON ROAD  
TINTON FALLS, NJ  
908 / 542-2328

• ASPHALT  
CRUSHED STONE • SAND  
• GRAVEL

ADDRESS REPLY TO  
P.O. BOX 482  
RED BANK, N.J. 07701

THIS COMPANY WILL NOT BE RESPONSIBLE FOR DAMAGE CAUSED BY VEHICLES DELIVERING MATERIALS OFF PUBLIC ROADS.

## EXPLANATION OF DELIVERY CODES

- 1 - F.O.B.
- 2 - DELIVERED
- 3 - NET DELIVERED

|                                                               |                          |                   |                 |                      |            |               |                |        |  |
|---------------------------------------------------------------|--------------------------|-------------------|-----------------|----------------------|------------|---------------|----------------|--------|--|
| 04/05/94                                                      |                          | CUST. NO.         | 08888           | JOB NO.              | 08:10      |               | TICKET NO.     | 346002 |  |
| FROMER<br>CLEAN UP ENVIRONMENT                                |                          |                   |                 | DELIVER TO<br>ZONE 1 |            |               | GROSS<br>35.14 |        |  |
|                                                               |                          |                   |                 |                      |            |               | TARE<br>14.04  |        |  |
|                                                               |                          |                   |                 |                      |            |               | NET<br>21.10   |        |  |
| TRUCK NO.                                                     | DRIVER NO.               | METHOD OF PAYMENT |                 |                      |            | DELIVERY CODE |                | ZONE   |  |
| 08888                                                         | 1                        | CHARGE            |                 |                      |            | 1             |                |        |  |
| TITLE                                                         | PRODUCT CODE/DESCRIPTION |                   | UNIT OF MEASURE | UNIT PRICE           | EXTENDED   | FREIGHT       | SALES TAX      | TOTAL  |  |
| 21.10                                                         | 13 3/4 INCH CLEAN S      |                   | TON             |                      |            |               |                |        |  |
| WAITING TIME OVER 20 MINUTES MUST BE SIGNED BELOW BY CUSTOMER |                          |                   |                 |                      |            |               | H/WAIT TIME 00 |        |  |
| JOB                                                           | TIME OFF JOB             |                   | LOADS           |                      | ACCU. TONS | GRAND TOTAL   |                |        |  |
|                                                               |                          |                   | 1               |                      | 21.10      |               |                |        |  |
| (SIGNATURE)                                                   |                          |                   | <b>X</b>        |                      |            |               |                |        |  |

21.10  
11.86  
32.96 TON

APR-15-94 FRI 11:25

C.U.T.E

FAX NO. 201 423 0750

P.15

|                                                 |  |                                                                                                                            |                        |
|-------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>CERTIFIED WEIGHTMASTER<br/>WEIGHT TICKET</b> |  | US Army Garrison Fort Monmouth<br>Directorate for Installation Logistics, Sup Svcs Div.<br>Fort Monmouth, New Jersey 07703 |                        |
| WEIGHT                                          |  |                                                                                                                            |                        |
| B12g 3027                                       |  | 61 040                                                                                                                     | Lbs. GROSS             |
|                                                 |  | 37 330                                                                                                                     | Lbs. TARE              |
|                                                 |  | 23 710                                                                                                                     | Lbs. NET 11.86 tons    |
| VEHICLE IDENTIFICATION<br>JT-1                  |  | DL NUMBER                                                                                                                  | COMMODITY<br>3/4 Stone |
| NAME OF SHIPPER<br>UTE Inc. - Union             |  | NAME OF CARRIER<br>L. J. Kelly - Dan                                                                                       |                        |
| REMARKS                                         |  | DRIVER SIGNATURE<br>Dan Kelly                                                                                              |                        |
|                                                 |  | <input type="checkbox"/> DRIVER ON <input checked="" type="checkbox"/> DRIVER OFF                                          |                        |
| DATE<br>04-04-94                                |  | WEIGHTMASTER<br>Jack Hickey                                                                                                |                        |

DD Form 1671 - August 1986

USAGFM 1715-26

APR-15-94 FRI 11:21

C.U.T.E.

FAX NO. 201 423 6. J

P.10

BLDG 3027 10.6 TONS



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-483-3333

18623

Name

Big A

(Bldg 2700 used 11.5  
4570081533-61 Tons)

Address

AT plant Fill

Order Date

Apr 7, 94

Deliver Date

4, 8, 94

Delivered ☐C.O.D. ☐F.O.B./P.U. ☐Charge ☐

Bldg 3027 used 10.6 tons

| Item(s) | Quantity / Measure<br>(tons, lbs., yds., ea.) | Unit Price | Total |
|---------|-----------------------------------------------|------------|-------|
| G       | 70000                                         |            |       |
| T       | 25800                                         |            |       |
| N       | 44200                                         | 22.10 tons |       |

Driver

Donelli

Received

\* Company not responsible for damage done off public roads. Color not guaranteed

Have gravel will travel!  
since 1925

32.00 Fill  
32.00 Stone

64.96  
- 56.30 void  
8.66 ID#27  
Removed TCB

Sub Total

Delivery

N.J. Tax

Total

N/C

10.60

21.40

32.00

32.00

- 56.30 void

Chargeable  
Fill TCB

APR-15-94 FRI 11:25

C. U. T. E.

FAX NO. 201 423 50

P. 16.



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18621

Name By A Bldg 3027Address AT plant Fill

Order Date

Deliver Date

Apr 2, 94Delivered ☐C.O.D. ☐F.O.B./P.U. ☐Charge ☐

| Item(s) | Quantity / Measure<br>(tons, lbs., yds., ea.) | Unit<br>Price | Total |
|---------|-----------------------------------------------|---------------|-------|
| G       | 88605                                         |               |       |
| T       | 25800                                         | 21.4 tons     |       |
| N       | 42805                                         |               |       |

Driver \_\_\_\_\_

Received TOP TORDT

\* Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel will travel!*  
*since 1925*

Sub Total

Delivery

N.J. Tax

Total

N/C

**MAZZA & SONS, INC.**

70565

Recycling Division

3230 Shafto Road • Tinton Falls, NJ 07753

(908) 922-9292

**Recycling Material Receipt Form**

B125 3207

Customer: Cut & Inc

Address: \_\_\_\_\_

Job Location: ENTDate: 15 Apr. 1994

Truck/Container No \_\_\_\_\_

License Plate/D.E.P.# 4 1304391

10 yd

20 yd

30 yd

40 yd

50 yd

61780

2742

34,360

1718

|                |                                                                       |
|----------------|-----------------------------------------------------------------------|
| Concrete       |                                                                       |
| <u>Asphalt</u> |                                                                       |
| Stumps         |                                                                       |
| Brush          |                                                                       |
| Wood           |                                                                       |
| Pallets        |                                                                       |
| Glass          |                                                                       |
| Tires          |                                                                       |
| Painted Wood   |                                                                       |
| Shingles       |                                                                       |
| TOTAL:         | COO <input checked="" type="checkbox"/> BILL <input type="checkbox"/> |

ghmaster: LCustomer: Don Ellis

**APPENDIX D**

**UST DISPOSAL CERTIFICATE**

P. 17

**MAZZA & SONS, INC.**

**Metal Recyclers**  
**Auto and Truck**  
**3230 Shatto Rd.**  
**Tinton Falls, NJ**  
**(808) 922-9292**

**NO.** \_\_\_\_\_

DATE 5 Apr. 194

B12j 3027  
45T 00192486-28

Customer's Name Cute inc

**Address** \_\_\_\_\_

**Make of Autos**

| Weight | Price |
|--------|-------|
|--------|-------|

41260 LB 6

29740 LB 5

11,520

**Cast Iron**

## Steel

LL Kon

**Copper #1**

**Copper #2**

**LL Copper**

**Bres0**

## Alum Clean

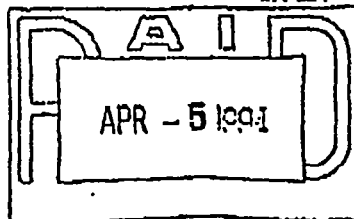
**Lead**

## Stainless

## Radiators

### Battery

**TOTAL AMOUNT:**

Weigher \_\_\_\_\_ Customer Daniel



## SOIL ANALYTICAL DATA PACKAGE

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

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

Lab. ID #: 1438.1-.14  
Sample Rec'd: 04/05/94  
Analysis Start: 04/06/94  
Analysis Comp: 04/06/94

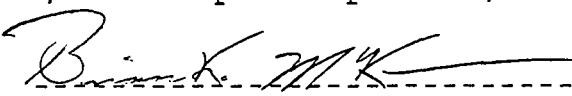
Analysis: 418.1 (TPH)  
Matrix: Soil  
Analyst: S. Hubbard  
Ext. Meth: Sonc.

|                    |           |
|--------------------|-----------|
| NJDEPE UST Reg. #: | 192486-28 |
| Closure #:         | C-93-3675 |
| NJDEPE Case #:     |           |
| Location #:        | 3027      |

| Lab ID. | Description                       | %Solid | Result<br>(mg/Kg) | MDL |
|---------|-----------------------------------|--------|-------------------|-----|
| 1438.1  | Site A, 2'-2.5' OVA= ND *         | 96     | 920.              | 20. |
| 1438.2  | Site B, 2'-2.5' OVA= ND           | 94     | 15.4              | 3.3 |
| 1438.3  | Site C, 5'-5.5' OVA= ND           | 89     | 13.3              | 3.3 |
| 1438.4  | Site D, 5'-5.5' OVA= ND           | 93     | 12.7              | 3.3 |
| 1438.5  | Site E, 5'-5.5' OVA= ND           | 94     | 14.0              | 3.3 |
| 1438.6  | Site F, 5'-5.5' OVA= ND           | 92     | 10.0              | 3.3 |
| 1438.7  | Site G, 5'-5.5' OVA= ND           | 92     | 55.0              | 3.3 |
| 1438.8  | Site H, 5'-5.5' OVA= ND           | 91     | 7.22              | 3.3 |
| 1438.9  | Site I, 2'-2.5' OVA= ND           | 91     | 73.7              | 3.3 |
| 1438.10 | Site J, WALL OF FILL OVA = ND     | 94     | 15.4              | 3.3 |
| 1438.11 | Site K, PIT BOTTOM FILL, OVA=ND * | 92     | 1260.             | 20. |
| 1438.12 | Site L, N. WALL OF FILL, OVA=ND   | 95     | 125.              | 3.3 |
| M. Bl.  | Method Blank                      | 100    | ND                | 3.3 |

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

1438.4Dup.=123%, 1438.4Spike= 90%, 1438.4Spike Dup.=100%, RPD=4.95

  
-----  
Brian K. McKee  
Laboratory Director

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

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

Lab. ID #: 1438.1-.14  
Sample Rec'd: 04/05/94  
Analysis Start: 04/06/94  
Analysis Comp: 04/06/94

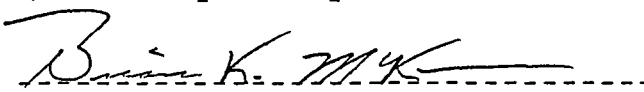
Analysis: 418.1 (TPH)  
Matrix: Soil  
Analyst: S. Hubbard  
Ext. Meth: Sonc.

|                   |           |
|-------------------|-----------|
| NJDEPE UST Reg.#: | 192486-28 |
| Closure #:        | C-93-3675 |
| NJDEPE Case #:    |           |
| Location #:       | 3027      |

| Lab ID. | Description                       | %Solid | Result<br>(mg/Kg) | MDL |
|---------|-----------------------------------|--------|-------------------|-----|
| 1438.13 | Site M, E. WALL OF FILL, OVA=ND * | 96     | 13300.            | 140 |
| 1438.14 | Site N, DUPLICATE, OVA= ND        | 94     | 15.4              | 3.3 |
|         |                                   |        |                   |     |
|         |                                   |        |                   |     |
|         |                                   |        |                   |     |
|         |                                   |        |                   |     |
|         |                                   |        |                   |     |
|         |                                   |        |                   |     |
|         |                                   |        |                   |     |
|         |                                   |        |                   |     |
|         |                                   |        |                   |     |
|         |                                   |        |                   |     |
|         |                                   |        |                   |     |
| M. Bl.  | Method Blank                      | 100    | ND                | 3.3 |

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

1438.4Dup.=123%, 1438.4Spike= 90%, 1438.4Spike Dup.=100%, RPD=4.95

  
-----  
Brian K. McKee  
Laboratory Director

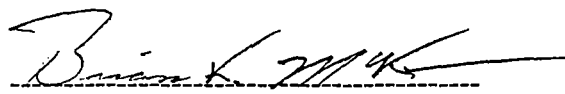
**Report of Analysis**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEPE Certification # 13461**

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

Lab. ID #: 1438.1-.14  
Sample Rec'd: 04/05/94  
Analysis Start: 04/06/94  
Analysis Comp: 04/06/94

Analysis: Munsel

| Lab ID# | Soil Color                 |
|---------|----------------------------|
| 1438.1  | 2.5Y 4/3 Olive Brown       |
| 1438.2  | 2.5Y 6/6 Olive Yellow      |
| 1438.3  | 2.5Y 5/6 Light Olive Brown |
| 1438.4  | 2.5Y 5/6 Light Olive Brown |
| 1438.5  | 2.5Y 5/6 Light Olive Brown |
| 1438.6  | 2.5Y 5/6 Light Olive Brown |
| 1438.7  | 2.5Y 4/4 Olive Brown       |
| 1438.8  | 2.5Y 5/6 Light Olive Brown |
| 1438.9  | 2.5Y 5/6 Light Olive Brown |
| 1438.10 | 2.5Y 5/6 Light Olive Brown |
| 1438.11 | 2.5Y 5/6 Light Olive Brown |
| 1438.12 | 2.5Y 5/6 Light Olive Brown |
| 1438.13 | 2.5Y 2.5/1 Black           |
| 1438.14 | 2.5Y 5/4 Light Olive Brown |
|         |                            |
|         |                            |
|         |                            |
|         |                            |
|         |                            |
|         |                            |
|         |                            |
|         |                            |
|         |                            |

  
\_\_\_\_\_  
Brian K. McKee  
Laboratory Director

P.O. #: PWS-007

Chain of Custody

|                             |  |                                            |  |                                 |  |                     |  |                     |  |
|-----------------------------|--|--------------------------------------------|--|---------------------------------|--|---------------------|--|---------------------|--|
| Project #: <u>Q-93-3675</u> |  | Sampler: <u>Cute Inc. / C. Appleby DPW</u> |  | Date / Time: <u>4-5-94 11AM</u> |  | Analysis Parameters |  | Start:              |  |
| Customer: <u>DPW</u>        |  | Site Name: <u>Bldg. 3007</u>               |  |                                 |  |                     |  | Finish:             |  |
| Phone: <u>X 26224</u>       |  | Closure #: <u>C-93-3675</u>                |  |                                 |  |                     |  | Preservation Method |  |

| Lab Sample ID Number | Date/Time   | Customer Sample Location/ID Number | Sample Matrix | # of Bottles | TPHC | Monsel | o/s Solid | PVA | Remarks                     |
|----------------------|-------------|------------------------------------|---------------|--------------|------|--------|-----------|-----|-----------------------------|
| 1438.1               | 4-5-94 1240 | Site A 2'-2.5'                     | Soil          | 1            | X    | X      | X         | ND  |                             |
| .2                   | 1242        | B 2'-2.5'                          |               | 1            | X    | X      | X         | ND  |                             |
| .3                   | 1233        | C 5'-5.5'                          |               | 1            | X    | X      | X         | ND  |                             |
| .4                   | 1232        | D 5'-5.5'                          |               | 1            | X    | X      | X         | ND  |                             |
| .5                   | 1231        | E 5'-5.5'                          |               | 1            | X    | X      | X         | ND  |                             |
| .6                   | 1238        | F 5'-5.5'                          |               | 1            | X    | X      | X         | ND  | Samples kept < 4°C          |
| .7                   | 1237        | G 5'-5.5'                          |               | 1            | X    | X      | X         | ND  | - Backfilled                |
| .8                   | 1234        | H 5'-5.5'                          |               | 1            | X    | X      | X         | ND  | ESS 4g Jars                 |
| .9                   | 1223        | I 2'-2.5'                          |               | 1            | X    | X      | X         | ND  | w/ Kflon Liner              |
| .10                  | 1230        | J 5'-Wall of Fill                  |               | 1            | X    | X      | X         | ND  | own-51903 - Calibrate at    |
| .11                  | 1228        | K Pit Bottom of Fill               |               | 1            | X    | X      | X         | ND  | Gas Select-300 (methane) w/ |

|                                                |                                    |                                                  |                                   |                                       |
|------------------------------------------------|------------------------------------|--------------------------------------------------|-----------------------------------|---------------------------------------|
| Relinquished By (signature): <u>C. Appleby</u> | Date / Time: <u>4-5-94 1300hrs</u> | Received By (signature): <u>Sarah J. Hubbard</u> | Shipped By: <u>C. Appleby DPW</u> | <u>95 PPM methane - Reading 1 ppm</u> |
| Relinquished By (signature):                   | Date / Time:                       | Received For Lab by (signature):                 | Date / Time:                      |                                       |

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



P.O. #: PWS-007

## Chain of Custody

SAI-ENV COC Form 01 Page 2 of 2 Pages Rev. A Date: 02 Apr 93

April 6, 1994 *Frank J. Hubbard*  
0848

Blank

40.75

103 MV

81.5

207 MV

163

413 MV

1438.1

112 MV

1438.2

11 MV

1438.3

9 MV

1438.4

9 MV

1438.4 Dup

11 MV

1438.4 SpK

73 MV

1438.4 <sup>Dup</sup>  
SpK

80 MV

1438.5

10 MV

1438.6

7 MV

1438.7

38 MV

1438.8

5 MV

1438.9

51 MV

1438.10

11 MV

1438.11

147 MV

1438.12

9 MV

1438.13 (dil 7)

219 MV

1438.14

11 MV

1439.1 (dil 7) 157

1439.2 (dil 7) 143

1439.3 (dil 7) 127

PHC Conformance/Non-conformance Summary Report

No Yes

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

☒ ☐

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

☐ ☒

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

☐ ☒

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

☐ ☒

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

☐ ☒

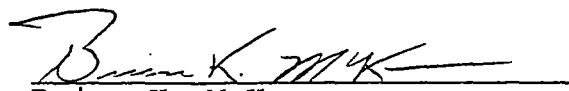
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)

☐ ☒

Comments:

Laboratory Authentication Statement

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

  
Brian K. McKee  
Laboratory Manager



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

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

Lab. ID #: 1441.1-.3  
Sample Rec'd: 04/07/94  
Analysis Start: 04/08/94  
Analysis Comp: 04/08/94

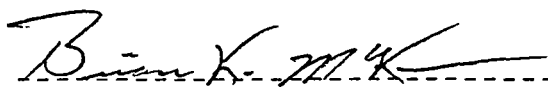
Analysis: 418.1 (TPH)  
Matrix: Soil  
Analyst: S. Hubbard  
Ext. Meth: Sonc.

|                   |             |
|-------------------|-------------|
| NJDEPE UST Reg.#: | 192486-28   |
| Closure #:        | C-93-3675.2 |
| NJDEPE Case #:    |             |
| Location #:       | 3027        |

| Lab ID. | Description             | %Solid | Result<br>(mg/Kg) | MDL |
|---------|-------------------------|--------|-------------------|-----|
| 1441.1  | Site O, 4'-4.5' hNu= ND | 85     | 310.              | 9.9 |
| 1441.2  | Site P, 4'-4.5' hNu= ND | 86     | 65.1              | 5.0 |
| 1441.3  | Site Q, 4'-4.5' hNu= ND | 87     | 15.2              | 5.0 |
|         |                         |        |                   |     |
|         |                         |        |                   |     |
|         |                         |        |                   |     |
|         |                         |        |                   |     |
|         |                         |        |                   |     |
|         |                         |        |                   |     |
|         |                         |        |                   |     |
|         |                         |        |                   |     |
|         |                         |        |                   |     |
| M. Bl.  | Method Blank            | 100    | ND                | 3.3 |

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

1441.3Dup.= 84%, 1441.3Spike=152%, 1441.3Spike Dup.=155%, RPD=1.5

  
-----  
Brian K. McKee  
Laboratory Director

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

Lab. ID #: 1441.1-.3  
Sample Rec'd: 04/07/94  
Analysis Start: 04/08/94  
Analysis Comp: 04/08/94

[illegible]

Brian K. McK

Brian K. McKee  
Laboratory Director

4/11/94 9:44 AM



P.O. #: PWS-007

[illegible]

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

April 8, 1994 Sarah J. Woodward

6666.2

Blank

40.75

152 MV

81.5

210 MV

163

417 MV

1441.1

67 MV

1441.2

28 MV

1441.3

6 MV

1441.3 Dup

5 MV

1441.3 Spk

74 MV

1441.3 Dup Spk

75 MV

PRINTED IN U.S.A.

## 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.

— N/A

5. Extraction holding time met.

(If not met, list number of days exceeded for each sample)

— ✓

6. Analysis holding time met.

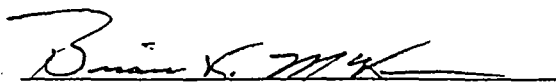
(If not met, list number of days exceeded for each sample)

— ✓

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

### Laboratory Authentication Statement

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Brian K. McKee  
Laboratory Manager

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

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

Lab. ID #: 1454.1-.4  
Sample Rec'd: 04/21/94  
Analysis Start: 04/22/94  
Analysis Comp: 04/22/94

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

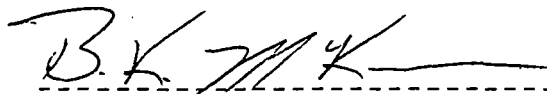
NJDEPE UST Reg.#: 192486-28  
Closure #: 93-3675  
NJDEPE Case #:  
Location #: Bldg. 3027

| Lab ID. | Description    | %Solid | Result | MDL<br>(mg/Kg) |
|---------|----------------|--------|--------|----------------|
| 1454.1  | Site R OVA= ND | 94     | 81.3   | 3.3            |
| 1454.2  | Site S OVA= ND | 94     | ND     | 3.3            |
| 1454.3  | Site T OVA= ND | 94     | ND     | 3.3            |
| 1454.4  | Site U OVA= ND | 93     | 493.   | 5.0            |
|         |                |        |        |                |
|         |                |        |        |                |
|         |                |        |        |                |
|         |                |        |        |                |
|         |                |        |        |                |
|         |                |        |        |                |
|         |                |        |        |                |
|         |                |        |        |                |
| M. Bl.  | Method Blank   | 100    | ND     | 3.3            |

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

\* = Silica Gel Added, NA = Not Applicable

1453.2dup=NA, 1453.2spike= 96% 1453.2spike dup= 96% RPD= 0%



Brian K. McKee  
Laboratory Director

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

Lab. ID #: 1454.1-.4  
Sample Rec'd: 04/21/94  
Analysis Start: 04/22/94  
Analysis Comp: 04/22/94

[illegible]

  
Brian K. McKee  
Laboratory Director

P.O. #: PWS-007

Chain of Custody

|                            |  |                                                                                     |  |                          |  |                     |  |  |  |                     |  |
|----------------------------|--|-------------------------------------------------------------------------------------|--|--------------------------|--|---------------------|--|--|--|---------------------|--|
| Project #: C-93-3675       |  | Sampler: C. Appley Inc.                                                             |  | Date / Time: 4-21-94 2PM |  | Analysis Parameters |  |  |  | Start:              |  |
| Customer: C. Appley DPW-EV |  | Site Name: Post Remediation Sample, Bldg. 3027, Unit # 192486-28, Closure C-43-3675 |  |                          |  |                     |  |  |  | Finish:             |  |
| Phone: X 26224             |  |                                                                                     |  |                          |  |                     |  |  |  | Preservation Method |  |

| Lab Sample ID Number | Date/Time    | Customer Sample Location/ID Number | Sample Matrix | # of Bottles | TPHC | % Solids | Munsell |  |  |  | DVA Res. | Remarks                       |
|----------------------|--------------|------------------------------------|---------------|--------------|------|----------|---------|--|--|--|----------|-------------------------------|
| 1454.1               | 4-21-94 1415 | Site R                             | Soil          | 1            | X    | X        | X       |  |  |  | ND       | A                             |
| 1454.2               | 4-21-94 1414 | Site S                             | ↓             | 1            | X    | X        | X       |  |  |  | ND       |                               |
| 1454.3               | 4-21-94 1413 | Site T                             | ↓             | 1            | X    | X        | X       |  |  |  | ND       |                               |
| 1454.4               | 4-21-94 1417 | Site U                             | ↓             | 1            | X    | X        | X       |  |  |  | ND       |                               |
|                      |              |                                    |               |              |      |          |         |  |  |  |          | DVA -1 Soil Assembly          |
|                      |              |                                    |               |              |      |          |         |  |  |  |          | Calibrated 4/21/94 1345hrs    |
|                      |              |                                    |               |              |      |          |         |  |  |  |          | 4/95 PPM Methane + Zero Air   |
|                      |              |                                    |               |              |      |          |         |  |  |  |          | Read 100 PPM @ 500 GMS        |
|                      |              |                                    |               |              |      |          |         |  |  |  |          | Select = 3.00 CH <sub>4</sub> |

|                             |             |                         |             |
|-----------------------------|-------------|-------------------------|-------------|
| Relinquished By (signature) | Date / Time | Received By (signature) | Shipped By: |
|                             |             |                         | Hand,       |

|                             |              |                                  |              |
|-----------------------------|--------------|----------------------------------|--------------|
| Relinquished By (signature) | Date / Time  | Received for Lab by (signature): | Date / Time  |
| <i>[Signature]</i>          | 4-21-94 1635 | <i>Sarah J. Vukobratovic</i>     | 4/21/94 1545 |

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

Attached



April 22, 1994 1515

Spidey Wulfe

Blank 0 MV

40.75 101 MV

81.5 205 MV

163 410 MV

1453.1 ND

1453.2 ND

1453.2 ND Dup

1453.2 61 Spk

1453.2 64 Dup Spk

1453.3 ND

1454.1 57

1454.2 ND

1454.3 ND

1454.4 230 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.

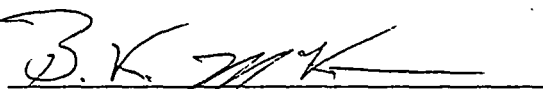
(If not met, list number of days exceeded for each sample)

— ✓

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.

  
Brian K. McKee  
Laboratory Manager