United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 2707
Charles Wood

NJDEP UST Registration No. 81515-51

April 2001

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 2707

CHARLES WOOD
NJDEP UST REGISTRATION NO. 81515-51

APRIL 2001

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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PROJECT NO. 4936-127

2707.DOC

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UST Closure

On August 26, 1998, a stainless steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) underground storage tank procedures at the Charles Wood area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 81515-51 (Fort Monmouth ID No. 2707), was located west of Building 2707. UST No. 81515-51 was a 1,000-gallon acetone UST.

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*. The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. No holes or punctures were noted in the UST and no evidence of potentially contaminated soils was observed surrounding the tank. A VOA analysis (EPA Method 8260) was completed on all soil samples and all known compounds searched for in the analysis were not detected. Groundwater was not encountered.

Site Restoration

Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with crushed stone, sand, and native backfill and restored to its original condition.

Conclusions and Recommendations

Based on the post-excavation soil sampling results, soils with VOA concentrations exceeding the NJDEP soil cleanup criteria, do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 81515-51 at Building 2707.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 81515-51, was closed at Building 2707 at the Charles Wood area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on August 26, 1998. Refer to site location map on Figure 1. This report presents the results of the Department of Public Works (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP. The UST was a stainless steel 1,000-gallon tank containing acetone.

Decommissioning activities for UST No. 81515-51 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. The decommissioning activities were conducted by DPW personnel who are registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 81515-51 proceeded under the approval of the NJDEP Bureau of Federal Case Management (NJDEP-BFCM). The Standard Reporting Form and signed Site Assessment Summary form for UST No. 81515-51 are included in Appendices A and B, respectively.

Based on inspecting the UST, field screening of subsurface soils and groundwater, and reviewing analytical results of 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 Versar, to assist the United States Army Directorate of Public Works (DPW) in complying with the NJDEP regulations. The applicable NJDEP 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. October 1990 and revisions dated November 1, 1991).

This report was prepared using information collected 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.

1.2 SITE DESCRIPTION

Building 2707 is located in the Charles Wood area of the Fort Monmouth Army Base. UST No. 81515-51 was located west of Building 2707 and appurtenant cast iron piping ran approximately five (5) feet east from the excavation to Building 2707. 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 2707. 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 (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. Over 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the 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-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. Building 2707 is located approximately 400 feet south of an unnamed stream that runs from east to west through the Charles Wood area. Based on the Charles Wood area topography, the groundwater flow in the area of Building 2707 is anticipated to be to the north.

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

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. No free product was present in the piping and the UST. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually for evidence of contamination. No evidence of contamination was observed. Soil screening was also performed along the piping run associated with the UST closure. No contamination was noted anywhere along the piping length. Groundwater was not encountered. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported to Mazza and Sons, Inc., Metal Recyclers. See Appendix C for a copy of the UST disposal certificate. The transportation of the UST was in compliance with all applicable regulations and laws.

The UST was labeled prior to transport with the following information:

- Site of origin
- Contact person
- NJDEP UST Facility ID number
- Former contents

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on VOA analysis results from the post-excavation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.

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 document *Interim Closure Requirements for Underground Storage Tank Systems* (October 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:

- Subsurface Evaluator: Charles Appleby
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (732) 532-6224
  NJDEP Certification No.: 2056

- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Daniel K. Wright
  Phone Number: (732) 532-4359
  NJDEP Company Certification No.: 13461

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom, did not exhibit any evidence of potential contamination. Groundwater was not encountered.

2.3 SOIL SAMPLING

On August 26, 1998, following the removal of the UST and associated piping, post-excavation soil samples A, B, C, D, E, and DUP B were collected from a total of five (5) locations of the UST excavation. Samples A, B, and DUP B were collected along the centerline at a depth of 10.0 feet bgs. Sidewall samples C and D were collected at a depth of 9.5 feet bgs. Sample E was collected along the former piping length of the excavation, which was approximately five (5) feet in length. The piping sample was collected at a depth of 3.0 feet bgs. All samples were analyzed for volatile organics.

DPW personnel in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual performed the site assessment. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using NJDEP *Field Sampling Procedures Manual* (1992) standard sampling procedures. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST, post-excavation soil samples were collected on August 26, 1998, from a total of five (5) locations. All samples were analyzed for volatile organics. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria (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 locations are shown on Figure 4. The analytical data package is provided in Appendix D.

All post-excavation soil samples collected on August 26, 1998, from the UST excavation and from below piping associated with the UST contained concentrations of volatile organics below the NJDEP soil cleanup criteria. Samples contained non-detectable levels.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 2707 were below the NJDEP soil cleanup criteria.

Based on the post-excavation sampling results, soils with volatile organic concentrations exceeding the NJDEP soil cleanup criteria, do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 81515-51 at Building 2707.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 2707, CHARLES WOOD AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
A	8/26/98	9/2/98	Soil	Post-Excavation	VOA	NJDEP 8260
B	8/26/98	9/2/98	Soil	Post-Excavation	VOA	NJDEP 8260
C	8/26/98	9/2/98	Soil	Post-Excavation	VOA	NJDEP 8260
D	8/26/98	9/2/98	Soil	Post-Excavation	VOA	NJDEP 8260
E	8/26/98	9/2/98	Soil	Post-Excavation	VOA	NJDEP 8260
DUP B	8/26/98	9/2/98	Soil	Post-Excavation	VOA	NJDEP 8260

Note:
* TPHC Total Petroleum Hydrocarbons

Table 2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL

Date Sampled: 8/26/98 Location: 2707 Lab Sample ID: 3829.01(Sample A)

CONCENTRATION UNITS:
(ug/L or ug/Kg)

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	1800	U	NA	NA
107131	Acrylonitrile	1800	U	1000	5000
75650	tert-Butyl alcohol	3300	U	NA	NA
1634044	Methyl-tert-Butyl ether	760	U	NA	NA
108203	Di-isopropyl ether	510	U	NA	NA
	Dichlorodifluoromethane	1000	U	NA	NA
74-87-3	Chloromethane	250	U	520000	1000000(d)
75-01-4	Vinyl Chloride	760	U	2000	7000
74-83-9	Bromomethane	510	U	79000	1000000(d)
75-00-3	Chloroethane	760	U	NA	NA
75-69-4	Trichlorofluoromethane	510	U	NA	NA
75-35-4	1, 1-Dichloroethene	250	U	8000	150000
67-64-1	Acetone	510	U	1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	250	U	NA	NA
75-09-2	Methylene Chloride	510	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	510	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	250	U	570000	1000000(d)
108-05-4	Vinyl Acetate	760	U	NA	NA
78-93-3	2-Butanone	760	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	250	U	79000	1000000(d)
67-66-3	Chloroform	250	U	19000(k)	28000(k)
75-55-6	1,1,1-Trichloroethane	250	U	NA	NA
56-23-5	Carbon Tetrachloride	510	U	2000(k)	4000(k)
71-43-2	Benzeze	250	U	3000	13000
107-06-2	1,2-Dichloroethane	510	U	6000	24000

Table 2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL

Date Sampled: 8/26/98 Location: 2707 Lab Sample ID: 3829.01(Sample A)

CONCENTRATION UNITS:
(ug/L or ug/Kg)

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
79-01-6	Trichloroethene	250	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	250	U	10000	43000
75-27-4	Bromodichloromethane	250	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	510	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	250	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	510	U	1000000(d)	1000000(d)
108-88-3	Toluene	250	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	510	U	NA	NA
79-00-5	1,1,2-Trichloroethane	510	U	22000	420000
127-18-4	Tetrachloroethene	250	U	4000(k)	6000(k)
591-78-6	2-Hexanone	510	U	NA	NA
126-48-1	Dibromochloromethane	510	U	NA	NA
108-90-7	Chlorobenzene	250	U	37000	680000
100-41-4	Ethylbenzene	510	U	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	760	U	NA	NA
1330-20-7	o-Xylene	510	U	NA	NA
100-42-5	Styrene	510	U	23000	97000
75-25-2	Bromoform	510	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	510	U	34000	70000(k)

Table 2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL

Date Sampled: 8/26/98 Location: 2707 Lab Sample ID: 3829.02(Sample B)

CONCENTRATION UNITS:
(ug/L or ug/Kg)

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	1600	U	NA	NA
107131	Acrylonitrile	1600	U	1000	5000
75650	tert-Butyl alcohol	3100	U	NA	NA
1634044	Methyl-tert-Butyl ether	710	U	NA	NA
108203	Di-isopropyl ether	470	U	NA	NA
	Dichlorodifluoromethane	940	U	NA	NA
74-87-3	Chloromethane	240	U	520000	1000000(d)
75-01-4	Vinyl Chloride	710	U	2000	7000
74-83-9	Bromomethane	470	U	79000	1000000(d)
75-00-3	Chloroethane	710	U	NA	NA
75-69-4	Trichlorofluoromethane	470	U	NA	NA
75-35-4	1, 1-Dichloroethene	240	U	8000	150000
67-64-1	Acetone	470	U	1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	240	U	NA	NA
75-09-2	Methylene Chloride	470	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	470	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	240	U	570000	1000000(d)
108-05-4	Vinyl Acetate	710	U	NA	NA
78-93-3	2-Butanone	710	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	240	U	79000	1000000(d)
67-66-3	Chloroform	240	U	19000(k)	28000(k)
75-55-6	1,1,1-Trichloroethane	240	U	NA	NA
56-23-5	Carbon Tetrachloride	470	U	2000(k)	4000(k)
71-43-2	Benzeze	240	U	3000	13000
107-06-2	1,2-Dichloroethane	470	U	6000	24000

Table 2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL

Date Sampled: 8/26/98 Location: 2707 Lab Sample ID: 3829.02(Sample B)

CONCENTRATION UNITS:
(ug/L or ug/Kg)

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
79-01-6	Trichloroethene	240	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	240	U	10000	43000
75-27-4	Bromodichloromethane	240	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	470	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	240	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	470	U	1000000(d)	1000000(d)
108-88-3	Toluene	240	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	470	U	NA	NA
79-00-5	1,1,2-Trichloroethane	470	U	22000	420000
127-18-4	Tetrachloroethene	240	U	4000(k)	6000(k)
591-78-6	2-Hexanone	470	U	NA	NA
126-48-1	Dibromochloromethane	470	U	NA	NA
108-90-7	Chlorobenzene	240	U	37000	680000
100-41-4	Ethylbenzene	470	U	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	710	U	NA	NA
1330-20-7	o-Xylene	470	U	NA	NA
100-42-5	Styrene	470	U	23000	97000
75-25-2	Bromoform	470	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	470	U	34000	70000(k)

Table 2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL

Date Sampled: 8/26/98 Location: 2707 Lab Sample ID: 3829.03(Sample C)

CONCENTRATION UNITS:
(ug/L or ug/Kg)

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	1700	U	NA	NA
107131	Acrylonitrile	1700	U	1000	5000
75650	tert-Butyl alcohol	3200	U	NA	NA
1634044	Methyl-tert-Butyl ether	740	U	NA	NA
108203	Di-isopropyl ether	490	U	NA	NA
	Dichlorodifluoromethane	990	U	NA	NA
74-87-3	Chloromethane	250	U	520000	1000000(d)
75-01-4	Vinyl Chloride	740	U	2000	7000
74-83-9	Bromomethane	490	U	79000	1000000(d)
75-00-3	Chloroethane	740	U	NA	NA
75-69-4	Trichlorofluoromethane	490	U	NA	NA
75-35-4	1, 1-Dichloroethene	250	U	8000	150000
67-64-1	Acetone	490	U	1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	250	U	NA	NA
75-09-2	Methylene Chloride	490	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	490	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	250	U	570000	1000000(d)
108-05-4	Vinyl Acetate	740	U	NA	NA
78-93-3	2-Butanone	740	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	250	U	79000	1000000(d)
67-66-3	Chloroform	250	U	19000(k)	28000(k)
75-55-6	1,1,1-Trichloroethane	250	U	NA	NA
56-23-5	Carbon Tetrachloride	490	U	2000(k)	4000(k)
71-43-2	Benzeze	250	U	3000	13000
107-06-2	1,2-Dichloroethane	490	U	6000	24000

Table 2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL

Date Sampled: 8/26/98 Location: 2707 Lab Sample ID: 3829.03(Sample C)

CONCENTRATION UNITS:
(ug/L or ug/Kg)

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
79-01-6	Trichloroethene	250	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	250	U	10000	43000
75-27-4	Bromodichloromethane	250	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	490	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	250	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	490	U	1000000(d)	1000000(d)
108-88-3	Toluene	250	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	490	U	NA	NA
79-00-5	1,1,2-Trichloroethane	490	U	22000	420000
127-18-4	Tetrachloroethene	250	U	4000(k)	6000(k)
591-78-6	2-Hexanone	490	U	NA	NA
126-48-1	Dibromochloromethane	490	U	NA	NA
108-90-7	Chlorobenzene	250	U	37000	680000
100-41-4	Ethylbenzene	490	U	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	740	U	NA	NA
1330-20-7	o-Xylene	490	U	NA	NA
100-42-5	Styrene	490	U	23000	97000
75-25-2	Bromoform	490	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	490	U	34000	70000(k)

Table 2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL

Date Sampled: 8/26/98 Location: 2707 Lab Sample ID: 3829.04(Sample D)

CONCENTRATION UNITS:
(ug/L or ug/Kg)

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	1600	U	NA	NA
107131	Acrylonitrile	1600	U	1000	5000
75650	tert-Butyl alcohol	2900	U	NA	NA
1634044	Methyl-tert-Butyl ether	670	U	NA	NA
108203	Di-isopropyl ether	450	U	NA	NA
	Dichlorodifluoromethane	890	U	NA	NA
74-87-3	Chloromethane	220	U	520000	1000000(d)
75-01-4	Vinyl Chloride	670	U	2000	7000
74-83-9	Bromomethane	450	U	79000	1000000(d)
75-00-3	Chloroethane	670	U	NA	NA
75-69-4	Trichlorofluoromethane	450	U	NA	NA
75-35-4	1, 1-Dichloroethene	220	U	8000	150000
67-64-1	Acetone	450	U	1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	220	U	NA	NA
75-09-2	Methylene Chloride	450	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	450	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	220	U	570000	1000000(d)
108-05-4	Vinyl Acetate	670	U	NA	NA
78-93-3	2-Butanone	670	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	220	U	79000	1000000(d)
67-66-3	Chloroform	220	U	19000(k)	28000(k)
75-55-6	1,1,1-Trichloroethane	220	U	NA	NA
56-23-5	Carbon Tetrachloride	450	U	2000(k)	4000(k)
71-43-2	Benzeze	220	U	3000	13000
107-06-2	1,2-Dichloroethane	450	U	6000	24000

Table 2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL

Date Sampled: 8/26/98 Location: 2707 Lab Sample ID: 3829.04(Sample D)

CONCENTRATION UNITS:
(ug/L or ug/Kg)

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
79-01-6	Trichloroethene	220	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	220	U	10000	43000
75-27-4	Bromodichloromethane	220	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	450	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	220	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	450	U	1000000(d)	1000000(d)
108-88-3	Toluene	220	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	450	U	NA	NA
79-00-5	1,1,2-Trichloroethane	450	U	22000	420000
127-18-4	Tetrachloroethene	220	U	4000(k)	6000(k)
591-78-6	2-Hexanone	450	U	NA	NA
126-48-1	Dibromochloromethane	450	U	NA	NA
108-90-7	Chlorobenzene	220	U	37000	680000
100-41-4	Ethylbenzene	450	U	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	670	U	NA	NA
1330-20-7	o-Xylene	450	U	NA	NA
100-42-5	Styrene	450	U	23000	97000
75-25-2	Bromoform	450	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	450	U	34000	70000(k)

Table 2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL

Date Sampled: 8/26/98 Location: 2707 Lab Sample ID: 3829.04(Sample E)

CONCENTRATION UNITS:
(ug/L or ug/Kg)

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	1900	U	NA	NA
107131	Acrylonitrile	1900	U	1000	5000
75650	tert-Butyl alcohol	3600	U	NA	NA
1634044	Methyl-tert-Butyl ether	820	U	NA	NA
108203	Di-isopropyl ether	550	U	NA	NA
	Dichlorodifluoromethane	1100	U	NA	NA
74-87-3	Chloromethane	270	U	520000	1000000(d)
75-01-4	Vinyl Chloride	880	U	2000	7000
74-83-9	Bromomethane	550	U	79000	1000000(d)
75-00-3	Chloroethane	880	U	NA	NA
75-69-4	Trichlorofluoromethane	550	U	NA	NA
75-35-4	1, 1-Dichloroethene	270	U	8000	150000
67-64-1	Acetone	550	U	1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	270	U	NA	NA
75-09-2	Methylene Chloride	550	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	550	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	270	U	570000	1000000(d)
108-05-4	Vinyl Acetate	880	U	NA	NA
78-93-3	2-Butanone	880	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	270	U	79000	1000000(d)
67-66-3	Chloroform	270	U	19000(k)	28000(k)
75-55-6	1,1,1-Trichloroethane	270	U	NA	NA
56-23-5	Carbon Tetrachloride	550	U	2000(k)	4000(k)
71-43-2	Benzeze	270	U	3000	13000
107-06-2	1,2-Dichloroethane	550	U	6000	24000

Table 2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL

Date Sampled: 8/26/98 Location: 2707 Lab Sample ID: 3892.05(Sample E)

CONCENTRATION UNITS:
(ug/L or ug/Kg)

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
79-01-6	Trichloroethene	270	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	270	U	10000	43000
75-27-4	Bromodichloromethane	270	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	550	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	270	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	550	U	1000000(d)	1000000(d)
108-88-3	Toluene	270	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	550	U	NA	NA
79-00-5	1,1,2-Trichloroethane	550	U	22000	420000
127-18-4	Tetrachloroethene	270	U	4000(k)	6000(k)
591-78-6	2-Hexanone	550	U	NA	NA
126-48-1	Dibromochloromethane	550	U	NA	NA
108-90-7	Chlorobenzene	270	U	37000	680000
100-41-4	Ethylbenzene	550	U	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	880	U	NA	NA
1330-20-7	o-Xylene	550	U	NA	NA
100-42-5	Styrene	550	U	23000	97000
75-25-2	Bromoform	550	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	550	U	34000	70000(k)

SOIL CLEANUP CRITERIA (MG/KG)

(LAST REVISED-7/11/96)

(A) CRITERIA ARE HEALTH BASED USING AN INCIDENTAL INGESTION EXPOSURE PATHWAY EXCEPT WHERE NOTED BELOW.

(B) CRITERIA ARE SUBJECT TO CHANGE BASED ON SITE SPECIFIC FACTORS (E.G., AQUIFER CLASSIFICATION, SOIL TYPE, NATURAL BACKGROUND, ENVIRONMENTAL IMPACTS, ETC.)

(C) HEALTH BASED CRITERION EXCEEDS THE 10,000 MG/KG MAXIMUM FOR TOTAL ORGANIC CONTAMINANTS.

(D) HEALTH BASED CRITERION EXCEEDS THE 1000 MG/KG MAXIMUM FOR TOTAL VOLATILE ORGANIC CONTAMINANTS

(E) CLEANUP STANDARD PROPOSAL WAS BASED ON NATURAL BACKGROUND.

(F) HEALTH BASED CRITERION IS LOWER THAN ANALYTICAL LIMITS; CLEANUP CRITERION BASED ON PRACTICAL QUANTITATION LEVEL.

(G) CRITERION HAS BEEN RECALCULATED BASED ON NEW TOXICOLOGICAL DATA.

(H) THE IMPACT TO GROUND WATER VALUES FOR INORGANIC CONSTITUENTS WILL BE DEVELOPED BASED UPON SITE SPECIFIC CHEMICAL AND PHYSICAL PARAMETERS.

(I) ORIGINAL CRITERION WAS INCORRECTLY CALCULATED AND HAS BEEN RECALCULATED.

(J) TYPOGRAPHICAL ERROR.

(K) CRITERIA BASED ON INHALATION EXPOSURE PATHWAY, WHICH YIELDED A MORE STRINGENT CRITERION THAN THE INCIDENTAL INGESTION EXPOSURE PATHWAY.

(L) NEW CRITERION DERIVED USING METHODOLOGY IN THE BASIS AND BACKGROUND DOCUMENT.

(M) CRITERION BASED ON ECOLOGICAL (PHYTOTOXICITY) EFFECTS.

(N) LEVEL OF THE HUMAN HEALTH BASED CRITERION IS SUCH THAT EVALUATION FOR POTENTIAL ENVIRONMENTAL IMPACTS ON A SITE BY SITE BASIS IS RECOMMENDED.

(O) LEVEL OF THE CRITERION IS SUCH THAT EVALUATION FOR POTENTIAL ACUTE EXPOSURE HAZARD IS RECOMMENDED.

(P) CRITERION BASED ON THE USEPA INTEGRATED EXPOSURE UPTAKE BIOKINETIC (IEUBK) MODEL UTILIZING THE DEFAULT PARAMETERS. THE CONCENTRATION IS CONSIDERED TO PROTECT 95% OF TARGET POPULATION (CHILDREN) AT A BLOOD LEVEL OF 10 UG/DL.

(Q) CRITERIA WAS DERIVED FROM A MODEL DEVELOPED BY THE SOCIETY FOR ENVIRONMENTAL GEOCHEMISTRY AND HEALTH (SEGH) AND WAS DESIGNED TO BE PROTECTIVE FOR ADULTS IN THE WORKPLACE.

(R) INSUFFICIENT INFORMATION AVAILABLE TO CALCULATE IMPACT TO GROUND WATER CRITERIA.

FIGURES

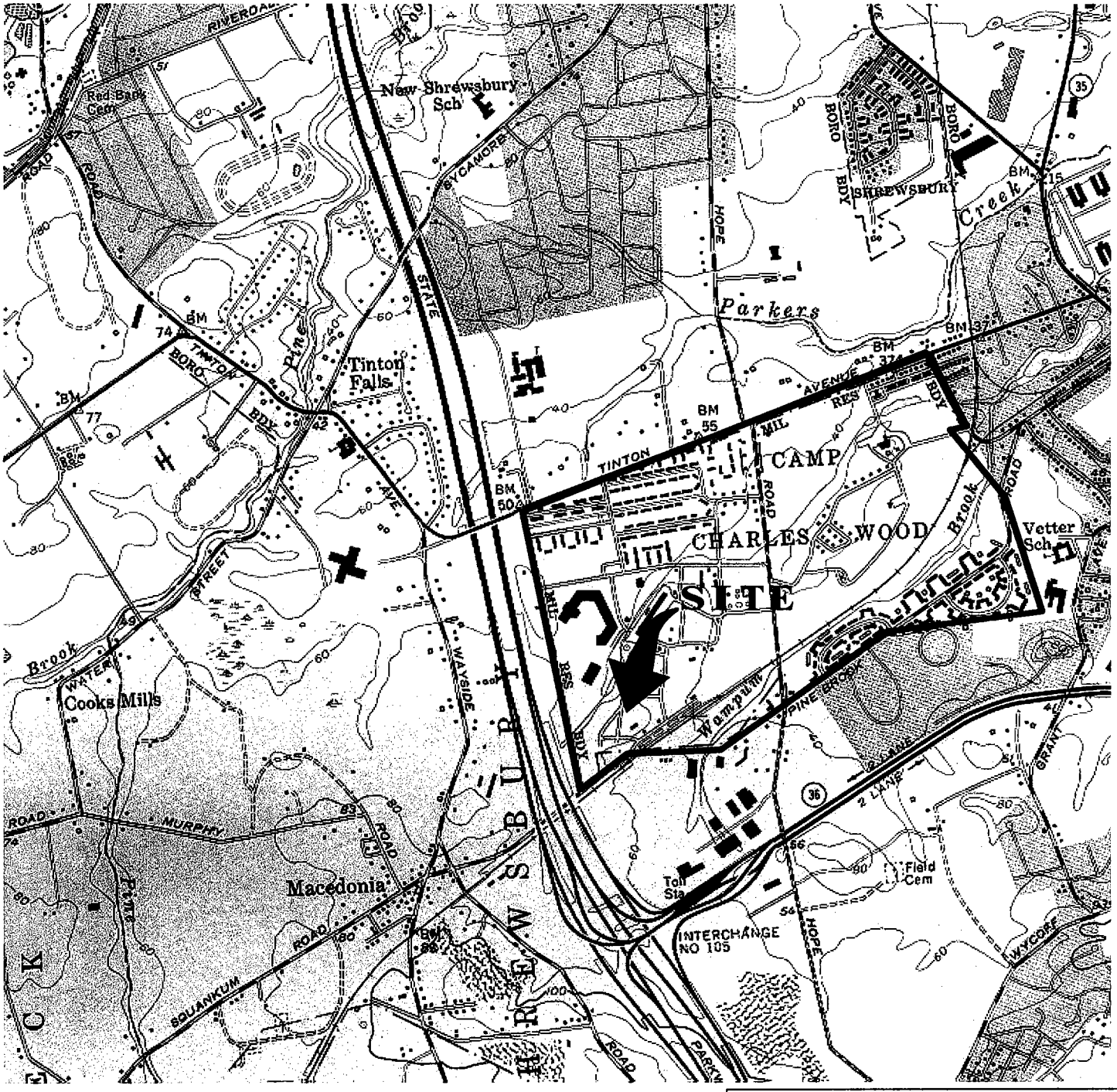


FIGURE 1

LOCATION MAP
Building 2707
Charles Wood
Fort Monmouth Army Base
Monmouth County, NJ

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

Scale: 1" = 2000'

Date: August 1998

LONG BRANCH, N. J.
40073-C8-TF-024
1954
PHOTOREVISED 1981
DMA 6164 I SE-SERIES V822

NEW JERSEY
QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

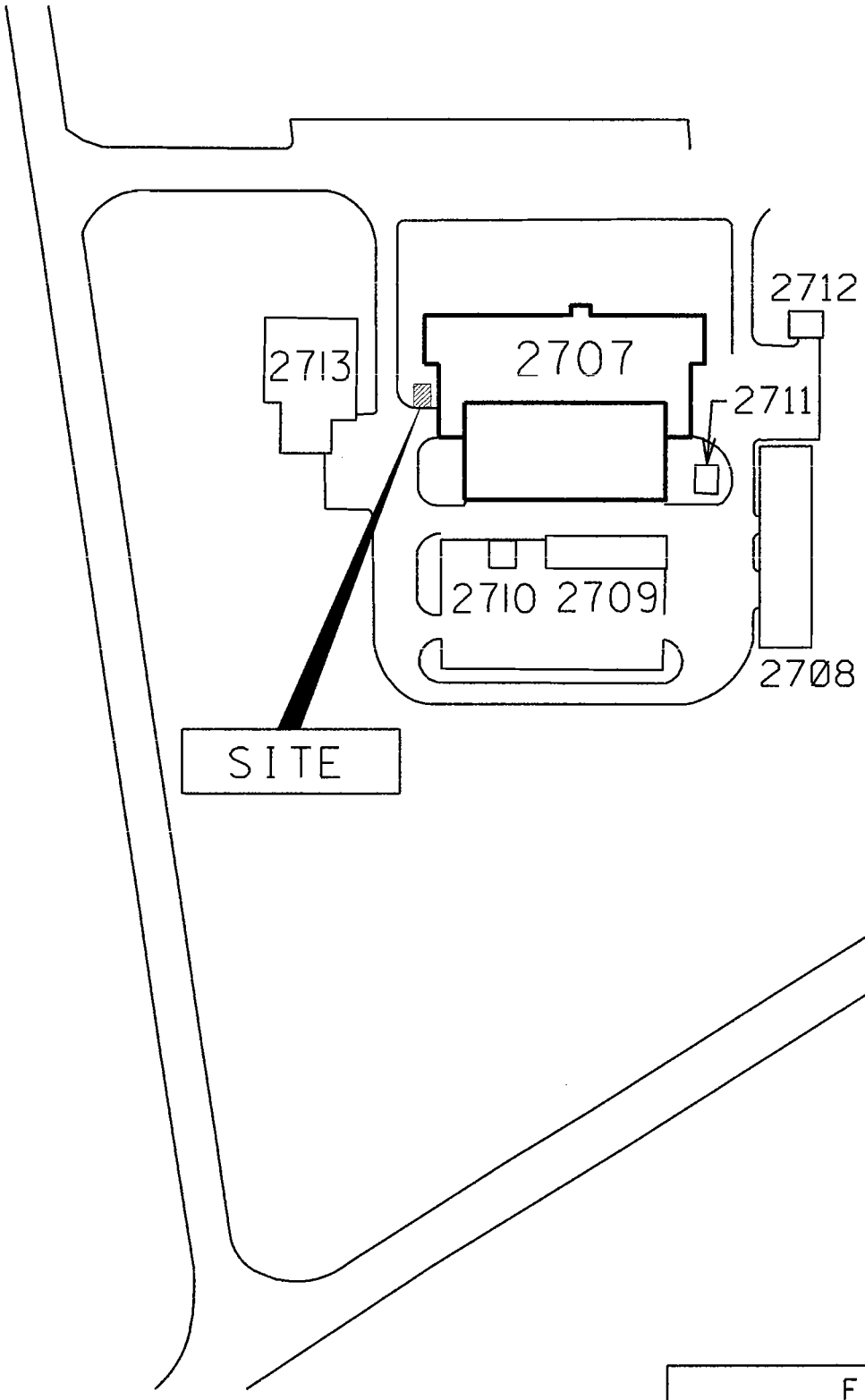


FIGURE 2
SITE MAP
BUILDING 2707
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=100'

DATE: AUGUST 1998

2707 FIG2

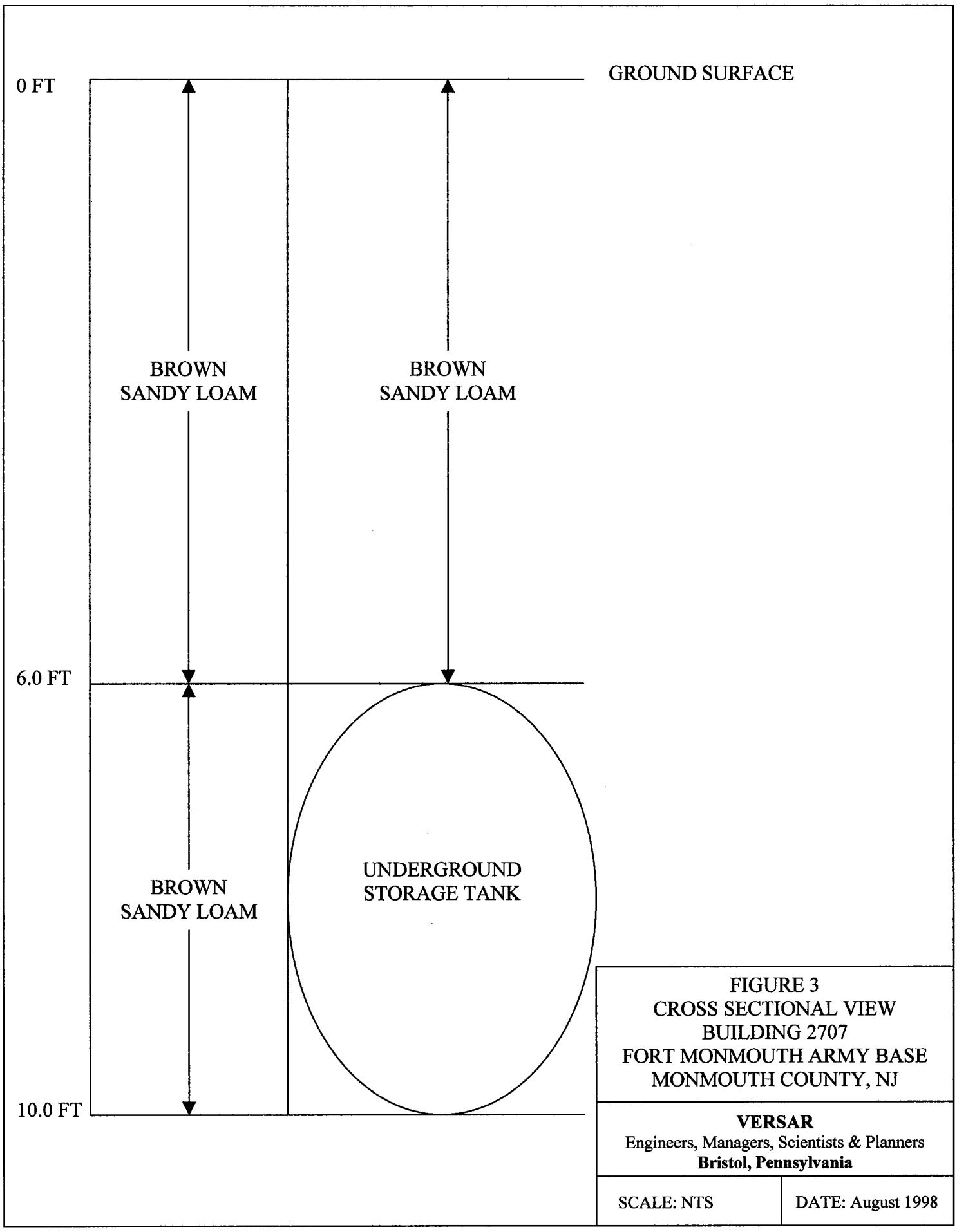
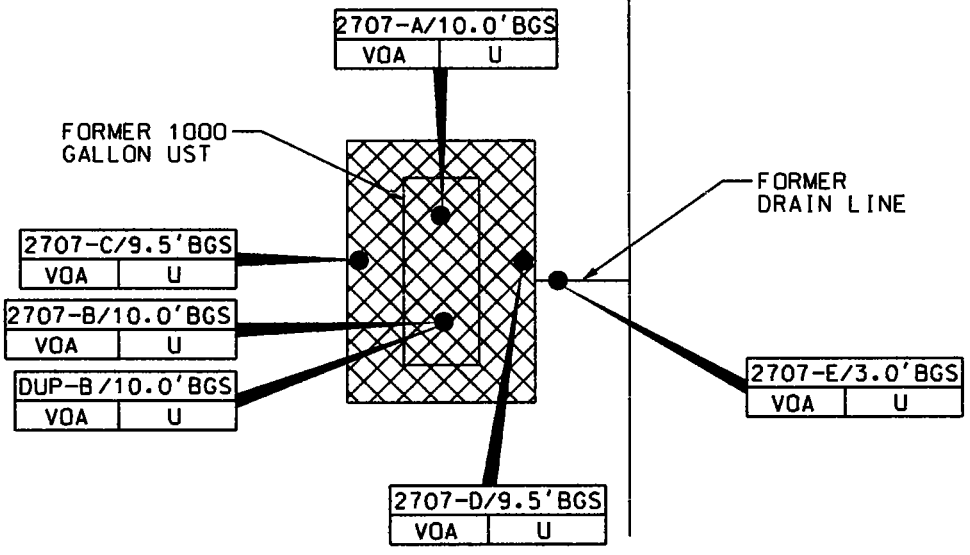


FIGURE 3
CROSS SECTIONAL VIEW
BUILDING 2707
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, Pennsylvania

SCALE: NTS | DATE: August 1998



LEGEND

- SOIL SAMPLE LOCATION (AUGUST 26, 1998)
- LIMIT OF EXCAVATION (AUGUST 26, 1998)

NOTES:

1. ALL RESULTS IN UG/KG.
2. U = COMPOUND SEARCHED FOR BUT NOT DETECTED
3. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
4. BGS = BELOW GROUND SURFACE

FIGURE 4
SOIL SAMPLING LOCATION MAP
BUILDING 2707
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=10'

DATE: AUGUST 1998

2707 FIG4

APPENDIX A

NJDEP-STANDARD REPORTING FORM

APPENDIX B

SITE ASSESSMENT SUMMARY

(12/97) **New Jersey Department of Environmental Protection**

Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name : U.S. Army Fort Monmouth New Jersey

Facility Street Address : Directorate of Public Works Building 173

Municipality: Oceanport County : Monmouth

Block: Lot(s): Telephone Number : 732-532-6224

B. Owner (RP)'s Name:

Street Address: City :

State: Zip: Telephone Number :

C. (Check as appropriate)

___ Site Investigation Report (SIR) $500 Fee

___ Remedial Investigation Report (RIR) $1000 Fee

_X_ NA – Federal Agreement

D. (Complete all that apply)

- Assigned Case Manager : Ian Curtis, Federal Case Manager
- UST Registration Number : 81515-51 (7 digits)
- Incident Report Number ___–___–___–_____–___ (10 or 12 digits)
  ___–___–___–_____–___
- Tank Closure Number : Federal Case Manager

E. Certification by the Subsurface Evaluator:

The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E .....Yes No

Name: Charles Appleby Signature: See signed subsurface removal log UST Cert. No.: 2056

Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: NA-U.S. Army

Firm Address: Directorate of Public Works Building 173 City: Fort Monmouth

State: NJ Zip: 07703 Telephone Number : 732-532-6224

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 et seq.)

F. Certification by the Responsible Party(ies) of the Facility:

The following certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:

1. For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or
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 a principal executive officer or ranking elected Official.

"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 responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Name (Print or Type): James Ott Title: Directorate of Public Works

Signature:

Company Name: U.S. Army Fort Monmouth Date:

US ARMY, SELFM-PW-EV
DAILY UST SUBSURFACE REMOVAL LOG

BLDG.#: 2707 REG.#: 81515 - 51 CLOSURE#: ~~BRAC Auth.~~ Fed Case Mgr
DATE: 8/26/98 TOA: 11Am TOD: 1130
GOV. SSE: C. Appleby NJDEP CERT.#: 2656
REMOVAL CONTRACTOR: ~~SMC Inc.~~ TVS
CLOSURE SUPERVISOR: Gary Durantino NJDEP CERT.#:
WEATHER: Hazy Hot Humid 90°F

ACTIVITY	YES / NO
THE SUPERVISOR (CLOSURE CERT.) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES	yes
THE SSE WAS ON-SITE DURING UST REMOVAL AND SITE SCREENING AND SAMPLING ACTIVITIES	yes
ALL ON-SITE PERSONNEL HAD TRAINING IAW ALL SAFETY REQUIREMENTS (E.G. 29CFR)	yes
A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR	NA
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	yes
A DISCHARGE WAS REPORTED TO THE NJDEP (609-292-7172), CASE# NA	
PHOTOS HAVE UST#, BLDG. #, DATE, TIME, NAME OF SSE AND DESCR. WRITTEN ON BACK	yes
GROUNDWATER WAS ENCOUNTERED AT NA FEET BG, A ~~SHEEN~~ GW (WAS/~~WAS NOT~~) OBSERVED ~~ON GW~~	NA
IF OVA/Hnu WAS USED: WAS IT CAL. AND FOUND TO BE OPERATIONAL (cal. data on COC)	yes
IF SAMPLES WERE TAKEN: COC, SCALED SITE MAP (VERT. SOIL HORIZONS AND PLOT PLAN)	yes
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	yes
ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA/FID RECORDED SITES IAW 7:26E-3.6 et seq.	
ALL PETROL. CONT. SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	NA
THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE GROUNDWATER)	yes
ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM	yes
THE FOLLOWING DOCUMENTS WERE ADDED TO THE PROJECT FOLDER TODAY: (CIRCLE EACH) SCRAP TICKET, CSE PERMIT, ACCIDENT REPORT, HAZ. WASTE MANIFEST, DAILY UST CLOSURE LOG, SCALED SITE MAP (SAMPLING), SRF-CLOSURE, CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN FILL TICKETS(IN YDS^3), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	

CHECK ALL BOXES, LEAVE NO BLANKS

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 and 7:26 et seq.. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment.

SIGNATURE: _____ DATE: 8/26/98

ca\ms\ust\removal\sitessls.doc

Depth of Excavation 10ft.

- Double Coated(** Stainless Steel UST.

* Moisture is detected by OVA.

** Double Wall did not Cover Top 10% of UST so did not Comply w/ Double wall Standard - Interstitial Space had Leyard Season and no Liquid was observed when removed.

SRF Sent 9/18/98

APPENDIX C

UST DISPOSAL CERTIFICATE

2707 - ACETONE TANK

MAZZA & SONS, INC.

Metal Recyclers
3230 Shafto Rd.
Tinton Falls, NJ
(908) 922-9292

NO. 262

DATE. 9-17-98

Customer's Name Tecom Vinnell

Address

	Weight	Price
Cast Iron		
Steel Turnings		51.20
Lt. Iron		
Copper #1		
Copper #2		

36680 LB
34120 LB
02560

Ck # 2100

	Weight	Price
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless TANK		
Battery		
TOTAL AMOUNT:		$ 51.20

Weigher _____ Customer _____

THIS CHECK IS DELIVERED FOR PAYMENT ON THE FOLLOWING ACCOUNTS.

DATE		AMOUNT	
TOTAL OF INVOICES			
LESS ___ % DISCOUNT			
LESS FREIGHT			
LESS			
TOTAL DEDUCTIONS			
AMOUNT OF CHECK			

2100

MAZZA & SONS, INC.
RECYCLING DIVISION
P.O. BOX 246
OAKHURST, NJ 07755

55-7233/2212

DATE 9/17/98

PAY TO THE ORDER OF Tecom Vinnell $ 87.20

Eighty seven & 20/100 DOLLARS

Sovereign Bank

MP

⑈002100⑈ ⑆221272332⑆000 109109928⑆

APPENDIX D

SOIL ANALYTICAL DATA PACKAGE

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-6224 FAX: (732)532-3484
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIROMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #98-0001/BLDG. 2707

BLDG. 2707/Acetone Tank

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
2707-A	3829.01	Soil	26-Aug-98 11:00	08/26/98
2707-B	3829.02	Soil	26-Aug-98 11:04	08/26/98
2707-C	3829.03	Soil	26-Aug-98 11:11	08/26/98
2707-D	3829.04	Soil	26-Aug-98 11:14	08/26/98
2707-E	3829.05	Soil	26-Aug-98 11:19	08/26/98
Dup.	3829.06	Soil	26-Aug-98	08/26/98
TB	3829.07	Soil	26-Aug-98	08/26/98

ANALYSIS:
FORT MONMOUTH ENVIROMENTAL LAB
VOA+15, % SOLIDS

10/15/98

Daniel Wright/Date
Laboratory Director

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

Table of Contents

Method Summary

NJDEP Method 8260

Gas Chromatographic Determination of Volatiles in Soil

A 50uL volume of Methanol Samples soil is added to 5mL aliquot of water. Surrogates and internal standards are added and the sample is placed on a purge and trap concentrator. The sample as purged and desorbed into a GC/MS system.

Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent solid, methanol volume and concentration.

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

	Indicate Yes, No, N/A
1. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	Yes
2. Retention times for chromatograms provided	Yes
3. GC/MS Tune Specifications	
a. BFB Meet Criteria	Yes
b. DFTPP Meet Criteria	N/A
4. GC/MS Tuning Frequency - Performed every 24 hours for 600 series and 12 hours for 8000 series	Yes
5. GC/MS Calibration - Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	Yes
6. GC/MS Calibration Requirements	
a. Calibration Check Compounds Meet Criteria	Yes
b. System Performance Check Compounds Meet Criteria	Yes
7. Blank Contamination - If yes, List compounds and concentrations in each blank:	No
a. VOA Fraction _____	
b. B/N Fraction _____	
c. Acid Fraction _____	
8. Surrogate Recoveries Meet Criteria	Yes
If not met, list those compounds and their recoveries which fall outside the acceptable range:	
a. VOA Fraction _____	
b. B/N Fraction _____	
c. Acid Fraction _____	
If not met, were the calculations checked and the results qualified as "estimated"?	___
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries which fall outside the acceptable range)	Yes
a. VOA Fraction _____	
b. B/N Fraction _____	
c. Acid Fraction _____	

GC/MS Analysis Conformance/Non-Conformance Summary (cont.)

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria — YES
(If not met, list those compounds which fall outside the acceptable range)
    a. VOA Fraction_____
    b. B/N Fraction_____
    c. Acid Fraction_____

11. Extraction Holding Time Met — NA

If not met, list number of days exceeded for each sample: ___
_____
_____

12. Analysis Holding Time Met — YES

If not met, list number of days exceeded for each sample: ___
_____
_____

Additional Comments:
_____
_____
_____

Laboratory Manager: _____ Date: 10/15/94

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA UST Assessment

Project No: 98-0001
Location: B.2707 ACETONE TANK
UST# 81575-51

Samplers Name / Company : Gary DiMartinis TVS

Analysis Parameters: TPHC | % SOLIDS | VOA+15 | VOA ID Number | OVA

Comments: * = Samples Kept <4 Celsius

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS	VOA+15	VOA ID Number	OVA	Remarks / Preservation Method
3829. 01	2707-A	8-26-98	1100	SOIL	2		X	X		ND	CENTER LINE @ 10.0'*
02	B		1104							ND	↓
03	C		1111							ND	SIDEWALL @ 9.5'
04	D		1114							ND	↓
05	E		1119							ND	Piping Run @ 3.0'
06	DUP		—	↓	↓					—	FIELD DUPLICATE
07	TB	↓	—	METHANOL	1		↓	↓		—	TRIP BLANK ↓

Note: OVA(#A51903) Calibrated With 95 ppm Methane & Zero Air @ 1045 on 8-26-98 by Gary DiMartinis

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	8-26-98 1530	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (X)Reduced, (_)Standard, (_)Screen / non-certified
Turnaround time: (X)Standard 4 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks: Dedicated Sampling Tools Used

print legibly

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

MDL : Method Detection Limit
J : Compound identified below detection limit
B : Compound in both sample and blank
D : Results from dilution of sample
U : Compound searched for but not detected

Volatiles

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

VBLK93

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK93

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V04524.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 0 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

VBLK93

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK93

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V04524.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 0 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
95-50-1	1,2-Dichlorobenzene	750	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

A

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.01

Sample wt/vol: 10.8 (g/ml) G Lab File ID: V04531.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 9.02 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3300	U
1634044	Methyl-tert-Butyl ether	760	U
108203	Di-isopropyl ether	510	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	760	U
74-83-9	Bromomethane	510	U
75-00-3	Chloroethane	760	U
75-69-4	Trichlorofluoromethane	510	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	510	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	510	U
156-60-5	trans-1,2-Dichloroethene	510	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	760	U
78-93-3	2-Butanone	760	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	510	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	510	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	510	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	510	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	510	U
79-00-5	1,1,2-Trichloroethane	510	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	510	U
126-48-1	Dibromochloromethane	510	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	510	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

A

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.01

Sample wt/vol: 10.8 (g/ml) G Lab File ID: V04531.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 9.02 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	760	U
1330-20-7	o-Xylene	510	U
100-42-5	Styrene	510	U
75-25-2	Bromoform	510	U
79-34-5	1,1,2,2-Tetrachloroethane	510	U
541-73-1	1,3-Dichlorobenzene	760	U
106-46-7	1,4-Dichlorobenzene	760	U
95-50-1	1,2-Dichlorobenzene	760	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.02

Sample wt/vol: 12.1 (g/ml) G Lab File ID: V04532.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 12.24 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1600	U
107131	Acrylonitrile	1600	U
75650	tert-Butyl alcohol	3100	U
1634044	Methyl-tert-Butyl ether	710	U
108203	Di-isopropyl ether	470	U
	Dichlorodifluoromethane	940	U
74-87-3	Chloromethane	240	U
75-01-4	Vinyl Chloride	710	U
74-83-9	Bromomethane	470	U
75-00-3	Chloroethane	710	U
75-69-4	Trichlorofluoromethane	470	U
75-35-4	1,1-Dichloroethene	240	U
67-64-1	Acetone	470	U
75-15-0	Carbon Disulfide	240	U
75-09-2	Methylene Chloride	470	U
156-60-5	trans-1,2-Dichloroethene	470	U
75-35-3	1,1-Dichloroethane	240	U
108-05-4	Vinyl Acetate	710	U
78-93-3	2-Butanone	710	U
	cis-1,2-Dichloroethene	240	U
67-66-3	Chloroform	240	U
75-55-6	1,1,1-Trichloroethane	240	U
56-23-5	Carbon Tetrachloride	470	U
71-43-2	Benzene	240	U
107-06-2	1,2-Dichloroethane	470	U
79-01-6	Trichloroethene	240	U
78-87-5	1,2-Dichloropropane	240	U
75-27-4	Bromodichloromethane	240	U
110-75-8	2-Chloroethyl vinyl ether	470	U
10061-01-5	cis-1,3-Dichloropropene	240	U
108-10-1	4-Methyl-2-Pentanone	470	U
108-88-3	Toluene	240	U
10061-02-6	trans-1,3-Dichloropropene	470	U
79-00-5	1,1,2-Trichloroethane	470	U
127-18-4	Tetrachloroethene	240	U
591-78-6	2-Hexanone	470	U
126-48-1	Dibromochloromethane	470	U
108-90-7	Chlorobenzene	240	U
100-41-4	Ethylbenzene	470	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.02

Sample wt/vol: 12.1 (g/ml) G Lab File ID: V04532.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 12.24 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	710	U
1330-20-7	o-Xylene	470	U
100-42-5	Styrene	470	U
75-25-2	Bromoform	470	U
79-34-5	1,1,2,2-Tetrachloroethane	470	U
541-73-1	1,3-Dichlorobenzene	710	U
106-46-7	1,4-Dichlorobenzene	710	U
95-50-1	1,2-Dichlorobenzene	710	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

C

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.03

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V04533.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 8.25 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1700	U
107131	Acrylonitrile	1700	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	740	U
108203	Di-isopropyl ether	490	U
	Dichlorodifluoromethane	990	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	740	U
74-83-9	Bromomethane	490	U
75-00-3	Chloroethane	740	U
75-69-4	Trichlorofluoromethane	490	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	490	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	490	U
156-60-5	trans-1,2-Dichloroethene	490	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	740	U
78-93-3	2-Butanone	740	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	490	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	490	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	490	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	490	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	490	U
79-00-5	1,1,2-Trichloroethane	490	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	490	U
126-48-1	Dibromochloromethane	490	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	490	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

C

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.03

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V04533.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 8.25 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	740	U
1330-20-7	o-Xylene	490	U
100-42-5	Styrene	490	U
75-25-2	Bromoform	490	U
79-34-5	1,1,2,2-Tetrachloroethane	490	U
541-73-1	1,3-Dichlorobenzene	740	U
106-46-7	1,4-Dichlorobenzene	740	U
95-50-1	1,2-Dichlorobenzene	740	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

D

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.04

Sample wt/vol: 11.7 (g/ml) G Lab File ID: V04534.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 3.74 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1600	U
107131	Acrylonitrile	1600	U
75650	tert-Butyl alcohol	2900	U
1634044	Methyl-tert-Butyl ether	670	U
108203	Di-isopropyl ether	450	U
	Dichlorodifluoromethane	890	U
74-87-3	Chloromethane	220	U
75-01-4	Vinyl Chloride	670	U
74-83-9	Bromomethane	450	U
75-00-3	Chloroethane	670	U
75-69-4	Trichlorofluoromethane	450	U
75-35-4	1,1-Dichloroethene	220	U
67-64-1	Acetone	450	U
75-15-0	Carbon Disulfide	220	U
75-09-2	Methylene Chloride	450	U
156-60-5	trans-1,2-Dichloroethene	450	U
75-35-3	1,1-Dichloroethane	220	U
108-05-4	Vinyl Acetate	670	U
78-93-3	2-Butanone	670	U
	cis-1,2-Dichloroethene	220	U
67-66-3	Chloroform	220	U
75-55-6	1,1,1-Trichloroethane	220	U
56-23-5	Carbon Tetrachloride	450	U
71-43-2	Benzene	220	U
107-06-2	1,2-Dichloroethane	450	U
79-01-6	Trichloroethene	220	U
78-87-5	1,2-Dichloropropane	220	U
75-27-4	Bromodichloromethane	220	U
110-75-8	2-Chloroethyl vinyl ether	450	U
10061-01-5	cis-1,3-Dichloropropene	220	U
108-10-1	4-Methyl-2-Pentanone	450	U
108-88-3	Toluene	220	U
10061-02-6	trans-1,3-Dichloropropene	450	U
79-00-5	1,1,2-Trichloroethane	450	U
127-18-4	Tetrachloroethene	220	U
591-78-6	2-Hexanone	450	U
126-48-1	Dibromochloromethane	450	U
108-90-7	Chlorobenzene	220	U
100-41-4	Ethylbenzene	450	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

D

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.04

Sample wt/vol: 11.7 (g/ml) G Lab File ID: V04534.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 3.74 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	670	U
1330-20-7	o-Xylene	450	U
100-42-5	Styrene	450	U
75-25-2	Bromoform	450	U
79-34-5	1,1,2,2-Tetrachloroethane	450	U
541-73-1	1,3-Dichlorobenzene	670	U
106-46-7	1,4-Dichlorobenzene	670	U
95-50-1	1,2-Dichlorobenzene	670	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

E

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.05

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V04535.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 11.99 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	820	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

E

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.05

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V04535.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 11.99 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U
541-73-1	1,3-Dichlorobenzene	820	U
106-46-7	1,4-Dichlorobenzene	820	U
95-50-1	1,2-Dichlorobenzene	820	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

DUP

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.06

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V04536.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 11.33 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	840	U
108203	Di-isopropyl ether	560	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	840	U
74-83-9	Bromomethane	560	U
75-00-3	Chloroethane	840	U
75-69-4	Trichlorofluoromethane	560	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	560	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	560	U
156-60-5	trans-1,2-Dichloroethene	560	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	840	U
78-93-3	2-Butanone	840	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	560	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	560	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	560	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	560	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	560	U
79-00-5	1,1,2-Trichloroethane	560	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	560	U
126-48-1	Dibromochloromethane	560	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	560	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

DUP

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.06

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V04536.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 11.33 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	840	U
1330-20-7	o-Xylene	560	U
100-42-5	Styrene	560	U
75-25-2	Bromoform	560	U
79-34-5	1,1,2,2-Tetrachloroethane	560	U
541-73-1	1,3-Dichlorobenzene	840	U
106-46-7	1,4-Dichlorobenzene	840	U
95-50-1	1,2-Dichlorobenzene	840	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

TB

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.07

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V04537.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 0 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

TB

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.07

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V04537.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 0 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
95-50-1	1,2-Dichlorobenzene	750	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

VBLK93

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK93

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V04524.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 0 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

A

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.01

Sample wt/vol: 10.8 (g/ml) G Lab File ID: V04531.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 9.02 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.02

Sample wt/vol: 12.1 (g/ml) G Lab File ID: V04532.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 12.24 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown hydrocarbon	14.24	1500	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

C

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.03

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V04533.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 8.25 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

D

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.04

Sample wt/vol: 11.7 (g/ml) G Lab File ID: V04534.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 3.74 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

E

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.05

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V04535.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 11.99 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

DUP

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.06

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V04536.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 11.33 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

TB

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3829 Location: B.2707 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3829.07

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V04537.D

Level: (low/med) MED Date Received: 08/26/98

% Moisture: not dec. 0 Date Analyzed: 09/02/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

		Indicate* Yes, No, N/A
1.	Cover Page, Title Page listing Lab Certification #, facility name & address, & data of report submitted	Y
2.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	Y
3.	Summary Table cross-referencing field ID #'s vs. Lab ID #'s Lab ID's submitted	Y
4.	Document bound, paginated and legible	Y
5.	Chain of Custody submitted	Y
6.	Samples submitted to lab within 48 hours of sample collection	Y
7.	Methodology Summary submitted	Y
8.	Results submitted on a dry weight basis	Y
9.	Method Detection Limits	Y
10.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	Y

Laboratory Manager or Environmental Consultant's Signature _____

Date 10/15/25

Laboratory Certification # 13461

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