

**United States Army**

Fort Monmouth, New Jersey

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

***Building 492  
Main Post-East Area***

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**NJDEP UST Registration No. 90010-59  
Dicar No. 97-05-15-1350-20**

**January 2000**

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

**BUILDING 492**

**MAIN POST-EAST AREA  
NJDEP UST REGISTRATION NO. 90010-59  
DICAR NO. 97-05-15-1350-20**

**JANUARY 2000**

**PREPARED FOR:**

**UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY  
DIRECTORATE OF PUBLIC WORKS  
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## EXECUTIVE SUMMARY

### UST Closure

On May 15, 1997, a steel underground storage tank (UST) was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) underground storage tank closure procedures at the Main Post-East area of the U S Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No 90010-59 (Fort Monmouth ID No 492), was located southeast of Building 492. UST No 90010-59 was a 1,000-gallon No 2 fuel oil UST. The fill port was located directly above the tank.

### 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. Following removal, the UST was inspected for corrosion holes. Numerous holes were noted in the UST. Soils at the location of the holes were dark in color and appeared to be contaminated. Based on the inspection of the UST, Directorate of Public Works (DPW) concluded that a discharge was associated with this UST. The NJDEP hotline was notified and the case was assigned DICAR No 97-05-15-1350-20. Approximately 5 cubic yards of potentially contaminated soil were removed from the excavated area and stored at the Fort Monmouth petroleum contaminated soil staging area. Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 206 31 mg/kg. Groundwater was encountered at 4 0 feet below ground surface and sheen was observed on groundwater.

All post excavation soil samples collected from the UST excavation at Building 492 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). 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.

In response to the observation of sheen on groundwater, two (2) groundwater samples were collected at Building 492. On November 6, 1999, and December 22, 1999, Building 492 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). All groundwater analytical results were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST  
No 90010-59 at Building 492

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## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No 90010-59, was closed at Building 492 at the Main Post-East area of U S Army Fort Monmouth, Fort Monmouth, New Jersey on May 15, 1997. Refer to the 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 steel 1,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 90010-59 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. DPW personnel who are registered and certified by the NJDEP for performing UST closure activities conducted the decommissioning activities. Closure of UST No. 90010-59 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. 90010-59 are included in Appendices A and B, respectively.

After removal of the potentially contaminated soil, the site was assessed. Based on inspecting the UST, field screening of remaining subsurface soils, and reviewing analytical results of soil samples and groundwater 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 U.S. Army 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 and groundwater investigation, are presented in the final section of this report.

## **1.2 SITE DESCRIPTION**

Building 492 is located in the Main Post-East area of the Fort Monmouth Army Base. UST No. 90010-59 was located southeast of Building 492 and appurtenant copper piping ran approximately eight (8) feet west from the excavation to Building 492. 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 492. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area. A geological map is provided on Figure 1A.

#### 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. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

#### Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard).

### Hydrogeology

The water table aquifer in the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore, the direction of shallow groundwater should be determined on a case-by-case basis.

Shallow groundwater is locally influenced within the Main Post 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 Main Post 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. This is consistent with lithologies observed in borings installed within the Main Post area, which primarily consisted of fine-to-medium grained sands, with occasional lenses or laminations of gravel silt and/or clay.

Building 492 is located approximately 400 feet north of Oceanport Creek, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 492 is anticipated to be to the south.

### **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

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

#### **1.4.1 General Procedures**

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

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

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 90 gallons of liquid from the UST and its associated piping were transported by Lionetti Oil Recovery Company to Lionetti Oil Recovery Company, Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. Numerous holes were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually for evidence of contamination. Potentially contaminated soils were observed. Approximately 5 cubic yards of potentially contaminated soil were removed, respectively from the excavated area. 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 encountered at 4.0 feet below ground surface and sheen was observed on groundwater. See Figure 3 for a cross-sectional view of the excavated area.

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

The steel tank was transported in compliance with all applicable regulations and laws to Mazza & Sons, Inc., Recycling Division. Refer to Appendix D for the UST disposal certificate and Appendix G for photographs of the UST.

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

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

## **1.6 MANAGEMENT OF EXCAVATED SOILS**

Based on visual observations, approximately 5 cubic yards of potentially contaminated soil were removed from the UST excavation. 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 soil staging area. Soils that did not exhibit signs of contamination were used as backfill following the removal of the UST. Groundwater was encountered at 4.0 feet below ground surface and sheen was observed on groundwater.

## **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. The Fort Monmouth DPW Environmental Office maintains all records of the Site Investigation activities.

The following Parties participated in Closure and Site Investigation Activities:

- Subsurface Evaluator: Charles Appleby  
Employer: U S Army, Fort Monmouth  
Phone Number: (908) 532-0989  
NJDEP Certification No: 2046
- Analytical Laboratory: U S Army Fort Monmouth Environmental Laboratory  
Contact Person: Daniel K. Wright  
Phone Number: (908) 532-4359  
NJDEP Company Certification No: 13461
- Hazardous Waste Hauler: Lorco Petroleum Services  
Contact Person: Richard Dirienzo  
Phone Number: (908) 721-0900

### **2.2 FIELD SCREENING/MONITORING**

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using visual observations to identify potentially contaminated material. Soil excavated from around the tank exhibited evidence of potential contamination. Soils were removed from the excavation until no evidence of contamination remained. Groundwater was encountered at 4.0 feet below ground surface and sheen was observed on groundwater.

## **2.3 SOIL SAMPLING**

On May 15, 1997, following the removal of the UST, associated piping, and all potentially contaminated soils, post-excavation soil samples A, B, C, D, E, F, G, and DUP D were collected from a total of seven (7) locations of the UST excavation. Sidewall samples A, B, C, D, and DUP D were collected at a depth of 3.5 feet bgs. Samples E and F were collected along the excavation floor at a depth of 6.0 feet bgs. Sample G was collected along the former piping length of the excavation, which was approximately eight (8) feet in length. The piping sample was collected at a depth of 1.0 feet bgs. All samples were analyzed for TPHC and total solids.

U.S. Army 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.

## **2.4 GROUNDWATER SAMPLING**

On November 6, 1999, and December 22, 1999, Building 492 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation*. Refer to Appendix F for the field sampling documentation.

### **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 on May 15, 1997 from a total of seven (7) locations. All samples were analyzed for TPHC and total solids. 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 locations are shown on Figure 4. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected on May 15, 1997, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Samples contained TPHC concentrations ranging from non-detect to 206.31 mg/kg.

#### **3.2 GROUNDWATER SAMPLING RESULTS**

No compounds were detected in the sample collected from Building 492 on November 6, 1999, and December 22, 1999.

A summary of the analytical results and comparison to the NJDEP groundwater cleanup criteria is provided in Table 3 and the groundwater sampling locations are shown on Figure 5. The analytical data package is provided in Appendix F. The full data package, including quality control, is on file at U.S. Army Fort Monmouth located in Fort Monmouth, New Jersey.

Groundwater samples collected on November 6, 1999, and December 22, 1999, were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

### **3.3 CONCLUSIONS AND RECOMMENDATIONS**

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 492 were below the NJDEP soil cleanup criteria for total organic contaminants

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

Based on the analytical results of the groundwater samples collected at Building 492 on November 6, 1999, and December 22, 1999, groundwater quality at Building 492 was either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC)

No further action is proposed in regard to the closure and site assessment of UST No 90010-59 at Building 492

## TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES  
BUILDING 492, MAIN POST-EAST AREA  
FORT MONMOUTH, NEW JERSEY

Page 1 of 2

| Sample ID | Date of Collection | Date Analysis Started | Matrix | Sample Type     | Analytical Parameters* | NJDEP Method |
|-----------|--------------------|-----------------------|--------|-----------------|------------------------|--------------|
| A         | 5/15/97            | 5/16/97               | Soil   | Post-Excavation | TPHC                   | OQA-QAM-025  |
| B         | 5/15/97            | 5/16/97               | Soil   | Post-Excavation | TPHC                   | OQA-QAM-025  |
| C         | 5/15/97            | 5/16/97               | Soil   | Post-Excavation | TPHC                   | OQA-QAM-025  |
| D         | 5/15/97            | 5/16/97               | Soil   | Post-Excavation | TPHC                   | OQA-QAM-025  |
| E         | 5/15/97            | 5/16/97               | Soil   | Post-Excavation | TPHC                   | OQA-QAM-025  |
| F         | 5/15/97            | 5/16/97               | Soil   | Post-Excavation | TPHC                   | OQA-QAM-025  |
| G         | 5/15/97            | 5/16/97               | Soil   | Post-Excavation | TPHC                   | OQA-QAM-025  |
| DUP D     | 5/15/97            | 5/16/97               | Soil   | Post-Excavation | TPHC                   | OQA-QAM-025  |

Note

\* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES  
BUILDING 492, MAIN POST-EAST AREA  
FORT MONMOUTH, NEW JERSEY

Page 2 of 2

| Sample ID | Date of Collection | Date Analysis Started | Matrix  | Sample Type | Analytical Parameters* | Sampling Method** |
|-----------|--------------------|-----------------------|---------|-------------|------------------------|-------------------|
| 4925 01   | 11/6/99            | 11/9/99               | Aqueous | Groundwater | VOCs, SVOCs            | PPNDP             |
| 5043 01   | 12/22/99           | 12/29/99              | Aqueous | Groundwater | VOCs, SVOCs            | PPNDP             |

## Note

\*VOCs Volatile Organic Compounds plus 15 tentatively identified compounds

\*SVOCs Semivolatile organic compounds plus 15 tentatively identified compounds

\*\*PPNDP Passively Placed Narrow Diameter Point

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
BUILDING 492, MAIN POST-EAST AREA  
FORT MONMOUTH, NEW JERSEY

Page 1 of 1

| Sample ID/<br>Depth | Sample<br>Laboratory ID | Sample<br>Date | Analysis<br>Date | Analytical<br>Parameters | Method<br>Detection<br>Limit<br>(mg/kg) | Compound<br>of<br>Concern | Results<br>(mg/kg) * | NJDEP<br>Soil Cleanup<br>Criteria **<br>(mg/kg) | Exceeds<br>Cleanup<br>Criteria |
|---------------------|-------------------------|----------------|------------------|--------------------------|-----------------------------------------|---------------------------|----------------------|-------------------------------------------------|--------------------------------|
| A/3 5'="            | 2548 01                 | 5/15/97        | 5/16/97          | Total Solid<br>TPHC      | --<br>191                               | --<br>yes                 | 80.68 %<br>ND        | --<br>10,000                                    | --<br>No                       |
| B/3 5'="            | 2548 02                 | 5/15/97        | 5/16/97          | Total Solid<br>TPHC      | --<br>168                               | --<br>yes                 | 86.33 %<br>ND        | --<br>10,000                                    | --<br>No                       |
| C/3 5'="            | 2548 03                 | 5/15/97        | 5/16/97          | Total Solid<br>TPHC      | --<br>186                               | --<br>yes                 | 83.95 %<br>ND        | --<br>10,000                                    | --<br>No                       |
| D/3 5'="            | 2548 04                 | 5/15/97        | 5/16/97          | Total Solid<br>TPHC      | --<br>182                               | --<br>yes                 | 81.18 %<br>206.31    | --<br>10,000                                    | --<br>No                       |
| E/6 0'="            | 2548 05                 | 5/15/97        | 5/16/97          | Total Solid<br>TPHC      | --<br>176                               | --<br>yes                 | 82.56 %<br>ND        | --<br>10,000                                    | --<br>No                       |
| F/6 0'="            | 2548 06                 | 5/15/97        | 5/16/97          | Total Solid<br>TPHC      | --<br>178                               | --<br>yes                 | 84.45 %<br>ND        | --<br>10,000                                    | --<br>No                       |
| G/1 0'="            | 2548 07                 | 5/15/97        | 5/16/97          | Total Solid<br>TPHC      | --<br>194                               | --<br>yes                 | 79.91 %<br>ND        | --<br>10,000                                    | --<br>No                       |
| DUPD/3 5'="         | 2548 08                 | 5/15/97        | 5/16/97          | Total Solid<br>TPHC      | --<br>185                               | --<br>yes                 | 79.93 %<br>ND        | --<br>10,000                                    | --<br>No                       |

## Note

- \* Total Solid results are expressed as a percentage
- \*\* NJDEP Residential Direct Contact soil cleanup criteria for total organics
- ND Not detected above stated method detection limit
- TPHC Total Petroleum Hydrocarbons
- Not Applicable

Table 3  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name FMETL NJDEP # 13461 Matrix (soil/water) WATER  
 Date Sampled 11/6/99 Location 492 Lab Sample ID 4925 01(492-1)

| CAS NO     | COMPOUND NAME             | MDL<br>(ug/L) | RESULTS      | QUALIFIER | REGULATORY<br>LEVEL(ug/L) | EXCEEDS<br>CRITERIA |
|------------|---------------------------|---------------|--------------|-----------|---------------------------|---------------------|
| 107028     | Acrolein                  | 1.85          | Not Detected | --        | 50                        | no                  |
| 107131     | Acrylonitrile             | 2.78          | Not Detected | --        | 50                        | no                  |
| 75-650     | tert-Butyl alcohol        | 8.52          | Not Detected | --        | nle                       | no                  |
| 1634044    | Methyl-tert-Butyl ether   | 0.16          | Not Detected | --        | nle                       | no                  |
| 108203     | Di-isopropyl ether        | 0.25          | Not Detected | --        | nle                       | no                  |
|            | Dichlorodifluoromethane   | 1.68          | Not Detected | --        | nle                       | no                  |
| 74-87-3    | Chloromethane             | 1.16          | Not Detected | --        | 30                        | no                  |
| 75-01-4    | Vinyl Chloride            | 1.06          | Not Detected | --        | 5                         | no                  |
| 74-83-9    | Bromomethane              | 1.10          | Not Detected | --        | 10                        | no                  |
| 75-00-3    | Chloroethane              | 1.01          | Not Detected | --        | nle                       | no                  |
| 75-69-4    | Trichlorofluoromethane    | 0.50          | Not Detected | --        | nle                       | no                  |
| 75-35-4    | 1,1-Dichloroethene        | 0.24          | Not Detected | --        | 2                         | no                  |
| 67-64-1    | Acetone                   | 1.36          | Not Detected | --        | 700                       | no                  |
| 75-15-0    | Carbon Disulfide          | 0.46          | Not Detected | --        | nle                       | no                  |
| 75-09-2    | Methylene Chloride        | 0.24          | Not Detected | --        | 2                         | no                  |
| 156-60-5   | trans-1,2-Dichloroethene  | 0.16          | Not Detected | --        | 100                       | no                  |
| 75-35-3    | 1,1-Dichloroethane        | 0.12          | Not Detected | --        | 70                        | no                  |
| 108-05-4   | Vinyl Acetate             | 0.78          | Not Detected | --        | nle                       | no                  |
| 78-93-3    | 2-Butanone                | 0.62          | Not Detected | --        | 300                       | no                  |
| 156-59-2   | cis-1,2-Dichloroethene    | 0.17          | Not Detected | --        | 10                        | no                  |
| 67-66-3    | Chloroform                | 0.30          | Not Detected | --        | 6                         | no                  |
| 75-55-6    | 1,1,1-Trichloroethane     | 0.23          | Not Detected | --        | 30                        | no                  |
| 56-23-5    | Carbon Tetrachloride      | 0.47          | Not Detected | --        | 2                         | no                  |
| 71-43-2    | Benzene                   | 0.23          | Not Detected | --        | 1                         | no                  |
| 107-06-2   | 1,2-Dichloroethane        | 0.18          | Not Detected | --        | 2                         | no                  |
| 79-01-6    | Trichloroethene           | 0.23          | Not Detected | --        | 1                         | no                  |
| 78-87-5    | 1,2-Dichloropropane       | 0.40          | Not Detected | --        | 1                         | no                  |
| 75-27-4    | Bromodichloromethane      | 0.55          | Not Detected | --        | 1                         | no                  |
| 110-75-8   | 2-Chloroethyl vinyl ether | 0.65          | Not Detected | --        | nle                       | no                  |
| 10061-01-5 | cis-1,3-Dichloropropene   | 0.69          | Not Detected | --        | nle                       | no                  |

Table 3  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name FMETL NJDEP # 13461 Matrix (soil/water) WATER  
 Date Sampled 11/6/99 Location 492 Lab Sample ID 4925 01(492-1)

| CAS NO     | COMPOUND NAME             | MDL<br>(ug/L) | RESULTS      | QUALIFIER | REGULATORY<br>LEVEL(ug/L) | EXCEEDS<br>CRITERIA |
|------------|---------------------------|---------------|--------------|-----------|---------------------------|---------------------|
| 108-10-1   | 4-Methyl-2-Pentanone      | 0.59          | Not Detected | --        | 400                       | no                  |
| 108-88-3   | Toluene                   | 0.37          | Not Detected | --        | 1000                      | no                  |
| 10061-02-6 | trans-1,3-Dichloropropene | 0.87          | Not Detected | --        | nle                       | no                  |
| 79-00-5    | 1,1,2-Trichloroethane     | 0.48          | Not Detected | --        | 3                         | no                  |
| 127-18-4   | Tetrachloroethene         | 0.32          | Not Detected | --        | 1                         | no                  |
| 591-78-6   | 2-Hexanone                | 0.71          | Not Detected | --        | nle                       | no                  |
| 126-48-1   | Dibromochloromethane      | 0.86          | Not Detected | --        | 10                        | no                  |
| 108-90-7   | Chlorobenzene             | 0.39          | Not Detected | --        | 4                         | no                  |
| 100-41-4   | Ethylbenzene              | 0.65          | Not Detected | --        | 700                       | no                  |
| 1330-20-7  | m+p-Xylenes               | 1.14          | Not Detected | --        | nle                       | no                  |
| 1330-20-7  | o-Xylene                  | 0.62          | Not Detected | --        | nle                       | no                  |
| 100-42-5   | Styrene                   | 0.56          | Not Detected | --        | 100                       | no                  |
| 75-25-2    | Bromoform                 | 0.70          | Not Detected | --        | 4                         | no                  |
| 79-34-5    | 1,1,2,2-Tetrachloroethane | 0.47          | Not Detected | --        | 2                         | no                  |
| 541-73-1   | 1,3-Dichlorobenzene       | 0.55          | Not Detected | --        | 600                       | no                  |
| 106-46-7   | 1,4-Dichlorobenzene       | 0.57          | Not Detected | --        | 75                        | no                  |
| 95-50-1    | 1,2-Dichlorobenzene       | 0.64          | Not Detected | --        | 600                       | no                  |

Table 3  
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name FMETL NJDEP # 13461 Matrix (soil/water) WATER  
 Date Sampled 11/6/99 Location 492 Lab Sample ID 4925 01(492-1)

| CAS NO   | COMPOUND NAME               | MDL<br>(ug/L) | RESULTS      | QUALIFIER | REGULATORY<br>LEVEL(ug/L) | EXCEEDS<br>CRITERIA |
|----------|-----------------------------|---------------|--------------|-----------|---------------------------|---------------------|
| 110-86-1 | Pyridine                    | 1 83          | Not Detected | --        | nle                       | no                  |
| 62-75-9  | N-nitroso-dimethylamine     | 0 91          | Not Detected | --        | 20                        | no                  |
| 62-53-3  | Aniline                     | 1 63          | Not Detected | --        | nle                       | no                  |
| 111-44-4 | bis(2-Chloroethyl)ether     | 1 28          | Not Detected | --        | 10                        | no                  |
| 541-73-1 | 1,3-Dichlorobenzene         | 1 19          | Not Detected | --        | 600                       | no                  |
| 106-46-7 | 1,4-Dichlorobenzene         | 1 02          | Not Detected | --        | 75                        | no                  |
| 100-51-6 | Benzyl alcohol              | 1 02          | Not Detected | --        | nle                       | no                  |
| 95-50-1  | 1,2-Dichlorobenzene         | 1 13          | Not Detected | --        | 600                       | no                  |
| 108-60-1 | bis(2-chloroisopropyl)ether | 1 39          | Not Detected | --        | 300                       | no                  |
| 621-64-7 | n-Nitroso-di-n-propylamine  | 1 50          | Not Detected | --        | 20                        | no                  |
| 67-72-1  | Hexachloroethane            | 0 97          | Not Detected | --        | 10                        | no                  |
| 98-95-3  | Nitrobenzene                | 1 01          | Not Detected | --        | 10                        | no                  |
| 78-59-1  | Isophorone                  | 1 21          | Not Detected | --        | 100                       | no                  |
| 111-91-1 | bis(2-Chloroethoxy)methane  | 1 75          | Not Detected | --        | nle                       | no                  |
| 120-82-1 | 1,2,4-Trichlorobenzene      | 1 22          | Not Detected | --        | 9                         | no                  |
| 91-20-3  | Naphthalene                 | 1 27          | Not Detected | --        | nle                       | no                  |
| 106-47-8 | 4-Chloroaniline             | 1 09          | Not Detected | --        | nle                       | no                  |
| 87-68-3  | Hexachlorobutadiene         | 0 71          | Not Detected | --        | 1                         | no                  |
| 91-57-6  | 2-Methylnaphthalene         | 1 08          | Not Detected | --        | nle                       | no                  |
| 77-47-4  | Hexachlorocyclopentadiene   | 1 32          | Not Detected | --        | 50                        | no                  |
| 91-58-7  | 2-Chloronaphthalene         | 1 01          | Not Detected | --        | nle                       | no                  |
| 88-74-4  | 2-Nitroaniline              | 0 79          | Not Detected | --        | nle                       | no                  |
| 131-11-3 | Dimethylphthalate           | 1 52          | Not Detected | --        | 7000                      | no                  |
| 208-96-8 | Acenaphthylene              | 0 96          | Not Detected | --        | nle                       | no                  |

Table 3  
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name FMETL NJDEP # 13461 Matrix (soil/water) WATER  
 Date Sampled 11/6/99 Location 492 Lab Sample ID 4925 01(492-1)

| CAS NO    | COMPOUND NAME              | MDL<br>(ug/L) | RESULTS      | QUALIFIER | REGULATORY<br>LEVEL(ug/L) | EXCEEDS<br>CRITERIA |
|-----------|----------------------------|---------------|--------------|-----------|---------------------------|---------------------|
| 606-20-2  | 2,6-Dinitrotoluene         | 0.81          | Not Detected | --        | nle                       | no                  |
| 99-09-2   | 3-Nitroaniline             | 0.79          | Not Detected | --        | nle                       | no                  |
| 83-32-9   | Acenaphthene               | 1.10          | Not Detected | --        | 400                       | no                  |
| 132-64-9  | Dibenzofuran               | 1.00          | Not Detected | --        | nle                       | no                  |
| 121-14-2  | 2,4-Dinitrotoluene         | 0.87          | Not Detected | --        | 10                        | no                  |
| 84-66-2   | Diethylphthalate           | 1.62          | Not Detected | --        | 5000                      | no                  |
| 86-73-7   | Fluorene                   | 0.99          | Not Detected | --        | 300                       | no                  |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 1.10          | Not Detected | --        | nle                       | no                  |
| 100-01-6  | 4-Nitroaniline             | 1.05          | Not Detected | --        | nle                       | no                  |
| 86-30-6   | n-Nitrosodiphenylamine     | 1.01          | Not Detected | --        | 20                        | no                  |
| 103-33-3  | Azobenzene                 | 0.67          | Not Detected | --        | nle                       | no                  |
| 101-55-3  | 4-Bromophenyl-phenylether  | 0.76          | Not Detected | --        | nle                       | no                  |
| 118-74-1  | Hexachlorobenzene          | 0.94          | Not Detected | --        | 10                        | no                  |
| 85-01-8   | Phenanthrene               | 1.23          | Not Detected | --        | nle                       | no                  |
| 120-12-7  | Anthracene                 | 1.12          | Not Detected | --        | 2000                      | no                  |
| 84-74-2   | Di-n-butylphthalate        | 1.70          | Not Detected | --        | 900                       | no                  |
| 206-44-0  | Fluoranthene               | 1.64          | Not Detected | --        | 300                       | no                  |
| 92-87-5   | Benzidine                  | 4.18          | Not Detected | --        | 50                        | no                  |
| 129-00-0  | Pyrene                     | 1.25          | Not Detected | --        | 200                       | no                  |
| 85-68-7   | Butylbenzylphthalate       | 1.05          | Not Detected | --        | 100                       | no                  |
| 56-55-3   | Benzo[a]anthracene         | 1.19          | Not Detected | --        | 10                        | no                  |
| 91-94-1   | 3,3'-Dichlorobenzidine     | 1.75          | Not Detected | --        | 60                        | no                  |
| 218-01-9  | Chrysene                   | 1.38          | Not Detected | --        | 20                        | no                  |
| 117-81-7  | bis(2-Ethylhexyl)phthalate | 1.74          | Not Detected | --        | 30                        | no                  |
| 117-84-0  | Di-n-octylphthalate        | 1.44          | Not Detected | --        | 100                       | no                  |
| 205-99-2  | Benzo[b]fluoranthene       | 1.25          | Not Detected | --        | 10                        | no                  |
| 207-08-9  | Benzo[k]fluoranthene       | 1.29          | Not Detected | --        | 2                         | no                  |
| 50-32-8   | Benzo[a]pyrene             | 1.05          | Not Detected | --        | 20                        | no                  |
| 193-39-5  | Indeno[1,2,3-cd]pyrene     | 0.83          | Not Detected | --        | 20                        | no                  |
| 53-70-3   | Dibenz[a,h]anthracene      | 0.64          | Not Detected | --        | 20                        | no                  |
| 191-24-2  | Benzo[g,h,i]perylene       | 0.84          | Not Detected | --        | nle                       | no                  |

Table 3  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name FMETL NJDEP # 13461 Matrix (soil/water) WATER  
 Date Sampled 12/22/99 Location 492 Lab Sample ID 5043 01(Bldg 492)

| CAS NO     | COMPOUND NAME             | MDL<br>(ug/L) | RESULTS      | QUALIFIER | REGULATORY<br>LEVEL(ug/L) | EXCEEDS<br>CRITERIA |
|------------|---------------------------|---------------|--------------|-----------|---------------------------|---------------------|
| 107028     | Acrolein                  | 1.85          | Not Detected | --        | 50                        | no                  |
| 107131     | Acrylonitrile             | 2.78          | Not Detected | --        | 50                        | no                  |
| 75650      | tert-Butyl alcohol        | 8.52          | Not Detected | --        | nle                       | no                  |
| 1634044    | Methyl-tert Butyl ether   | 0.16          | Not Detected | --        | nle                       | no                  |
| 108203     | Di-isopropyl ether        | 0.25          | Not Detected | --        | nle                       | no                  |
|            | Dichlorodifluoromethane   | 1.68          | Not Detected | --        | nle                       | no                  |
| 74-87-3    | Chloromethane             | 1.16          | Not Detected | --        | 30                        | no                  |
| 75-01-4    | Vinyl Chloride            | 1.06          | Not Detected | --        | 5                         | no                  |
| 74-83-9    | Bromomethane              | 1.10          | Not Detected | --        | 10                        | no                  |
| 75-00-3    | Chloroethane              | 1.01          | Not Detected | --        | nle                       | no                  |
| 75-69-4    | Trichlorofluoromethane    | 0.50          | Not Detected | --        | nle                       | no                  |
| 75-35-4    | 1,1-Dichloroethene        | 0.24          | Not Detected | --        | 2                         | no                  |
| 67-64-1    | Acetone                   | 1.36          | Not Detected | --        | 700                       | no                  |
| 75-15-0    | Carbon Disulfide          | 0.46          | Not Detected | --        | nle                       | no                  |
| 75-09-2    | Methylene Chloride        | 0.24          | Not Detected | --        | 2                         | no                  |
| 156-60-5   | trans-1,2-Dichloroethene  | 0.16          | Not Detected | --        | 100                       | no                  |
| 75-35-3    | 1,1-Dichloroethane        | 0.12          | Not Detected | --        | 70                        | no                  |
| 108-05-4   | Vinyl Acetate             | 0.78          | Not Detected | --        | nle                       | no                  |
| 78-93-3    | 2-Butanone                | 0.62          | Not Detected | --        | 300                       | no                  |
| 156-59-2   | cis-1,2-Dichloroethene    | 0.17          | Not Detected | --        | 10                        | no                  |
| 67-66-3    | Chloroform                | 0.30          | Not Detected | --        | 6                         | no                  |
| 75-55-6    | 1,1,1-Trichloroethane     | 0.23          | Not Detected | --        | 30                        | no                  |
| 56-23-5    | Carbon Tetrachloride      | 0.47          | Not Detected | --        | 2                         | no                  |
| 71-43-2    | Benzene                   | 0.23          | Not Detected | --        | 1                         | no                  |
| 107-06-2   | 1,2-Dichloroethane        | 0.18          | Not Detected | --        | 2                         | no                  |
| 79-01-6    | Trichloroethene           | 0.23          | Not Detected | --        | 1                         | no                  |
| 78-87-5    | 1,2-Dichloropropane       | 0.40          | Not Detected | --        | 1                         | no                  |
| 75-27-4    | Bromodichloromethane      | 0.55          | Not Detected | --        | 1                         | no                  |
| 110-75-8   | 2-Chloroethyl vinyl ether | 0.65          | Not Detected | --        | nle                       | no                  |
| 10061-01-5 | cis-1,3-Dichloropropene   | 0.69          | Not Detected | --        | nle                       | no                  |

Table 3  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name FMETL NJDEP # 13461 Matrix (soil/water) WATER  
 Date Sampled 12/22/99 Location 492 Lab Sample ID 5043 01(Bldg 492)

| CAS NO     | COMPOUND NAME             | MDL<br>(ug/L) | RESULTS      | QUALIFIER | REGULATORY<br>LEVEL(ug/L) | EXCEEDS<br>CRITERIA |
|------------|---------------------------|---------------|--------------|-----------|---------------------------|---------------------|
| 108-10-1   | 4-Methyl-2-Pentanone      | 0.59          | Not Detected | --        | 400                       | no                  |
| 108-88-3   | Toluene                   | 0.37          | Not Detected | --        | 1000                      | no                  |
| 10061-02-6 | trans-1,3-Dichloropropene | 0.87          | Not Detected | --        | nle                       | no                  |
| 79-00-5    | 1,1,2-Trichloroethane     | 0.48          | Not Detected | --        | 3                         | no                  |
| 127-18-4   | Tetrachloroethene         | 0.32          | Not Detected | --        | 1                         | no                  |
| 591-78-6   | 2-Hexanone                | 0.71          | Not Detected | --        | nle                       | no                  |
| 126-48-1   | Dibromochloromethane      | 0.86          | Not Detected | --        | 10                        | no                  |
| 108-90-7   | Chlorobenzene             | 0.39          | Not Detected | --        | 4                         | no                  |
| 100-41-4   | Ethylbenzene              | 0.65          | Not Detected | --        | 700                       | no                  |
| 1330-20-7  | m+p-Xylenes               | 1.14          | Not Detected | --        | nle                       | no                  |
| 1330-20-7  | o-Xylene                  | 0.62          | Not Detected | --        | nle                       | no                  |
| 100-42-5   | Styrene                   | 0.56          | Not Detected | --        | 100                       | no                  |
| 75-25-2    | Bromoform                 | 0.70          | Not Detected | --        | 4                         | no                  |
| 79-34-5    | 1,1,2,2-Tetrachloroethane | 0.47          | Not Detected | --        | 2                         | no                  |
| 541-73-1   | 1,3-Dichlorobenzene       | 0.55          | Not Detected | --        | 600                       | no                  |
| 106-46-7   | 1,4-Dichlorobenzene       | 0.57          | Not Detected | --        | 75                        | no                  |
| 95-50-1    | 1,2-Dichlorobenzene       | 0.64          | Not Detected | --        | 600                       | no                  |

Table 3  
SEMI-VOLATILE ANALYSIS DATA SHEET

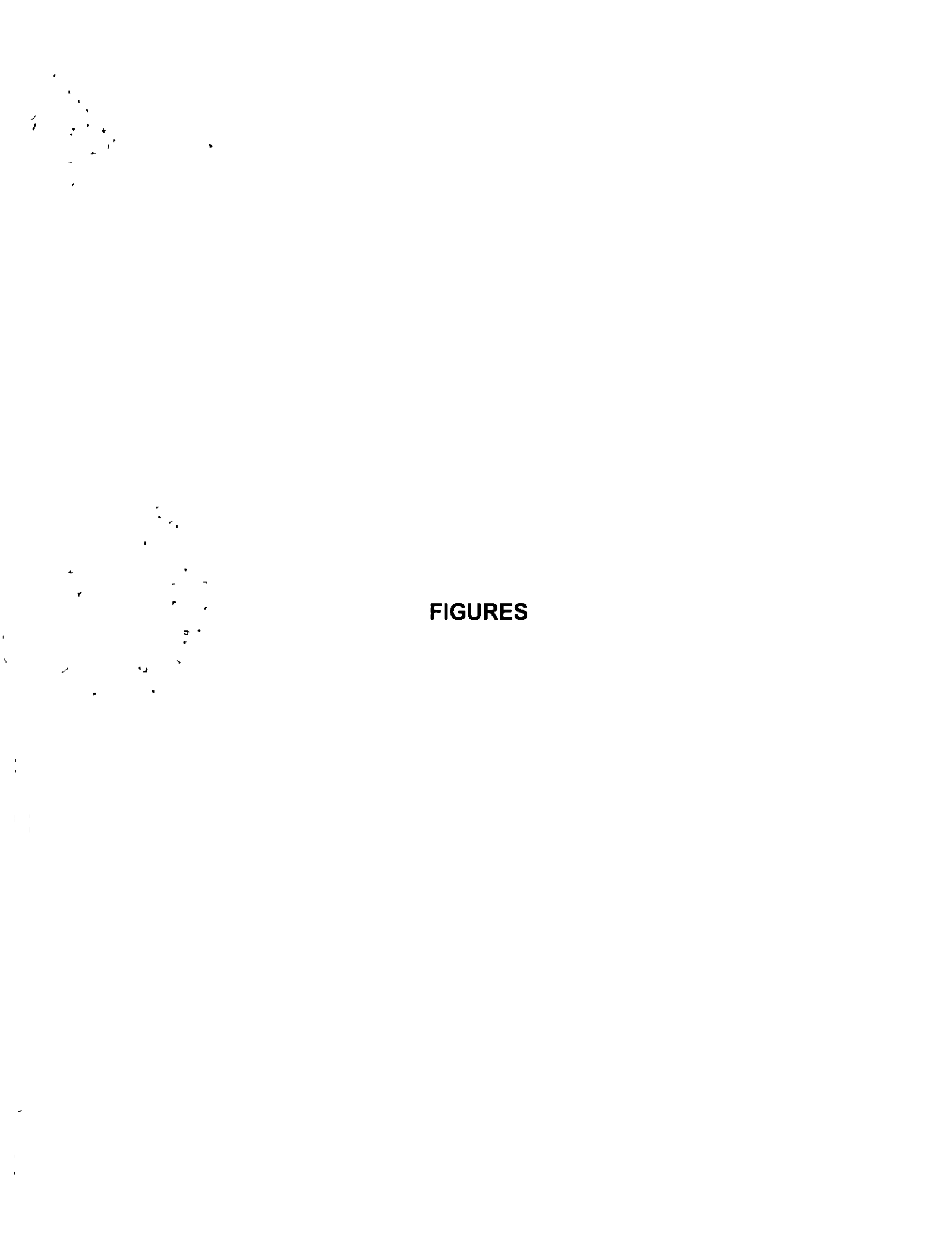
Lab Name FMETL NJDEP # 13461 Matrix (soil/water) WATER  
 Date Sampled 12/22/99 Location 492 Lab Sample ID 5043 01(Bldg 492)

| CAS NO   | COMPOUND NAME               | MDL<br>(ug/L) | RESULTS      | QUALIFIER | REGULATORY<br>LEVEL(ug/L) | EXCEEDS<br>CRITERIA |
|----------|-----------------------------|---------------|--------------|-----------|---------------------------|---------------------|
| 110-86-1 | Pyridine                    | 1 83          | Not Detected | --        | nle                       | no                  |
| 62-75-9  | N-nitroso-dimethylamine     | 0 91          | Not Detected | --        | 20                        | no                  |
| 62-53-3  | Aniline                     | 1 63          | Not Detected | --        | nle                       | no                  |
| 111-44-4 | bis(2-Chloroethyl)ether     | 1 28          | Not Detected | --        | 10                        | no                  |
| 541-73-1 | 1,3-Dichlorobenzene         | 1 19          | Not Detected | --        | 600                       | no                  |
| 106-46-7 | 1,4-Dichlorobenzene         | 1 02          | Not Detected | --        | 75                        | no                  |
| 100-51-6 | Benzyl alcohol              | 1 02          | Not Detected | --        | nle                       | no                  |
| 95-50-1  | 1,2-Dichlorobenzene         | 1 13          | Not Detected | --        | 600                       | no                  |
| 108-60-1 | bis(2-chloroisopropyl)ether | 1 39          | Not Detected | --        | 300                       | no                  |
| 621-64-7 | n-Nitroso-di-n-propylamine  | 1 50          | Not Detected | --        | 20                        | no                  |
| 67-72-1  | Hexachloroethane            | 0 97          | Not Detected | --        | 10                        | no                  |
| 98-95-3  | Nitrobenzene                | 1 01          | Not Detected | --        | 10                        | no                  |
| 78-59-1  | Isophorone                  | 1 21          | Not Detected | --        | 100                       | no                  |
| 111-91-1 | bis(2-Chloroethoxy)methane  | 1 75          | Not Detected | --        | nle                       | no                  |
| 120-82-1 | 1,2,4-Trichlorobenzene      | 1 22          | Not Detected | --        | 9                         | no                  |
| 91-20-3  | Naphthalene                 | 1 27          | Not Detected | --        | nle                       | no                  |
| 106-47-8 | 4-Chloroaniline             | 1 09          | Not Detected | --        | nle                       | no                  |
| 87-68-3  | Hexachlorobutadiene         | 0 71          | Not Detected | --        | 1                         | no                  |
| 91-57-6  | 2-Methylnaphthalene         | 1 08          | Not Detected | --        | nle                       | no                  |
| 77-47-4  | Hexachlorocyclopentadiene   | 1 32          | Not Detected | --        | 50                        | no                  |
| 91-58-7  | 2-Chloronaphthalene         | 1 01          | Not Detected | --        | nle                       | no                  |
| 88-74-4  | 2-Nitroaniline              | 0 79          | Not Detected | --        | nle                       | no                  |
| 131-11-3 | Dimethylphthalate           | 1 52          | Not Detected | --        | 7000                      | no                  |
| 208-96-8 | Acenaphthylene              | 0 96          | Not Detected | --        | nle                       | no                  |

Table 3  
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name FMETL NJDEP # 13461 Matrix (soil/water) WATER  
 Date Sampled 12/22/99 Location 492 Lab Sample ID 5043 01(Bldg 492)

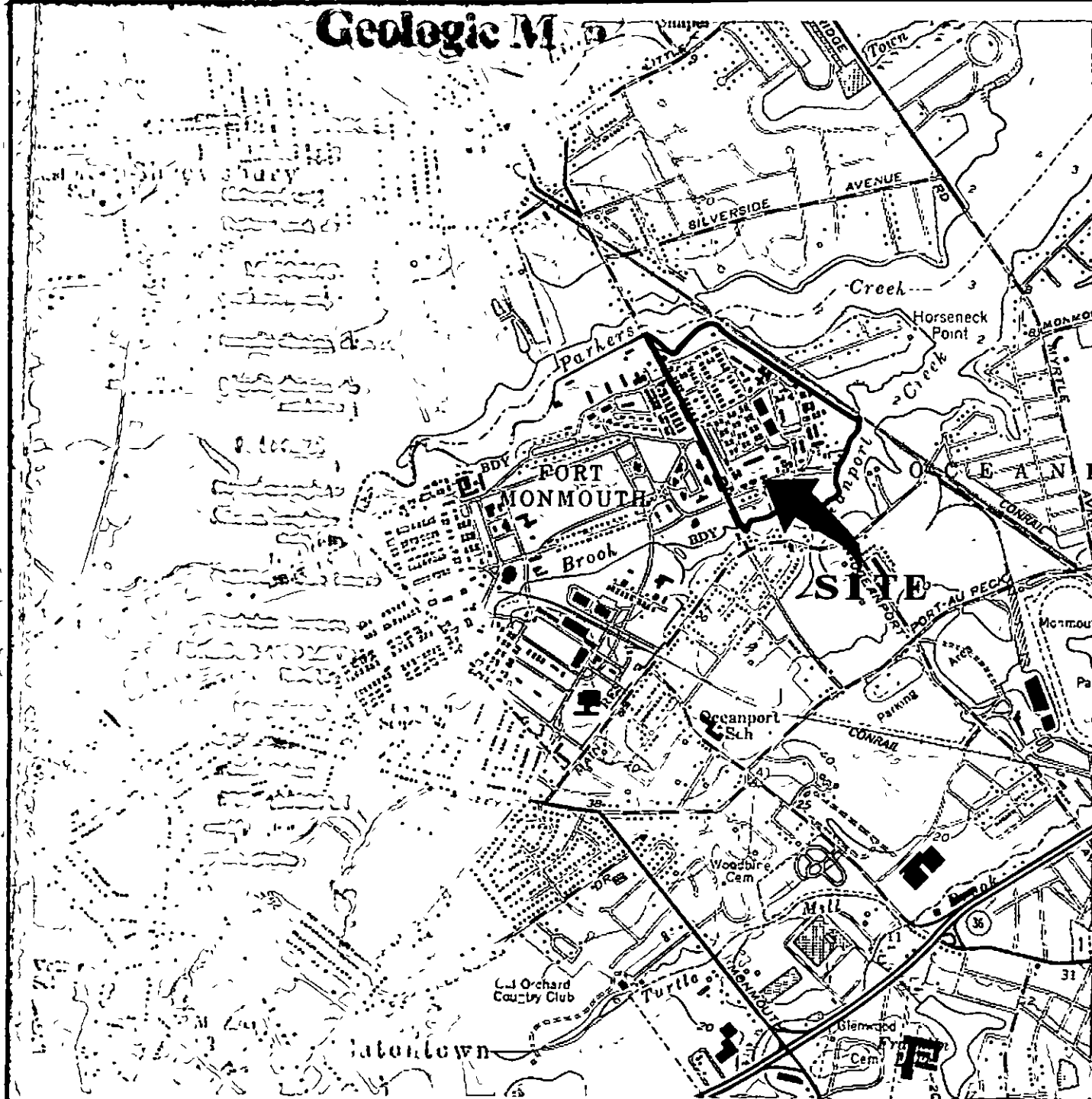
| CAS NO    | COMPOUND NAME              | MDL<br>(ug/L) | RESULTS      | QUALIFIER | REGULATORY<br>LEVEL(ug/L) | EXCEEDS<br>CRITERIA |
|-----------|----------------------------|---------------|--------------|-----------|---------------------------|---------------------|
| 606-20-2  | 2,6-Dinitrotoluene         | 0.81          | Not Detected | --        | nle                       | no                  |
| 99-09-2   | 3-Nitroaniline             | 0.79          | Not Detected | --        | nle                       | no                  |
| 83-32-9   | Acenaphthene               | 1.10          | Not Detected | --        | 400                       | no                  |
| 132-64-9  | Dibenzofuran               | 1.00          | Not Detected | --        | nle                       | no                  |
| 121-14-2  | 2,4-Dinitrotoluene         | 0.87          | Not Detected | --        | 10                        | no                  |
| 84-66-2   | Diethylphthalate           | 1.62          | Not Detected | --        | 5000                      | no                  |
| 86-73-7   | Fluorene                   | 0.99          | Not Detected | --        | 300                       | no                  |
| 7005-72-3 | 4-Chlorophenyl phenylether | 1.10          | Not Detected | --        | nle                       | no                  |
| 100-01-6  | 4-Nitroaniline             | 1.05          | Not Detected | --        | nle                       | no                  |
| 86-30-6   | n-Nitrosodiphenylamine     | 1.01          | Not Detected | --        | 20                        | no                  |
| 103-33-3  | Azobenzene                 | 0.67          | Not Detected | --        | nle                       | no                  |
| 101-55-3  | 4-Bromophenyl phenylether  | 0.76          | Not Detected | --        | nle                       | no                  |
| 118-74-1  | Hexachlorobenzene          | 0.94          | Not Detected | --        | 10                        | no                  |
| 85-01-8   | Phenanthrene               | 1.23          | Not Detected | --        | nle                       | no                  |
| 120-12-7  | Anthracene                 | 1.12          | Not Detected | --        | 2000                      | no                  |
| 84-74-2   | Di-n-butylphthalate        | 1.70          | Not Detected | --        | 900                       | no                  |
| 206-44-0  | Fluoranthene               | 1.64          | Not Detected | --        | 300                       | no                  |
| 92-87-5   | Benzidine                  | 4.18          | Not Detected | --        | 50                        | no                  |
| 129-00-0  | Pyrene                     | 1.25          | Not Detected | --        | 200                       | no                  |
| 85-68-7   | Butylbenzylphthalate       | 1.05          | Not Detected | --        | 100                       | no                  |
| 56-55-3   | Benzo[a]anthracene         | 1.19          | Not Detected | --        | 10                        | no                  |
| 91-94-1   | 3,3'-Dichlorobenzidine     | 1.75          | Not Detected | --        | 60                        | no                  |
| 218-01-9  | Chrysene                   | 1.38          | Not Detected | --        | 20                        | no                  |
| 117-81-7  | bis(2-Ethylhexyl)phthalate | 1.74          | Not Detected | --        | 30                        | no                  |
| 117-84-0  | Di-n-octylphthalate        | 1.44          | Not Detected | --        | 100                       | no                  |
| 205-99-2  | Benzo[b]fluoranthene       | 1.25          | Not Detected | --        | 10                        | no                  |
| 207-08-9  | Benzo[k]fluoranthene       | 1.29          | Not Detected | --        | 2                         | no                  |
| 50-32-8   | Benzo[a]pyrene             | 1.05          | Not Detected | --        | 20                        | no                  |
| 193-39-5  | Indeno[1,2,3-cd]pyrene     | 0.83          | Not Detected | --        | 20                        | no                  |
| 53-70-3   | Dibenz[a,h]anthracene      | 0.64          | Not Detected | --        | 20                        | no                  |
| 191-24-2  | Benzo[g,h,i]perylene       | 0.84          | Not Detected | --        | nle                       | no                  |



## FIGURES

## APPENDIX A

# Geologic Map



**FIGURE 1**

## LOCATION MAP

Building 492  
Main-Post East  
Fort Monmouth Army Base  
Monmouth County, NJ

## VERSAR

Engineers, Managers, Scientists, & Planners  
Bristol, PA

Scale 1" = 2000'

Date MAY 1997

**LONG BRANCH, N.J.**

40073-CB-TF-024

1954

PHOTOREVISED 1981

DRA 6164 I GE-SERIES VE22

NEW  
JERSEY

QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

# Geologic Map of New Jersey

## SEDIMENTARY ROCKS

### CENOZOIC

Holocene: sand

Tertiary: sand, silt, clay

### MESOZOIC

Cretaceous: sand, silt, clay

Jurassic: shales, slate, sandstone

Triassic: shales, slate, sandstone

### PALEOZOIC

Devonian: conglomerate, sandstone,

shales, conglomerate, sandstone, slate, limestone

Ordovician: shales, limestone

Carboniferous: limestone, sandstone

## IGNEOUS AND METAMORPHIC ROCKS

### MESOZOIC

Granite: batholith

Granite: dike

### PRECAMBRIAN

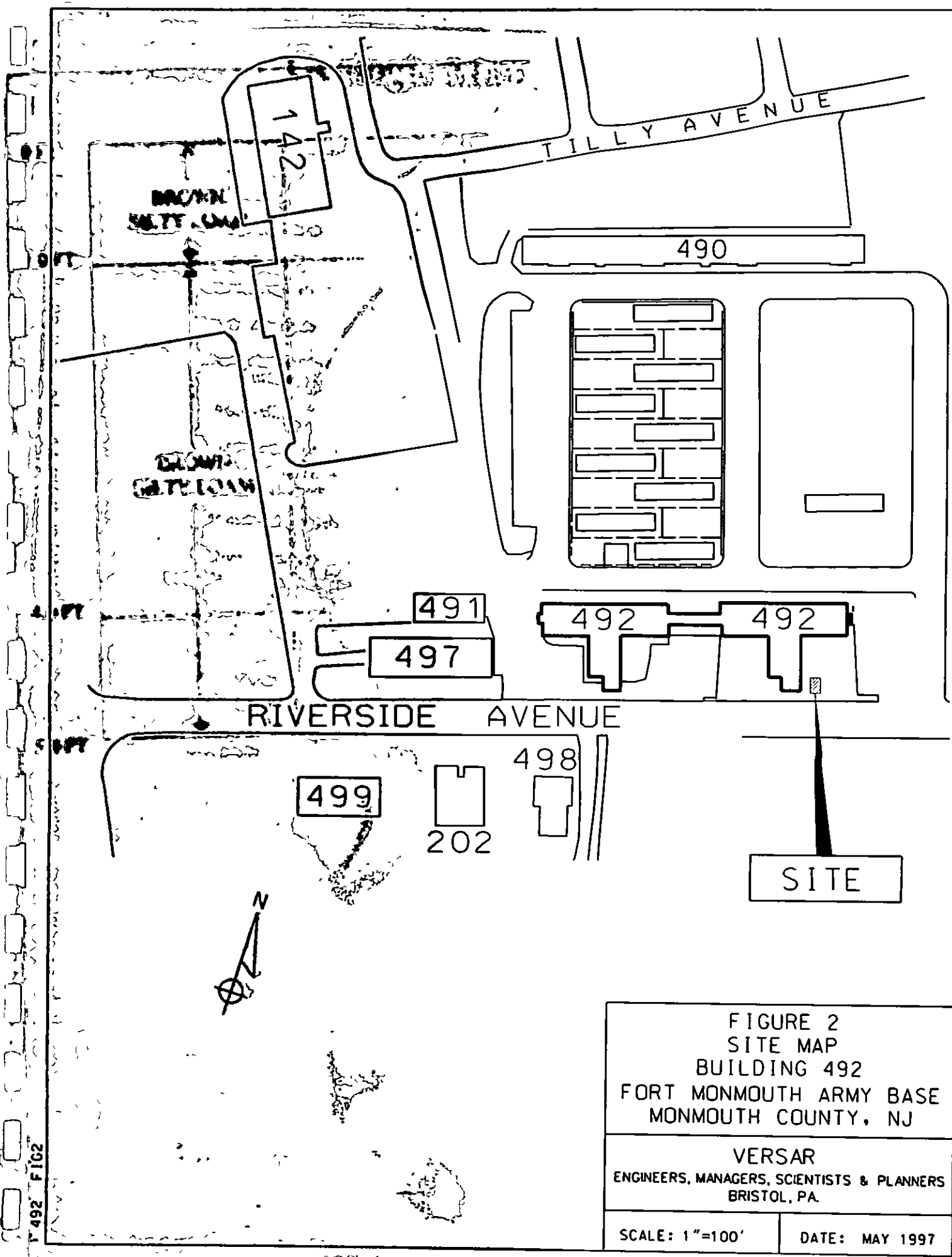
Gneiss

Quartz, granite

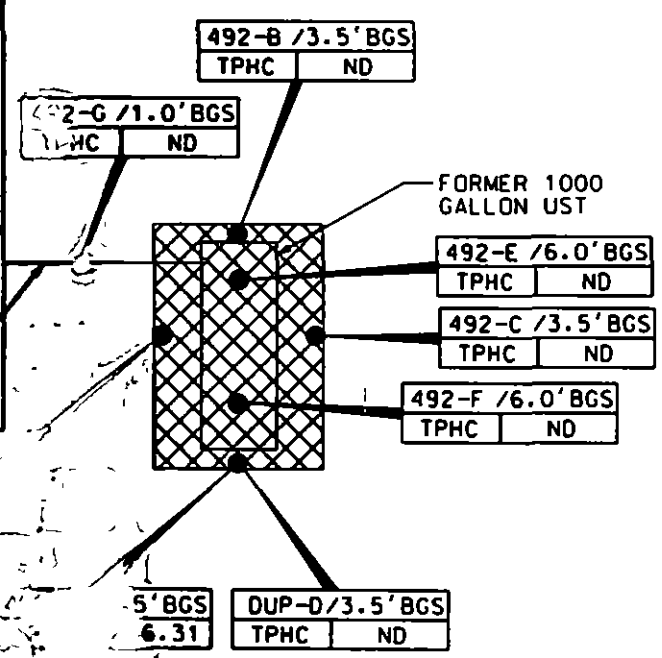
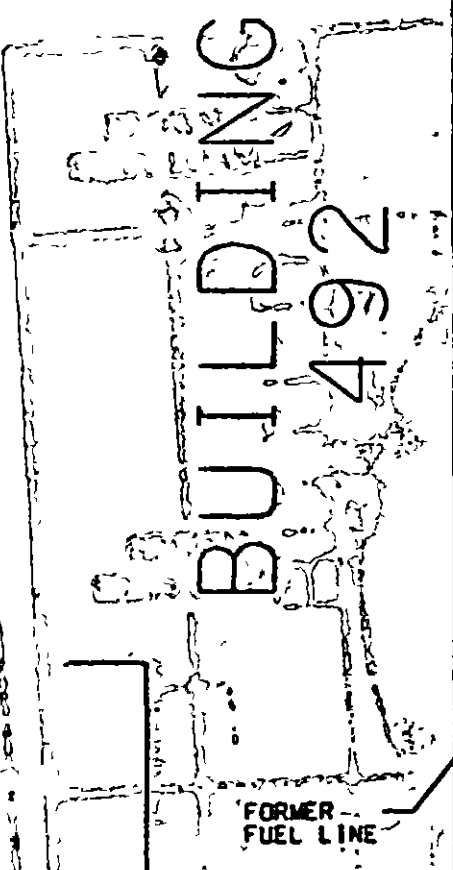


FIGURE 1A  
GEOLOGICAL MAP  
FORT MONMOUTH ARMY BASE  
MONMOUTH COUNTY, NJ

**VERSAR**  
Engineers, Managers, Scientists & Planners  
Bristol, Pennsylvania







FORMER 1000 GALLON UST



**LEGEND**

**FIGURE 4**  
**SOIL SAMPLING LOCATION MAP**  
**BUILDING 492**  
**FORT MONMOUTH ARMY BASE**  
**MONMOUTH COUNTY, NJ**

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

|               |                |
|---------------|----------------|
| SCALE: 1"=10' | DATE: MAY 1997 |
|---------------|----------------|

**NOTES:**

1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE

492 FIG 4

# BUILDING 492

FORMER  
FUEL LINE

FORMER 1000  
GALLON UST

|                                 |            |          |          |
|---------------------------------|------------|----------|----------|
| SAMPLING LOCATION:              | HIGHER OF  | BLDG 492 | BLDG 492 |
| SAMPLING DEPTH:                 | NJDEP GWOS | 5-9' BGS | 5-9' BGS |
| SAMPLING DATE:                  | AND POL    | 11/6/99  | 12/22/99 |
| VOLATILE ORGANIC COMPOUNDS:     |            | ND       | ND       |
| SEMIVOLATILE ORGANIC COMPOUNDS: |            | ND       | ND       |



## LEGEND

- SAMPLE LOCATION  
1999 AND DECEMBER 22, 1999)
- ▨ LIMIT OF EXCAVATION  
(MAY 15, 1997)

## NOTES:

1. ND=INDICATES COMPOUND NOT DETECTED
2. NLE= NO LIMIT ESTABLISHED
3. ALL RESULTS IN UG/L
4. BGS = BELOW GROUND SURFACE

FIGURE 5  
GROUNDWATER SAMPLING MAP  
BUILDING 492  
FORT MONMOUTH ARMY BASE  
MONMOUTH COUNTY, NJ

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

SCALE: 1"=10'

DATE: MAY 1997

## Appendix A

**APPENDIX A**  
**NJDEP-STANDARD REPORTING FORM**



State of New Jersey  
Department of Environmental Protection and Energy  
Division of Responsible Party Site Remediation  
CN 028  
Trenton, NJ 08625-0029

ATTN: UST Program  
(609) 984-3156

For State Use Only

Date Rec'd \_\_\_\_\_  
Auth. \_\_\_\_\_  
Routing \_\_\_\_\_  
UST NO. \_\_\_\_\_

STANDARD REPORTING FORM  
for reporting activities at an UST facility:

- |                                                                          |                                                   |
|--------------------------------------------------------------------------|---------------------------------------------------|
| <input checked="" type="checkbox"/> General Facility Information Changes | <input type="checkbox"/> Sale or Transfer         |
| <input checked="" type="checkbox"/> Closure (Abandonment or Removal)     | <input type="checkbox"/> Substantial Modification |
| <input type="checkbox"/> Temporary Closure                               | <input type="checkbox"/> Financial Responsibility |
| <input type="checkbox"/> Change in Service                               | <input type="checkbox"/> Address Change Only      |

Check ONLY One Type of Activity - Complete Form For That Activity

(More than one tank can be listed per activity)

\*\*\* NOTE \*\*\* ALL NEW tank installations at existing registered facilities must submit a Registration Questionnaire for the new tanks.

Answer questions 1 through 5 and others as applicable

1. Company name and address (as it appears on registration questionnaire).

U.S. Army Fort Monmouth NJ  
Directorate of Public Works  
Fort Monmouth NJ 07703

2. Facility name and location (if different from above):

Main Post East

3. Contact person for this activity:

Charles Appleby  
Telephone Number: (908) 532-6224

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire:

0090010

5. Registration Number (if known):

UST - 59

6. For GENERAL FACILITY INFORMATION changes (address, telephone, contact person, etc. - supply NEW information only):

- a. Facility name: \_\_\_\_\_  
b. Facility location: \_\_\_\_\_  
c. Owner's mailing address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
NJ \_\_\_\_\_  
d. Block: \_\_\_\_\_ Lot: \_\_\_\_\_  
e. Contact person (facility operator): \_\_\_\_\_  
f. Contact telephone number: (\_\_\_\_\_) \_\_\_\_\_  
g. Other (Specify): \_\_\_\_\_

(OVER)

7 For CLOSURE (abandonment or removal - check all that apply):

a ☐ Abandonment Date:        /        /        Case No:       

Attach the necessary implementation schedule (3 copies) and all documentation needed for abandonment per N.J.A.C. 7:14B-9.1(d).

b ☒ Removal Date: 5/15/97 Case No. 97-5-15-1350-20

Attach the necessary implementation schedule (3 copies).

8 For CHANGES IN HAZARDOUS SUBSTANCES STORED (check all that apply):

a. ☐ Temporary Closure (12 month maximum time - see N.J.A.C. 7:14B-9.1(b)). Remove all hazardous substances, leave tank in place.

b. ☐ Change in service from a regulated substance to a non-regulated substance. Tank must be cleaned and site assessment performed per N.J.A.C. 7:14B-9.1(o).

c. ☐ Changes in service from one regulated hazardous substance to another regulated hazardous substance.

Tank No.        Old        Now       

Tank No.        Old        Now       

Tank No.        Old        Now       

(Attach additional sheets if more space is needed)

9 For TRANSFER OF OWNERSHIP: Effective Date:        /        /       

a New Owner (operator)       

b New Facility Name       

       NJ       

County       

c Closing Attorney        Title:        -       

10 For SUBSTANTIAL MODIFICATIONS (to include any retrofitted activity - e.g. the addition of spill/overfill protection, monitoring systems, cathodic protection, etc.):

a. Type of Modification        Date:        /        /       

b. \* NOTE \* Substantial modifications require a permit under N.J.A.C. 7:14B-10.

11 For changes in FINANCIAL RESPONSIBILITY to (check appropriate changes and attach copies of new information):

a. Policy Type: ☐

d. Company/Carrier: ☐

b. Policy Number: ☐

e. Expiration Date: ☐

c. Other: ☐

(Specify)

NOTE. ALL appropriate and applicable permits, licenses and certificates required by the above activity(ies) from any local, state and/or federal agencies must be obtained separately from this notification.

CERTIFICATION

This registration form shall be signed by the highest ranking individual at the facility with overall responsibility for the facility (N.J.A.C. 7:14B-23 (a) 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 civil and criminal penalties for submitting false, inaccurate or incomplete information, including fines and/or imprisonment.

Signature: James Ott

Name (print or type): Mr. James Ott

Title: Director of Public Works Date: 5/15/97





## **APPENDIX B**

### **1 SITE ASSESSMENT SUMMARY**



## Site Remediation Program

## UST Site/Remedial Investigation Report Certification Form

**A. Facility Name** U S Army Fort Monmouth New JerseyFacility Street Address Directorate of Public Works Building 173Municipality Oceanport County MonmouthBlock \_\_\_\_\_ 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
- ☒ NA – Federal  
Agreement

**D. (Complete all that apply)**

- Assigned Case Manager Ian Curtis, Federal Case Manager
- UST Registration Number 90010-59 (7 digits)
- Incident Report Number 97 - 05 - 15 - 1350 - 20 (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 2046Firm U S Army Fort Monmouth Firm's UST Cert Number NA-U S ArmyFirm Address Directorate of Public Works Building 173 City Fort MonmouthState 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

- 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
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or
- 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

7/31/00

**U.S. ARMY, SELFM-PW-E.**  
**DAILY UST SUBSURFACE REMOVAL LOG**

BLDG # 492 REG #: 92010 - 59 CLOSURE# Blanket  
 DATE 5/15/97 TOA. 1200 TOD: \_\_\_\_\_  
 GOV SSE Charles Appleby NJDEP CERT.#. \_\_\_\_\_  
 REMOVAL/CONTRACTOR SAT Inc. TVS Inc  
 CLOSURE SUPERVISOR Gregory Deplattier TVS NJDEP CERT # \_\_\_\_\_  
 WEATHER: Sunny Warm ~ 70°F

| ACTIVITY                                                                                                                                                                                                                                                                                                                                                         | YES / NO   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| THE SUPERVISOR (CLOSURE CERT) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES                                                                                                                                                                                                                                                                                  | <u>YES</u> |
| THE SSE WAS ON-SITE DURING UST REMOVAL AND SITE SCREENING AND SAMPLING ACTIVITIES                                                                                                                                                                                                                                                                                | <u>YES</u> |
| ALL ON-SITE PERSONNEL HAD TRAINING IAW ALL SAFETY REQUIREMENTS (E G 29CFR)                                                                                                                                                                                                                                                                                       | <u>YES</u> |
| A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR                                                                                                                                                                                                                                                                                       | <u>YES</u> |
| THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED                                                                                                                                                                                                                                                                               | <u>YES</u> |
| A DISCHARGE WAS REPORTED TO THE NJDEP (609-292-7172), CASE# <u>97-5-15-1350-20</u>                                                                                                                                                                                                                                                                               | <u>YES</u> |
| PHOTOS HAVE UST#, BLDG #, DATE, TIME, NAME OF SSE AND DESCR WRITTEN ON BACK                                                                                                                                                                                                                                                                                      | <u>YES</u> |
| GROUNDWATER WAS ENCOUNTERED AT <u>4</u> FEET BG, A SHEEN (WAS <del>WAS NOT</del> ) OBSERVED ON GW                                                                                                                                                                                                                                                                | <u>YES</u> |
| IF OVA/Hnu WAS USED WAS IT CAL AND FOUND TO BE OPERATIONAL (cal data on COC)                                                                                                                                                                                                                                                                                     | <u>YES</u> |
| IF SAMPLES WERE TAKEN COC, SCALED SITE MAP (VERT SOIL HORIZONS AND PLOT PLAN)                                                                                                                                                                                                                                                                                    | <u>YES</u> |
| ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992                                                                                                                                                                                                                                                                                       | <u>YES</u> |
| ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA/FID RECORDED SITES IAW 7 26E-3 6 <u>et seq.</u>                                                                                                                                                                                                                                                                       | <u>YES</u> |
| ALL PETROL CONT SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY                                                                                                                                                                                                                                                                                   | <u>YES</u> |
| THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE GROUNDWATER)                                                                                                                                                                                                                                                                                    | <u>NO</u>  |
| ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM                                                                                                                                                                                                                                                                                            | <u>YES</u> |
| THE FOLLOWING DOCUMENTS WERE ADDED TO THE PROJECT FOLDER TODAY (CIRCLE EACH)<br>SCRAP TICKET, CSE PERMIT, <del>ACCIDENT REPORT</del> , HAZ WASTE MANIFEST, DAILY UST CLOSURE LOG,<br>SCALED SITE MAP (SAMPLING), <u>SRF-CLOSURE</u> , CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN<br>FILL TICKETS (IN YDS'), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS) | <u>YES</u> |

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

\\ms\ust\removal\sites\sls doc



**APPENDIX C**  
**WASTE MANIFEST**



RD 1, BOX 5A OLD BRIDGE, NJ 08857

NON-HAZARDOUS  
WASTE MANIFEST

1 Generator's US EPA ID No

Manifest  
Document No2 Page 1  
of 1

NHZ 004855

3 Generator's Name and Mailing Address

US Army Communications Electronics Command Main  
C/O Fallon Bldg. 173 Att: SELFM-PW-EV Post

4 Generator's Phone

(908) 532-6223 Fort Monmouth, NJ 07703

5 Transporter 1 Company Name

LIONETTI OIL RECOVERY CO INC

6

US EPA ID Number

NJ D084044064

A Transporter's Phone

908 721-0900

7 Transporter 2 Company Name

8

US EPA ID Number

B Transporter's Phone

9 Designated Facility Name and Site Address

LIONETTI OIL RECOVERY CO INC DBA LORCO PETROLEUM SVCS  
RUNYON&CHEESEQUAKE RDS  
OLD BRIDGE, NJ 08857

10

US EPA ID Number

NJ D084044064

C Facility's Phone

908 721-0900

11 Waste Shipping Name and Description

12 Containers

No

Type

13  
Total  
Quantity14  
Unit  
Wt/Vola PETROLEUM OIL (PETROLEUM OIL)  
COMBUSTIBLE LIQUID UN1270 PGIII

001 X1775 G

b

c

d

D Additional Descriptions for Materials Listed Above

T, L PETROLEUM OIL 50 %  
WATER 50 %

E Handling Codes for Wastes Listed Above

T04 FILTRATION

15 Special Handling Instructions and Additional Information

24 HR EMERGENCY RESPONSE/(908) 721-0900  
DECAL#23622 ERG#128 DEXSIL TEST KIT RESULTS N/A PPM  
MANIFEST USED FOR TRACKING PURPOSES ONLY

16 GENERATOR'S CERTIFICATION I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste

Printed/Typed Name

EUGENE W LESINSKI

Signature

Month Day Year

06 03 97

17 Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Richard Dirienzo

Signature

Month Day Year

06 03 97

18 Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19 Discrepancy Indication Space

20 Facility Owner or Operator Certification of receipt of waste materials covered by this manifest except as noted in Item 19

Printed/Typed Name

Richard L. Bell

Signature

Month Day Year

06 03 97

ORIGINAL - RETURN TO GENERATOR

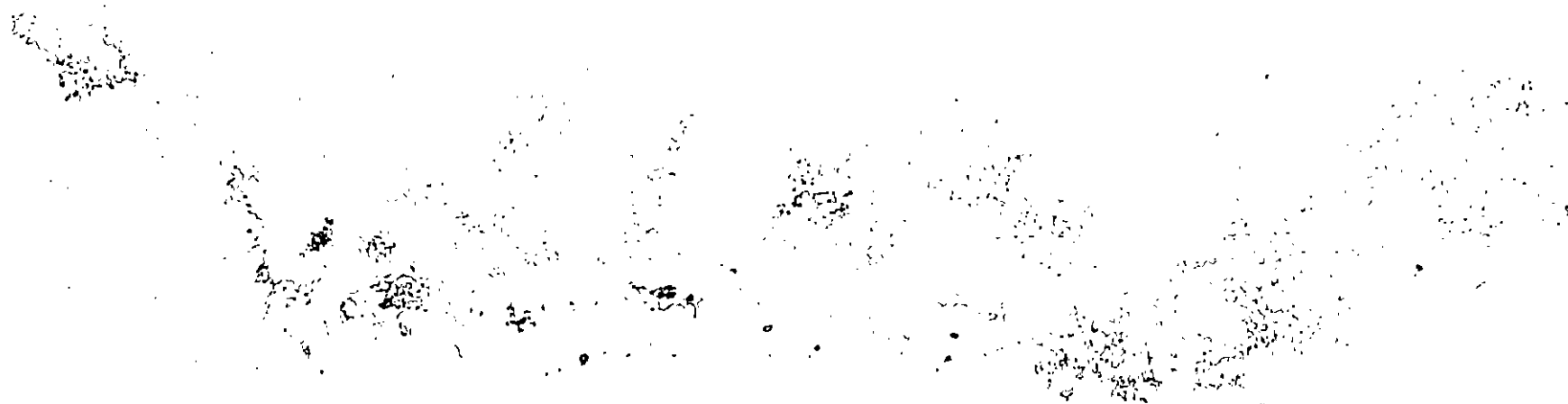


**APPENDIX D**

**UST DISPOSAL CERTIFICATE**

[illegible]

B. 492



**APPENDIX E**  
**SOIL ANALYTICAL DATA PACKAGE**

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEPE # 13461

REPORT OF ANALYSIS

Client U S Army  
DPW, SELFM-PW-EV  
Bldg 173  
Ft Monmouth, NJ 07703

Project Total Petroleum Hydrocarbons  
96-1262  
Bldg 492  
UST

Project # 2548  
Date Rec 05/16/97  
Date Compl 05/21/97  
Released by



Daniel K Wright  
Laboratory Director

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## **Method Summary**

**NJDEP Method OQA-QAM-025-10/97**

### **Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil**

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is then removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

## PHC Conformance/Non-conformance Summary Report

No      Yes

- 1 Method Detection Limits provided
- 2 Method Blank Contamination - If yes, list the sample  
and the corresponding concentrations in each blank

✓

- 3 Matrix Spike Results Summary Meet Criteria  
(If not met, list the sample and corresponding recovery  
which falls outside the acceptable range)

2447.24 161%

- #### 4 Duplicate Results Summary Meet Criteria

☒ 1

(If not met, list the sample and corresponding recovery which falls outside the acceptable range)

- 5 IR Spectra submitted for standards, blanks, & samples

NA

- 6 Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted

✓

- 7 Analysis holding time met

✓

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

Additional 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.

Daniel K. Wright  
Laboratory Manager



# Fort Monmouth Environmental Testing Laboratory

Bldg 173, SLLFM-PW-FV, Fort Monmouth, NJ 07703

Tel (908)532-4759 Fax (908)532-3481 Email appleby@dom6.monmouth.army.mil

NJDEP Certification #13461

## Chain of Custody Record

| Customer: GENE LESINSKI - DPID                                                                                  |                 | Project No 96-1212 |      | Analysis Parameters     |         |                                       |           |           |  |                         |  | Comments                |                        |  |  |
|-----------------------------------------------------------------------------------------------------------------|-----------------|--------------------|------|-------------------------|---------|---------------------------------------|-----------|-----------|--|-------------------------|--|-------------------------|------------------------|--|--|
| Phone #: 20989                                                                                                  |                 | Location B. 492    |      |                         |         |                                       |           |           |  |                         |  | *SAMPLE FOR<br>BELOW 4' |                        |  |  |
| ( ) DERA (X) OMA ( ) Other:                                                                                     |                 |                    |      | Sample #                |         |                                       |           |           |  |                         |  |                         |                        |  |  |
| Samplers Name / Company: GARY DIMARTINO'S                                                                       |                 |                    |      | Sample #                |         |                                       |           |           |  |                         |  |                         |                        |  |  |
| Lab Sample ID                                                                                                   | Sample Location | Date               | Time | Type                    | bottles | TPHC                                  | EL SOLIDS | MUNSEL    |  |                         |  | OLFA                    | Remarks / Preservation |  |  |
| 2548.01                                                                                                         | 492-A           | 5-15-97            | 1511 | Soil                    | 1       | X                                     | X         | X         |  |                         |  | 2                       | SIDEWALL @ 55'         |  |  |
| 02                                                                                                              | 492-B           |                    | 1507 |                         |         |                                       |           |           |  |                         |  | NO                      |                        |  |  |
| 03                                                                                                              | 492-C           |                    | 1507 |                         |         |                                       |           |           |  |                         |  | NO                      |                        |  |  |
| 04                                                                                                              | 492-D           |                    | 1456 |                         |         |                                       |           |           |  |                         |  | 80                      |                        |  |  |
| 05                                                                                                              | 492-E           |                    | 1524 |                         |         |                                       |           |           |  |                         |  | NO                      | EXE FLOOR @ 60'        |  |  |
| 06                                                                                                              | 492-F           |                    | 1517 |                         |         |                                       |           |           |  |                         |  | 25                      |                        |  |  |
| 07                                                                                                              | 492-G           |                    | 1534 |                         |         |                                       |           |           |  |                         |  | NO                      | Piping Run @ 10'       |  |  |
| 08                                                                                                              | 492-DUP         |                    |      |                         |         |                                       |           |           |  |                         |  |                         | FIELD DUPLICATION      |  |  |
| NOTE: OMA CALIBRATED w/ 95 ppm CH <sub>4</sub> & ZERO (0) AIR @ 1300 HRS on 5/15/97 by G. DIMARTINO'S (#A52114) |                 |                    |      |                         |         |                                       |           |           |  |                         |  |                         |                        |  |  |
| Relinquished by (signature)                                                                                     |                 | Date/Time          |      | Received by (signature) |         | Relinquished by (signature)           |           | Date/Time |  | Received by (signature) |  |                         |                        |  |  |
|                                                                                                                 |                 | 5/16/97 0900       |      |                         |         |                                       |           |           |  |                         |  |                         |                        |  |  |
| 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                                     |                 |                    |      |                         |         | Remarks DEDICATED SAMPLING TOOLS USED |           |           |  |                         |  |                         |                        |  |  |
| Turnaround time ( ) Standard 4 wks, (X) Rush 3 Days, ( ) ASAP Verbal Hrs                                        |                 |                    |      |                         |         |                                       |           |           |  |                         |  |                         |                        |  |  |



## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT  
AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

- |    |                                                                                                           |                                     |
|----|-----------------------------------------------------------------------------------------------------------|-------------------------------------|
| 1  | Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted | <input checked="" type="checkbox"/> |
| 2  | Table of Contents submitted                                                                               | <input checked="" type="checkbox"/> |
| 3  | Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted           | <input checked="" type="checkbox"/> |
| 4  | Document paginated and legible                                                                            | <input checked="" type="checkbox"/> |
| 5  | Chain of Custody submitted                                                                                | <input checked="" type="checkbox"/> |
| 6  | Samples submitted to lab within 48 hours of sample collection                                             | <input checked="" type="checkbox"/> |
| 7  | Methodology Summary submitted                                                                             | <input checked="" type="checkbox"/> |
| 8  | Laboratory Chronicle and Holding Time Check submitted                                                     | <input checked="" type="checkbox"/> |
| 9  | Results submitted on a dry weight basis                                                                   | <input checked="" type="checkbox"/> |
| 10 | Method Detection Limits submitted                                                                         | <input checked="" type="checkbox"/> |
| 11 | Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP  | <input checked="" type="checkbox"/> |

Laboratory Manager or Environmental Consultant's Signature

Date 9/16/97

Laboratory Certification #13461

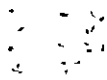
\*Refer to NJAC 7 26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP  
Methods for further guidance





## **APPENDIX F**

### **GROUNDWATER ANALYTICAL DATA PACKAGE**



# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: UST Program

## Bldg. 492

| Field Sample Location | Laboratory<br>Sample ID# | Matrix  | Date and Time<br>of Collection | Date Received |
|-----------------------|--------------------------|---------|--------------------------------|---------------|
| 492-1 5-9'            | 4925 01                  | Aqueous | 06-Nov-99 11 25                | 11/08/99      |

ANALYSIS  
FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15

ENCLOSURE  
CHAIN OF CUSTODY  
RESULTS

 4-7-00  
Daniel Wright/Date  
Laboratory Director

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| Conformance/Non-Conformance Summary | 5-7                 |
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# **CHAIN OF CUSTODY**

**000001**

# Fort Monmouth Environmental Testing Laboratory

# **METHOD SUMMARY**

## **Methodology Summary**

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

Surrogates and internal standards are added to a 5 ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

### **EPA Method 3510/8270**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

Surrogates are added to a measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene Chloride using a separatory funnel. The extract concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

# **CONFORMANCE/NON- CONFORMANCE SUMMARY**

000005

# GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

|                                                                                                                                                                                                      | Indicate<br>Yes, No, N/A |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1 Chromatograms labeled/Compounds identified<br>(Field samples and method blanks)                                                                                                                    | <u>yes</u>               |
| 2 Retention times for chromatograms provided                                                                                                                                                         | <u>yes</u>               |
| 3 GC/MS Tune Specifications                                                                                                                                                                          |                          |
| a BFB Meet Criteria                                                                                                                                                                                  | <u>yes</u>               |
| b DFTPP Meet Criteria                                                                                                                                                                                | <u>yes</u>               |
| 4 GC/MS Tuning Frequency – Performed every 24 hours for 600<br>series and 12 hours for 8000 series                                                                                                   | <u>yes</u>               |
| 5 GC/MS Calibration – Initial Calibration performed before sample<br>analysis and continuing calibration performed within 24 hours of<br>sample analysis for 600 series and 12 hours for 8000 series | <u>yes</u>               |
| 6 GC/MS Calibration requirements                                                                                                                                                                     |                          |
| a Calibration Check Compounds Meet Criteria                                                                                                                                                          | <u>yes</u>               |
| b System Performance Check Compounds Meet Criteria                                                                                                                                                   | <u>yes</u>               |
| 7 Blank Contamination – If yes, List compounds and concentrations in each blank                                                                                                                      | <u>NO</u>                |
| a VOA Fraction _____                                                                                                                                                                                 |                          |
| b B/N Fraction _____                                                                                                                                                                                 |                          |
| c Acid Fraction _____                                                                                                                                                                                |                          |
| 8 Surrogate Recoveries Meet Criteria                                                                                                                                                                 | <u>yes</u>               |
| If not met, list those compounds and their recoveries, which fall<br>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<br>as “estimated”?                                                                                                               |                          |
|                                                                                                                                                                                                      | _____                    |
| 9 Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria<br>(If not met, list those compounds and their recoveries, which fall<br>outside the acceptable range)                                | <u>yes</u>               |
| a VOA Fraction _____                                                                                                                                                                                 |                          |
| b B/N Fraction _____                                                                                                                                                                                 |                          |
| c Acid Fraction _____                                                                                                                                                                                |                          |

000006

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate  
Yes, No, N/A

- 10 Internal Standard Area/Retention Time Shift Meet Criteria  
(If not met, list those compounds, which fall outside the acceptable range)

yes

a VOA Fraction \_\_\_\_\_  
b B/N Fraction \_\_\_\_\_  
c Acid Fraction \_\_\_\_\_

- 11 Extraction Holding Time Met

yes

If not met, list the number of days exceeded for each sample \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

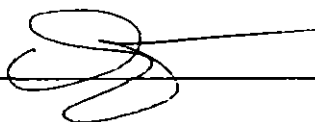
- 12 Analysis Holding Time Met

yes

If not met, list the number of days exceeded for each sample \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Laboratory Manager \_\_\_\_\_



Date \_\_\_\_\_

4-7-00

000007

# **LABORATORY CHRONICLE**

# Laboratory Chronicle

Lab ID 4925

Site Bldg 492

|                       | Date        | Hold Time |
|-----------------------|-------------|-----------|
| Date Sampled          | 11/06/99    | NA        |
| Receipt/Refrigeration | 11/06/99    | NA        |
| Extractions           |             |           |
| 1 Base Neutral        | 11/09/99    | 14 days   |
| Analyses              |             |           |
| 1 Volatile Organics   | 11/10,11/99 | 14 days   |
| 2 Base Neutral        | 11/12,13/99 | 40 Day    |

\*Samples collected and refrigerated on 11/06/99, Laboratory received the samples Monday 11/08/99

000009

# **VOLATILE ORGANICS**

**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  
**E** : Compound exceeds calibration limit

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VC001257 D  
 Operator Skelton  
 Date Acquired 10 Nov 1999 2 43 pm

Sample Name Vblk37  
 Field ID Vblk37  
 Sample Multiplier 1

| CAS#       | Compound Name             | R.T | Response | Result       | Regulatory Level (ug/l)* | MDL       | Qualifier |
|------------|---------------------------|-----|----------|--------------|--------------------------|-----------|-----------|
| 107028     | Acrolein                  |     |          | not detected | 50                       | 1 85 ug/L |           |
| 107131     | Acrylonitrile             |     |          | not detected | 50                       | 2 78 ug/L |           |
| 75650      | tert-Butyl alcohol        |     |          | not detected | nle                      | 8 52 ug/L |           |
| 1634044    | Methyl-tert-Butyl ether   |     |          | not detected | 70                       | 0 16 ug/L |           |
| 108203     | Di-isopropyl ether        |     |          | not detected | nle                      | 0 25 ug/L |           |
|            | Dichlorodifluoromethane   |     |          | not detected | nle                      | 1 68 ug/L |           |
| 74-87-3    | Chloromethane             |     |          | not detected | 30                       | 1 16 ug/L |           |
| 75-01-4    | Vinyl Chloride            |     |          | not detected | 5                        | 1 06 ug/L |           |
| 74-83-9    | Bromomethane              |     |          | not detected | 10                       | 1 10 ug/L |           |
| 75-00-3    | Chloroethane              |     |          | not detected | nle                      | 1 01 ug/L |           |
| 75-69-4    | Trichlorofluoromethane    |     |          | not detected | nle                      | 0 50 ug/L |           |
| 75 35-4    | 1,1-Dichloroethene        |     |          | not detected | 2                        | 0 24 ug/L |           |
| 67-64-1    | Acetone                   |     |          | not detected | 700                      | 1 36 ug/L |           |
| 75-15-0    | Carbon Disulfide          |     |          | not detected | nle                      | 0 46 ug/L |           |
| 75-09-2    | Methylene Chloride        |     |          | not detected | 2                        | 0 24 ug/L |           |
| 156-60-5   | trans-1,2-Dichloroethene  |     |          | not detected | 100                      | 0 16 ug/L |           |
| 75-35-3    | 1,1-Dichloroethane        |     |          | not detected | 70                       | 0 12 ug/L |           |
| 108-05-4   | Vinyl Acetate             |     |          | not detected | nle                      | 0 78 ug/L |           |
| 78-93-3    | 2-Butanone                |     |          | not detected | 300                      | 0 62 ug/L |           |
|            | cis-1,2-Dichloroethene    |     |          | not detected | 10                       | 0 17 ug/L |           |
| 67-66-3    | Chloroform                |     |          | not detected | 6                        | 0 30 ug/L |           |
| 75-55-6    | 1,1,1-Trichloroethane     |     |          | not detected | 30                       | 0 23 ug/L |           |
| 56-23-5    | Carbon Tetrachloride      |     |          | not detected | 2                        | 0 47 ug/L |           |
| 71-43-2    | Benzene                   |     |          | not detected | 1                        | 0 23 ug/L |           |
| 107 06-2   | 1,2-Dichloroethane        |     |          | not detected | 2                        | 0 18 ug/L |           |
| 79-01-6    | Trichloroethene           |     |          | not detected | 1                        | 0 23 ug/L |           |
| 78-87-5    | 1,2-Dichloropropane       |     |          | not detected | 1                        | 0 40 ug/L |           |
| 75-27-4    | Bromodichloromethane      |     |          | not detected | 1                        | 0 55 ug/L |           |
| 110-75-8   | 2-Chloroethyl vinyl ether |     |          | not detected | nle                      | 0 65 ug/L |           |
| 10061-01-5 | cis-1,3-Dichloropropene   |     |          | not detected | nle                      | 0 69 ug/L |           |
| 108 10-1   | 4-Methyl-2-Pentanone      |     |          | not detected | 400                      | 0 59 ug/L |           |
| 108 88-3   | Toluene                   |     |          | not detected | 1000                     | 0 37 ug/L |           |
| 10061-02-6 | trans-1,3-Dichloropropene |     |          | not detected | nle                      | 0 87 ug/L |           |
| 79-00-5    | 1,1,2-Trichloroethane     |     |          | not detected | 3                        | 0 48 ug/L |           |
| 127-18-4   | Tetrachloroethene         |     |          | not detected | 1                        | 0 32 ug/L |           |
| 591-78-6   | 2-Hexanone                |     |          | not detected | nle                      | 0 71 ug/L |           |
| 126-48-1   | Dibromochloromethane      |     |          | not detected | 10                       | 0 86 ug/L |           |
| 108-90-7   | Chlorobenzene             |     |          | not detected | 4                        | 0 39 ug/L |           |
| 100-41-4   | Ethylbenzene              |     |          | not detected | 700                      | 0 65 ug/L |           |
| 1330-20-7  | m+p-Xylenes               |     |          | not detected | nle                      | 1 14 ug/L |           |
| 1330-20-7  | o-Xylene                  |     |          | not detected | nle                      | 0 62 ug/L |           |
| 100-42 5   | Styrene                   |     |          | not detected | 100                      | 0 56 ug/L |           |
| 75-25-2    | Bromoform                 |     |          | not detected | 4                        | 0 70 ug/L |           |
| 79-34-5    | 1,1,2,2-Tetrachloroethane |     |          | not detected | 2                        | 0 47 ug/L |           |
| 541-73-1   | 1,3-Dichlorobenzene       |     |          | not detected | 600                      | 0 55 ug/L |           |
| 106 46 7   | 1,4-Dichlorobenzene       |     |          | not detected | 75                       | 0 57 ug/L |           |
| 95-50-1    | 1,2-Dichlorobenzene       |     |          | not detected | 600                      | 0 64 ug/L |           |

\*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6.2-Sept 9

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R T = Retention Time

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Vblk37

Lab Name FMETL NJDEP# 13461  
Project 100004 Case No 4925 Location 492 SDG No \_\_\_\_\_  
Matrx (soil/water) WATER Lab Sample ID Vblk37  
Sample wt/vol 5.0 (g/ml) ML Lab File ID VC001257.D  
Level (low/med) LOW Date Received 11/8/99  
% Moisture not dec \_\_\_\_\_ Date Analyzed 11/10/99  
GC Column RTX502 ID 0.25 (mm) Dilution Factor 1.0  
Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

CONCENTRATION UNITS

(ug/L or ug/Kg) UG/L

Number TICs found 0

| CAS NO | COMPOUND NAME | RT | EST CONC | Q |
|--------|---------------|----|----------|---|
|--------|---------------|----|----------|---|

**Volatile Analysis Report**  
**U S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VC001280 D  
 Operator Skelton  
 Date Acquired 11 Nov 1999 6 24 am

Sample Name 4925 01  
 Field ID 492-1  
 Sample Multiplier 1

| CAS#       | Compound Name             | R.T | Response | Result       | Regulatory Level (ug/l)* | MDL       | Qualifier |
|------------|---------------------------|-----|----------|--------------|--------------------------|-----------|-----------|
| 107028     | Acrolein                  |     |          | not detected | 50                       | 1 85 ug/L |           |
| 107131     | Acrylonitrile             |     |          | not detected | 50                       | 2 78 ug/L |           |
| 75650      | tert-Butyl alcohol        |     |          | not detected | nle                      | 8 52 ug/L |           |
| 1634044    | Methyl-tert-Butyl ether   |     |          | not detected | 70                       | 0 16 ug/L |           |
| 108203     | Di-isopropyl ether        |     |          | not detected | nle                      | 0 25 ug/L |           |
|            | Dichlorodifluoromethane   |     |          | not detected | nle                      | 1 68 ug/L |           |
| 74-87-3    | Chloromethane             |     |          | not detected | 30                       | 1 16 ug/L |           |
| 75-01-4    | Vinyl Chloride            |     |          | not detected | 5                        | 1 06 ug/L |           |
| 74-83-9    | Bromomethane              |     |          | not detected | 10                       | 1 10 ug/L |           |
| 75-00-3    | Chloroethane              |     |          | not detected | nle                      | 1 01 ug/L |           |
| 75 69-4    | Trichlorofluoromethane    |     |          | not detected | nle                      | 0 50 ug/L |           |
| 75-35-4    | 1,1-Dichloroethene        |     |          | not detected | 2                        | 0 24 ug/L |           |
| 67-64-1    | Acetone                   |     |          | not detected | 700                      | 1 36 ug/L |           |
| 75-15-0    | Carbon Disulfide          |     |          | not detected | nle                      | 0 46 ug/L |           |
| 75-09-2    | Methylene Chloride        |     |          | not detected | 2                        | 0 24 ug/L |           |
| 156-60-5   | trans 1,2-Dichloroethene  |     |          | not detected | 100                      | 0 16 ug/L |           |
| 75-35-3    | 1,1-Dichloroethane        |     |          | not detected | 70                       | 0 12 ug/L |           |
| 108-05-4   | Vinyl Acetate             |     |          | not detected | nle                      | 0 78 ug/L |           |
| 78-93-3    | 2-Butanone                |     |          | not detected | 300                      | 0 62 ug/L |           |
|            | cis-1,2-Dichloroethene    |     |          | not detected | 10                       | 0 17 ug/L |           |
| 67-66-3    | Chloroform                |     |          | not detected | 6                        | 0 30 ug/L |           |
| 75-55-6    | 1,1,1-Trichloroethane     |     |          | not detected | 30                       | 0 23 ug/L |           |
| 56 23-5    | Carbon Tetrachloride      |     |          | not detected | 2                        | 0 47 ug/L |           |
| 71-43-2    | Benzene                   |     |          | not detected | 1                        | 0 23 ug/L |           |
| 107-06-2   | 1,2 Dichloroethane        |     |          | not detected | 2                        | 0 18 ug/L |           |
| 79-01-6    | Trichloroethene           |     |          | not detected | 1                        | 0 23 ug/L |           |
| 78-87-5    | 1,2-Dichloropropane       |     |          | not detected | 1                        | 0 40 ug/L |           |
| 75-27-4    | Bromodichloromethane      |     |          | not detected | 1                        | 0 55 ug/L |           |
| 110-75-8   | 2-Chloroethyl vinyl ether |     |          | not detected | nle                      | 0 65 ug/L |           |
| 10061-01-5 | cis-1,3-Dichloropropene   |     |          | not detected | nle                      | 0 69 ug/L |           |
| 108-10-1   | 4-Methyl-2-Pentanone      |     |          | not detected | 400                      | 0 59 ug/L |           |
| 108-88-3   | Toluene                   |     |          | not detected | 1000                     | 0 37 ug/L |           |
| 10061-02-6 | trans-1,3-Dichloropropene |     |          | not detected | nle                      | 0 87 ug/L |           |
| 79 00-5    | 1,1,2-Trichloroethane     |     |          | not detected | 3                        | 0 48 ug/L |           |
| 127-18-4   | Tetrachloroethene         |     |          | not detected | 1                        | 0 32 ug/L |           |
| 591-78-6   | 2 Hexanone                |     |          | not detected | nle                      | 0 71 ug/L |           |
| 126-48 1   | Dibromochloromethane      |     |          | not detected | 10                       | 0 86 ug/L |           |
| 108-90-7   | Chlorobenzene             |     |          | not detected | 4                        | 0 39 ug/L |           |
| 100-41-4   | Ethylbenzene              |     |          | not detected | 700                      | 0 65 ug/L |           |
| 1330-20-7  | m+p-Xylenes               |     |          | not detected | nle                      | 1 14 ug/L |           |
| 1330-20-7  | o-Xylene                  |     |          | not detected | nle                      | 0 62 ug/L |           |
| 100-42-5   | Styrene                   |     |          | not detected | 100                      | 0 56 ug/L |           |
| 75-25-2    | Bromoform                 |     |          | not detected | 4                        | 0 70 ug/L |           |
| 79-34 5    | 1,1,2,2 Tetrachloroethane |     |          | not detected | 2                        | 0 47 ug/L |           |
| 541-73-1   | 1,3-Dichlorobenzene       |     |          | not detected | 600                      | 0 55 ug/L |           |
| 106-46-1   | 1,4 Dichlorobenzene       |     |          | not detected | 75                       | 0 57 ug/L |           |
| 95-50-1    | 1,2-Dichlorobenzene       |     |          | not detected | 600                      | 0 64 ug/L |           |

\*Higher of PQL's and Ground Water Quality Criteria as per N J A C 7 9-6.2 Sept 9

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit  
 NLE = No Limit Established  
 RT = Retention Time

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

492-1

Lab Name FMETL NJDEP# 13461  
 Project 100004 Case No 4925 Location 492 SDG No \_\_\_\_\_  
 Matrix (soil/water) WATER Lab Sample ID 4925 01  
 Sample wt/vol 5.0 (g/ml) ML Lab File ID VC001280 D  
 Level (low/med) LOW Date Received 11/8/99  
 % Moisture not dec \_\_\_\_\_ Date Analyzed 11/11/99  
 GC Column RTX502 ID 0.25 (mm) Dilution Factor 1.0  
 Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

CONCENTRATION UNITS

Number TICs found 0 (ug/L or ug/Kg) UG/L

| CAS NO | COMPOUND NAME | RT | EST CONC | Q |
|--------|---------------|----|----------|---|
|--------|---------------|----|----------|---|

# **BASE NEUTRALS**

**Semi-Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File Name    BNA03358 D  
 Operator            Bhaskar  
 Date Acquired     12-Nov-99

Sample Name        Sblk318  
 Misc Info           Sblk318 A 991109  
 Sample Multiplier   1

| CAS#      | Name                        | R.T | Response | Result       | Regulatory Level (ug/L)* | MDL       | Qualifiers |
|-----------|-----------------------------|-----|----------|--------------|--------------------------|-----------|------------|
| 110-86-1  | Pyridine                    |     |          | not detected | NLE                      | 1 83 ug/L |            |
| 62-75-9   | N-nitroso-dimethylamine     |     |          | not detected | 20                       | 0 91 ug/L |            |
| 62-53-3   | Aniline                     |     |          | not detected | NLE                      | 1 63 ug/L |            |
| 111-44-4  | bis(2-Chloroethyl)ether     |     |          | not detected | 10                       | 1 28 ug/L |            |
| 541-73-1  | 1,3-Dichlorobenzene         |     |          | not detected | 600                      | 1 21 ug/L |            |
| 106-46-7  | 1,4-Dichlorobenzene         |     |          | not detected | 75                       | 1 19 ug/L |            |
| 100-51-6  | Benzyl alcohol              |     |          | not detected | NLE                      | 1 02 ug/L |            |
| 95-50-1   | 1,2-Dichlorobenzene         |     |          | not detected | 600                      | 1 13 ug/L |            |
| 108-60-1  | bis(2-chloroisopropyl)ether |     |          | not detected | 300                      | 1 39 ug/L |            |
| 621-64-7  | n-Nitroso-di-n-propylamine  |     |          | not detected | 20                       | 0 80 ug/L |            |
| 67-72-1   | Hexachloroethane            |     |          | not detected | 10                       | 1 50 ug/L |            |
| 98-95-3   | Nitrobenzene                |     |          | not detected | 10                       | 0 97 ug/L |            |
| 78-59-1   | Isophorone                  |     |          | not detected | 100                      | 1 01 ug/L |            |
| 111-91-1  | bis(2-Chloroethoxy)methane  |     |          | not detected | NLE                      | 1 21 ug/L |            |
| 120-82-1  | 1,2,4-Trichlorobenzene      |     |          | not detected | 9                        | 1 22 ug/L |            |
| 91-20-3   | Naphthalene                 |     |          | not detected | NLE                      | 1 27 ug/L |            |
| 106-47-8  | 4-Chloroaniline             |     |          | not detected | NLE                      | 1 09 ug/L |            |
| 87-68-3   | Hexachlorobutadiene         |     |          | not detected | 1                        | 0 71 ug/L |            |
| 91-57-6   | 2-Methylnaphthalene         |     |          | not detected | NLE                      | 1 08 ug/L |            |
| 77-47-4   | Hexachlorocyclopentadiene   |     |          | not detected | 50                       | 1 32 ug/L |            |
| 91-58-7   | 2-Chloronaphthalene         |     |          | not detected | NLE                      | 1 01 ug/L |            |
| 88-74-4   | 2-Nitroaniline              |     |          | not detected | NLE                      | 0 96 ug/L |            |
| 131-11-3  | Dimethylphthalate           |     |          | not detected | 7000                     | 1 52 ug/L |            |
| 208-96-8  | Acenaphthylene              |     |          | not detected | NLE                      | 0 96 ug/L |            |
| 606-20-2  | 2,6-Dinitrotoluene          |     |          | not detected | NLE                      | 0 81 ug/L |            |
| 99-09-2   | 3-Nitroaniline              |     |          | not detected | NLE                      | 0 79 ug/L |            |
| 83-32-9   | Acenaphthene                |     |          | not detected | 400                      | 1 10 ug/L |            |
| 132-64-9  | Dibenzofuran                |     |          | not detected | NLE                      | 1 00 ug/L |            |
| 121-14-2  | 2,4-Dinitrotoluene          |     |          | not detected | 10                       | 0 87 ug/L |            |
| 84-66-2   | Diethylphthalate            |     |          | not detected | 5000                     | 1 62 ug/L |            |
| 86-73-7   | Fluorene                    |     |          | not detected | 300                      | 0 99 ug/L |            |
| 7005-72-3 | 4-Chlorophenyl phenylether  |     |          | not detected | NLE                      | 1 10 ug/L |            |
| 100-01-6  | 4-Nitroaniline              |     |          | not detected | NLE                      | 1 05 ug/L |            |
| 86-30-6   | n-Nitrosodiphenylamine      |     |          | not detected | 20                       | 1 01 ug/L |            |
| 103-33-3  | Azobenzene                  |     |          | not detected | NLE                      | 0 67 ug/L |            |
| 101-55-3  | 4-Bromophenyl-phenylether   |     |          | not detected | NLE                      | 0 76 ug/L |            |
| 118-74-1  | Hexachlorobenzene           |     |          | not detected | 10                       | 0 94 ug/L |            |
| 85-01-8   | Phenanthrene                |     |          | not detected | NLE                      | 1 23 ug/L |            |
| 120-12-7  | Anthracene                  |     |          | not detected | 2000                     | 1 12 ug/L |            |
| 84-74-2   | Di-n-butylphthalate         |     |          | not detected | 900                      | 1 70 ug/L |            |
| 206-44-0  | Fluoranthene                |     |          | not detected | 300                      | 1 64 ug/L |            |

# Semi-Volatile Analysis Report

## Page 2

Data File Name    **BNA03358 D**  
 Operator            **Bhaskar**  
 Date Acquired     **12-Nov-99**

Sample Name        **Sblk318**  
 Misc Info           **Sblk318 A 991109**  
 Sample Multiplier   **1**

| CAS#     | Name                       | R.T | Response | Result       | Regulatory Level (ug/L)* | MDL       | Qualifiers |
|----------|----------------------------|-----|----------|--------------|--------------------------|-----------|------------|
| 92-87-5  | Benzidine                  |     |          | not detected | 50                       | 4.18 ug/L |            |
| 129-00-0 | Pyrene                     |     |          | not detected | 200                      | 1.25 ug/L |            |
| 85-68-7  | Butylbenzylphthalate       |     |          | not detected | 100                      | 1.05 ug/L |            |
| 56-55-3  | Benzo[a]anthracene         |     |          | not detected | 10                       | 1.19 ug/L |            |
| 91-94-1  | 3,3'-Dichlorobenzidine     |     |          | not detected | 60                       | 1.75 ug/L |            |
| 218-01-9 | Chrysene                   |     |          | not detected | 20                       | 1.38 ug/L |            |
| 117-81-7 | bis(2-Ethylhexyl)phthalate |     |          | not detected | 30                       | 1.74 ug/L |            |
| 117-84-0 | Di-n-octylphthalate        |     |          | not detected | 100                      | 1.44 ug/L |            |
| 205-99-2 | Benzo[b]fluoranthene       |     |          | not detected | 10                       | 1.25 ug/L |            |
| 207-08-9 | Benzo[k]fluoranthene       |     |          | not detected | 2                        | 1.29 ug/L |            |
| 50-32-8  | Benzo[a]pyrene             |     |          | not detected | 20                       | 1.05 ug/L |            |
| 193-39-5 | Indeno[1,2,3-cd]pyrene     |     |          | not detected | 20                       | 0.83 ug/L |            |
| 53-70-3  | Dibenz[a,h]anthracene      |     |          | not detected | 20                       | 0.64 ug/L |            |
| 191-24-2 | Benzo[g,h,i]perylene       |     |          | not detected | NLE                      | 0.84 ug/L |            |

\* Higher of PQL's and Ground Water Criteria as per NJAC 7-9-6 2-Sept-97

### Qualifiers

E= Value Exceeds Linear Range  
 D= Value from dilution  
 B= Compound in Related Blank  
 PQL= Practical Quantitation Limit

MDL= Method Detection Limit  
 NLE= No Limit Established  
 R T =Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Sblk318

Lab Name FMETL Lab Code 13461  
 Project UST Case No 4925 Location 492 SDG No \_\_\_\_\_  
 Matrx (soil/water) WATER Lab Sample ID Sblk318  
 Sample wt/vol 1000 (g/ml) ML Lab File ID BNA03358 D  
 Level (low/med) LOW Date Received 11/8/99  
 % Moisture \_\_\_\_\_ decanted (Y/N) N Date Extracted 11/9/99  
 Concentrated Extract Volume 1000 (uL) Date Analyzed 11/12/99  
 Injection Volume 10 (uL) Dilution Factor 10  
 GPC Cleanup (Y/N) N pH 7

## CONCENTRATION UNITS

Number TICs found 0 (ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST CONC | Q |
|------------|---------------|----|----------|---|
|------------|---------------|----|----------|---|

**Semi-Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File Name    BNA03369 D  
 Operator            Bhaskar  
 Date Acquired     13-Nov-99

Sample Name        4925 01  
 Misc Info           492-1  
 Sample Multiplier   1

| CAS#      | Name                        | R.T | Response | Result       | Regulatory Level (ug/L)* | MDL  | Qualifiers |
|-----------|-----------------------------|-----|----------|--------------|--------------------------|------|------------|
| 110-86-1  | Pyridine                    |     |          | not detected | NLE                      | 1.83 | ug/L       |
| 62-75-9   | N-nitroso-dimethylamine     |     |          | not detected | 20                       | 0.91 | ug/L       |
| 62-53-3   | Aniline                     |     |          | not detected | NLE                      | 1.63 | ug/L       |
| 111-44-4  | bis(2-Chloroethyl)ether     |     |          | not detected | 10                       | 1.28 | ug/L       |
| 541-73-1  | 1,3-Dichlorobenzene         |     |          | not detected | 600                      | 1.21 | ug/L       |
| 106-46-7  | 1,4-Dichlorobenzene         |     |          | not detected | 75                       | 1.19 | ug/L       |
| 100-51-6  | Benzyl alcohol              |     |          | not detected | NLE                      | 1.02 | ug/L       |
| 95-50-1   | 1,2-Dichlorobenzene         |     |          | not detected | 600                      | 1.13 | ug/L       |
| 108-60-1  | bis(2-chloroisopropyl)ether |     |          | not detected | 300                      | 1.39 | ug/L       |
| 621-64-7  | n-Nitroso-di n-propylamine  |     |          | not detected | 20                       | 0.80 | ug/L       |
| 67-72-1   | Hexachloroethane            |     |          | not detected | 10                       | 1.50 | ug/L       |
| 98-95-3   | Nitrobenzene                |     |          | not detected | 10                       | 0.97 | ug/L       |
| 78-59-1   | Isophorone                  |     |          | not detected | 100                      | 1.01 | ug/L       |
| 111-91-1  | bis(2-Chloroethoxy)methane  |     |          | not detected | NLE                      | 1.21 | ug/L       |
| 120-82-1  | 1,2,4-Trichlorobenzene      |     |          | not detected | 9                        | 1.22 | ug/L       |
| 91-20-3   | Naphthalene                 |     |          | not detected | NLE                      | 1.27 | ug/L       |
| 106-47-8  | 4-Chloroaniline             |     |          | not detected | NLE                      | 1.09 | ug/L       |
| 87-68-3   | Hexachlorobutadiene         |     |          | not detected | 1                        | 0.71 | ug/L       |
| 91-57-6   | 2-Methylnaphthalene         |     |          | not detected | NLE                      | 1.08 | ug/L       |
| 77-47-4   | Hexachlorocyclopentadiene   |     |          | not detected | 50                       | 1.32 | ug/L       |
| 91-58-7   | 2-Chloronaphthalene         |     |          | not detected | NLE                      | 1.01 | ug/L       |
| 88-74-4   | 2-Nitroaniline              |     |          | not detected | NLE                      | 0.96 | ug/L       |
| 131-11-3  | Dimethylphthalate           |     |          | not detected | 7000                     | 1.52 | ug/L       |
| 208-96-8  | Acenaphthylene              |     |          | not detected | NLE                      | 0.96 | ug/L       |
| 606-20-2  | 2,6-Dinitrotoluene          |     |          | not detected | NLE                      | 0.81 | ug/L       |
| 99-09-2   | 3-Nitroaniline              |     |          | not detected | NLE                      | 0.79 | ug/L       |
| 83-32-9   | Acenaphthene                |     |          | not detected | 400                      | 1.10 | ug/L       |
| 132-64-9  | Dibenzofuran                |     |          | not detected | NLE                      | 1.00 | ug/L       |
| 121-14-2  | 2,4-Dinitrotoluene          |     |          | not detected | 10                       | 0.87 | ug/L       |
| 84-66-2   | Diethylphthalate            |     |          | not detected | 5000                     | 1.62 | ug/L       |
| 86-73-7   | Fluorene                    |     |          | not detected | 300                      | 0.99 | ug/L       |
| 7005-72-3 | 4-Chlorophenyl-phenylether  |     |          | not detected | NLE                      | 1.10 | ug/L       |
| 100-01-6  | 4-Nitroaniline              |     |          | not detected | NLE                      | 1.05 | ug/L       |
| 86-30-6   | n-Nitrosodiphenylamine      |     |          | not detected | 20                       | 1.01 | ug/L       |
| 103-33-3  | Azobenzene                  |     |          | not detected | NLE                      | 0.67 | ug/L       |
| 101-55-3  | 4-Bromophenyl phenylether   |     |          | not detected | NLE                      | 0.76 | ug/L       |
| 118-74-1  | Hexachlorobenzene           |     |          | not detected | 10                       | 0.94 | ug/L       |
| 85-01-8   | Phenanthrene                |     |          | not detected | NLE                      | 1.23 | ug/L       |
| 120-12-7  | Anthracene                  |     |          | not detected | 2000                     | 1.12 | ug/L       |
| 84-74-2   | Di-n-butylphthalate         |     |          | not detected | 900                      | 1.70 | ug/L       |
| 206-44-0  | Fluoranthene                |     |          | not detected | 300                      | 1.64 | ug/L       |

# Semi-Volatile Analysis Report

## Page 2

Data File Name BNA03369.D  
 Operator Bhaskar  
 Date Acquired 13-Nov-99

Sample Name 4925 01  
 Misc Info 492-1  
 Sample Multiplier 1

| CAS#     | Name                       | R.T | Response | Result       | Regulatory Level (ug/L)* | MDL       | Qualifiers |
|----------|----------------------------|-----|----------|--------------|--------------------------|-----------|------------|
| 92-87-5  | Benzidine                  |     |          | not detected | 50                       | 4.18 ug/L |            |
| 129-00-0 | Pyrene                     |     |          | not detected | 200                      | 1.25 ug/L |            |
| 85-68-7  | Butylbenzylphthalate       |     |          | not detected | 100                      | 1.05 ug/L |            |
| 56-55-3  | Benzo[a]anthracene         |     |          | not detected | 10                       | 1.19 ug/L |            |
| 91-94-1  | 3,3'-Dichlorobenzidine     |     |          | not detected | 60                       | 1.75 ug/L |            |
| 218-01-9 | Chrysene                   |     |          | not detected | 20                       | 1.38 ug/L |            |
| 117-81-7 | bis(2-Ethylhexyl)phthalate |     |          | not detected | 30                       | 1.74 ug/L |            |
| 117-84-0 | Di-n-octylphthalate        |     |          | not detected | 100                      | 1.44 ug/L |            |
| 205-99-2 | Benzo[b]fluoranthene       |     |          | not detected | 10                       | 1.25 ug/L |            |
| 207-08-9 | Benzo[k]fluoranthene       |     |          | not detected | 2                        | 1.29 ug/L |            |
| 50-32-8  | Benzo[a]pyrene             |     |          | not detected | 20                       | 1.05 ug/L |            |
| 193-39-5 | Indeno[1,2,3-cd]pyrene     |     |          | not detected | 20                       | 0.83 ug/L |            |
| 53-70-3  | Dibenz[a,h]anthracene      |     |          | not detected | 20                       | 0.64 ug/L |            |
| 191-24-2 | Benzo[g,h,i]perylene       |     |          | not detected | NLE                      | 0.84 ug/L |            |

\* Higher of PQL's and Ground Water Criteria as per NJAC 7 9-6.2-Sept-97

### Qualifiers

E= Value Exceeds Linear Range  
 D= Value from dilution  
 B= Compound in Related Blank  
 PQL= Practical Quantitation Limit

MDL= Method Detection Limit  
 NLE= No Limit Established  
 R T =Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

492-1

Lab Name FMETL Lab Code 13461  
 Project UST Case No 4925 Location 492 SDG No \_\_\_\_\_  
 Matrix (soil/water) WATER Lab Sample ID 4925 01  
 Sample wt/vol 1000 (g/ml) ML Lab File ID BNA03369 D  
 Level (low/med) LOW Date Received 11/8/99  
 % Moisture \_\_\_\_\_ decanted (Y/N) N Date Extracted 11/9/99  
 Concentrated Extract Volume 1000 (uL) Date Analyzed 11/13/99  
 Injection Volume 1 0 (uL) Dilution Factor 1 0  
 GPC Cleanup (Y/N) N pH 7

## CONCENTRATION UNITS

Number TICs found 1 (ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT   | EST CONC | Q |
|------------|---------------|------|----------|---|
| 1          | unknown       | 7.24 | 6        | J |

**SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK  
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)**

Lab Name FMETL Lab Code 13461  
 Project UST Case No 4925 Location 492 SDG No         
 Lab File ID BNA03321 D DFTPP Injection Date 10/27/99  
 Instrument ID BNA#2 DFTPP Injection Time 9 32

| m/e | ION ABUNDANCE CRITERIA             | % RELATIVE ABUNDANCE |
|-----|------------------------------------|----------------------|
| 51  | 30 0 - 80 0% of mass 198           | 60 0                 |
| 68  | Less than 2 0% of mass 69          | 0 0 ( 0 0 )1         |
| 69  | Mass 69 Relative abundance         | 56 4                 |
| 70  | Less than 2 0% of mass 69          | 0 3 ( 0 6 )1         |
| 127 | 25 0 - 75 0% of mass 198           | 53 8                 |
| 197 | Less than 1 0% of mass 198         | 0 0                  |
| 198 | Base Peak, 100% relative abundance | 100 0                |
| 199 | 5 0 to 9 0% of mass 198            | 7 1                  |
| 275 | 10 0 - 30 0% of mass 198           | 19 9                 |
| 365 | Greater than 0 75% of mass 198     | 2 0                  |
| 441 | Present, but less than mass 443    | 8 7                  |
| 442 | 40 0 - 110 0% of mass 198          | 59 1                 |
| 443 | 15 0 - 24 0% of mass 442           | 12 0 ( 20 4 )2       |

1-Value is % mass 69

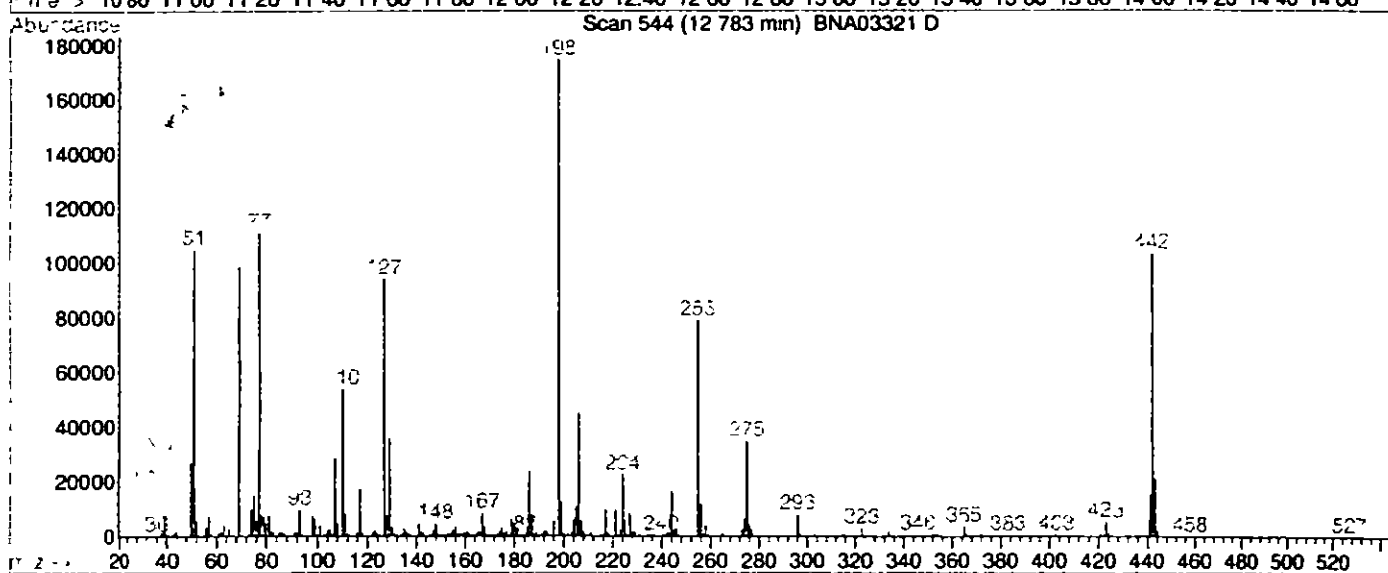
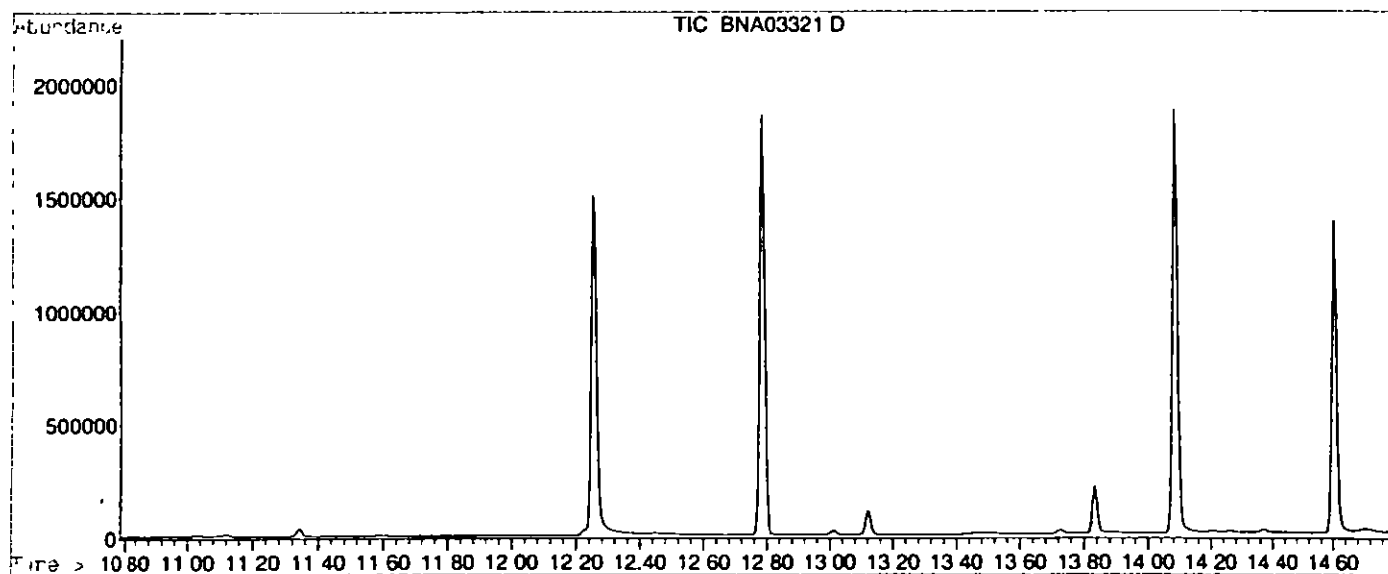
2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS

|    | FIELD ID   | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED | TIME ANALYZED |
|----|------------|---------------|-------------|---------------|---------------|
| 01 | SSTD120    | 120 PPM CAL   | BNA03323 D  | 10/27/99      | 10 55         |
| 02 | SSTD080    | 80 PPM CAL    | BNA03324 D  | 10/27/99      | 11 50         |
| 03 | SSTD050    | 50 PPM CAL    | BNA03325 D  | 10/27/99      | 12 40         |
| 04 | SSTD010    | 10 PPM CAL    | BNA03326 D  | 10/27/99      | 13 31         |
| 05 | SSTD020    | 20 PPM CAL    | BNA03327 D  | 10/27/99      | 14 20         |
| 06 | 4871 04DUP | 4871 04DUP    | BNA03332 D  | 10/27/99      | 18 28         |
| 07 | 4871 04MS  | 4871 04MS     | BNA03333 D  | 10/27/99      | 19 17         |

Data File C:\HPCHEM\1\DATA\991027\BNA03321.D  
 Acq On 27 Oct 1999 9 32 am  
 Sample DFTPP TUNE  
 Misc 50NG/2UL  
 MS Integration Params RTEINT P  
 Method C:\HPCHEM\1\METHODS\M262534.M (RTE Integrator)  
 Title BNA Calibration

Vial 99  
 Operator Bhaskar  
 Inst GC BNA 2  
 Multiplr 1 00



Spectrum Information: Scan 544

| Target Mass | Rel to Mass | Lower Limit% | Upper Limit% | Rel Abn% | Raw Abn | Result Pass/Fail |
|-------------|-------------|--------------|--------------|----------|---------|------------------|
| 51          | 198         | 30           | 60           | 60.0     | 104832  | PASS             |
| 68          | 69          | 0.00         | 2            | 0.0      | 0       | PASS             |
| 69          | 198         | 0.00         | 100          | 56.4     | 98600   | PASS             |
| 70          | 69          | 0.00         | 2            | 0.6      | 593     | PASS             |
| 127         | 198         | 40           | 60           | 53.8     | 94000   | PASS             |
| 197         | 198         | 0.00         | 1            | 0.0      | 0       | PASS             |
| 198         | 198         | 100          | 100          | 100.0    | 174720  | PASS             |
| 199         | 198         | 5            | 9            | 7.1      | 12479   | PASS             |
| 275         | 198         | 10           | 30           | 19.9     | 34848   | PASS             |
| 365         | 198         | 1            | 100          | 2.0      | 3527    | PASS             |
| 441         | 443         | 1            | 99           | 72.0     | 15134   | PASS             |
| 442         | 198         | 40           | 100          | 59.1     | 103184  | PASS             |
| 443         | 442         | 17           | 23           | 20.4     | 21008   | PASS             |

## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT  
AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

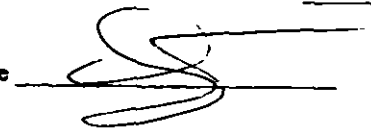
It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted
2. Table of Contents submitted
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted
4. Document paginated and legible
5. Chain of Custody submitted
6. Samples submitted to lab within 48 hours of sample collection
7. Methodology Summary submitted
8. Laboratory Chronicle and Holding Time Check submitted
9. Results submitted on a dry weight basis
10. Method Detection Limits submitted
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP

✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓  
✓

Laboratory Manager or Environmental Consultant's Signature

Date 4/7/05



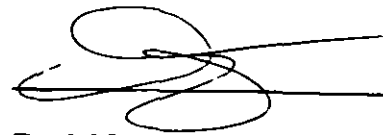
Laboratory Certification #13461

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

000057

## **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.

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke extending to the right.

**Daniel K. Wright**  
**Laboratory Manager**

000658

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



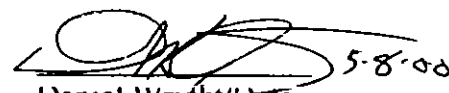
ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT UST Program

## Bldg. 492

| Field Sample Location | Laboratory<br>Sample ID# | Matrix  | Date and Time<br>of Collection | Date Received |
|-----------------------|--------------------------|---------|--------------------------------|---------------|
| Bldg 492              | 5043 01                  | Aqueous | 22-Dec-99 10 30                | 12/22/99      |

ANALYSIS  
FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15

ENCLOSURE  
CHAIN OF CUSTODY  
RESULTS

  
Daniel Wright/Date  
Laboratory Director

## **Table of Contents**

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# **CHAIN OF CUSTODY**

**000001**



**Bldg 173, SELFM-PW-EV, Fort Monmouth, NJ 07703**

**Tel (732)532-4359 Fax (732)532-6263 EMail [appleby@mail1.monmouth.army.mil](mailto:appleby@mail1.monmouth.army.mil)**

**NJDEP Certification #13461**

## Chain of Custody Record

[illegible]

000002

# **METHODOLOGY SUMMARY**

## Method Summary

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

Surrogates and internal standards are added to a 5-ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

### **EPA Method 3510/8270**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

Surrogates are added to measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene chloride using a separatory funnel. The extract concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

# **CONFORMANCE NON-CONFORMANC SUMMARY**

# 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 yes
- 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  
  - a VOA Fraction \_\_\_\_\_
  - b B/N Fraction \_\_\_\_\_
  - c Acid Fraction NA
- 8 Surrogate Recoveries Meet Criteria \_\_\_\_\_

If not met, list those compounds and their recoveries, which fall outside the acceptable range

  - a VOA Fraction \_\_\_\_\_
  - b B/N Fraction nitrobenzene 45 low, mstmd toluene 41 low 504302
  - c Acid Fraction NA

If not met, were the calculations checked and the results qualified as "estimated"?

\_\_\_\_\_
- 9 Matrix Spike/Matrix Spike Duplicate 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 NA

000006

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate  
Yes, No, N/A

- 10 Internal Standard Area/Retention Time Shift Meet Criteria  
(If not met, list those compounds, which fall outside the acceptable range)

yes

a VOA Fraction \_\_\_\_\_  
b B/N Fraction \_\_\_\_\_  
c Acid Fraction \_\_\_\_\_

- 11 Extraction Holding Time Met

yes

If not met, list the number of days exceeded for each sample \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 12 Analysis Holding Time Met

yes

If not met, list the number of days exceeded for each sample \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Laboratory Manager \_\_\_\_\_

Date

5-8-00

000007

# **LABORATORY CHRONICLE**

# Laboratory Chronicle

Lab ID 5043

Site Bldg 492

|                       | Date     | Hold Time |
|-----------------------|----------|-----------|
| Date Sampled          | 12/22/99 | NA        |
| Receipt/Refrigeration | 12/22/99 | NA        |

## Extractions

|   |              |          |         |
|---|--------------|----------|---------|
| 1 | Base Neutral | 12/29/99 | 14 days |
|---|--------------|----------|---------|

## Analyses

|   |                   |          |         |
|---|-------------------|----------|---------|
| 1 | Volatile Organics | 01/03/99 | 14 days |
| 2 | Base Neutral      | 01/04/00 | 40 days |

000003

# **VOLATILE ORGANICS**

000010

**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  
**E** : Compound exceeds calibration limit

**Volatile Analysis Report**  
**U S Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VB005266 D  
 Operator Skelton  
 Date Acquired 3 Jan 2000 6 23 pm

Sample Name Vb1k160  
 Field ID Vb1k160  
 Sample Multiplier 1

| CAS#       | Compound Name             | R T | Response | Result       | Regulatory Level (ug/l)* | MDL       | Qualifier |
|------------|---------------------------|-----|----------|--------------|--------------------------|-----------|-----------|
| 107028     | Acrolein                  |     |          | not detected | 50                       | 1 85 ug/L |           |
| 107131     | Acrylonitrile             |     |          | not detected | 50                       | 2 78 ug/L |           |
| 75650      | tert-Butyl alcohol        |     |          | not detected | nle                      | 8 52 ug/L |           |
| 1634044    | Methyl-tert-Butyl ether   |     |          | not detected | 70                       | 0 16 ug/L |           |
| 108203     | Di-isopropyl ether        |     |          | not detected | nle                      | 0 25 ug/L |           |
| 75718      | Dichlorodifluoromethane   |     |          | not detected | nle                      | 1 68 ug/L |           |
| 74-87-3    | Chloromethane             |     |          | not detected | 30                       | 1 16 ug/L |           |
| 75-01-4    | Vinyl Chloride            |     |          | not detected | 5                        | 1 06 ug/L |           |
| 74-83-9    | Bromomethane              |     |          | not detected | 10                       | 1 10 ug/L |           |
| 75-00-3    | Chloroethane              |     |          | not detected | nle                      | 1 01 ug/L |           |
| 75-69-4    | Trichlorofluoromethane    |     |          | not detected | nle                      | 0 50 ug/L |           |
| 75-35-4    | 1,1-Dichloroethene        |     |          | not detected | 2                        | 0 24 ug/L |           |
| 67-64-1    | Acetone                   |     |          | not detected | 700                      | 1 36 ug/L |           |
| 75-15-0    | Carbon Disulfide          |     |          | not detected | nle                      | 0 46 ug/L |           |
| 75-09-2    | Methylene Chloride        |     |          | not detected | 2                        | 0 24 ug/L |           |
| 156-60-5   | trans-1,2-Dichloroethene  |     |          | not detected | 100                      | 0 16 ug/L |           |
| 75-34-3    | 1,1-Dichloroethane        |     |          | not detected | 70                       | 0 12 ug/L |           |
| 108-05-4   | Vinyl Acetate             |     |          | not detected | nle                      | 0 78 ug/L |           |
| 78-93-3    | 2-Butanone                |     |          | not detected | 300                      | 0 62 ug/L |           |
| 156-59-4   | cis-1,2-Dichloroethene    |     |          | not detected | 10                       | 0 17 ug/L |           |
| 67-66-3    | Chloroform                |     |          | not detected | 6                        | 0 30 ug/L |           |
| 75-55-6    | 1,1,1-Trichloroethane     |     |          | not detected | 30                       | 0 23 ug/L |           |
| 56-23-5    | Carbon Tetrachloride      |     |          | not detected | 2                        | 0 47 ug/L |           |
| 71-43-2    | Benzene                   |     |          | not detected | 1                        | 0 23 ug/L |           |
| 107-06-2   | 1,2-Dichloroethane        |     |          | not detected | 2                        | 0 18 ug/L |           |
| 79-01-6    | Trichloroethene           |     |          | not detected | 1                        | 0 23 ug/L |           |
| 78-87-5    | 1,2-Dichloropropane       |     |          | not detected | 1                        | 0 40 ug/L |           |
| 75-27-4    | Bromodichloromethane      |     |          | not detected | 1                        | 0 55 ug/L |           |
| 110-75-8   | 2-Chloroethyl vinyl ether |     |          | not detected | nle                      | 0 65 ug/L |           |
| 10061-01-5 | cis-1,3-Dichloropropene   |     |          | not detected | nle                      | 0 69 ug/L |           |
| 108-10-1   | 4-Methyl-2-Pentanone      |     |          | not detected | 400                      | 0 59 ug/L |           |
| 108-88-3   | Toluene                   |     |          | not detected | 1000                     | 0 37 ug/L |           |
| 10061-02-6 | trans-1,3-Dichloropropene |     |          | not detected | nle                      | 0 87 ug/L |           |
| 79-00-5    | 1,1,2-Trichloroethane     |     |          | not detected | 3                        | 0 48 ug/L |           |
| 127-18-4   | Tetrachloroethene         |     |          | not detected | 1                        | 0 32 ug/L |           |
| 591-78-6   | 2-Hexanone                |     |          | not detected | nle                      | 0 71 ug/L |           |
| 126-48-1   | Dibromochloromethane      |     |          | not detected | 10                       | 0 86 ug/L |           |
| 108-90-7   | Chlorobenzene             |     |          | not detected | 4                        | 0 39 ug/L |           |
| 100-41-4   | Ethylbenzene              |     |          | not detected | 700                      | 0 65 ug/L |           |
| 1330-20-7  | m+p-Xylenes               |     |          | not detected | nle                      | 1 14 ug/L |           |
| 1330-20-7  | o-Xylene                  |     |          | not detected | nle                      | 0 62 ug/L |           |
| 100-42-5   | Styrene                   |     |          | not detected | 100                      | 0 56 ug/L |           |
| 75-25-2    | Bromoform                 |     |          | not detected | 4                        | 0 70 ug/L |           |
| 79-34-5    | 1,1,2,2-Tetrachloroethane |     |          | not detected | 2                        | 0 47 ug/L |           |
| 541-73-1   | 1,3-Dichlorobenzene       |     |          | not detected | 600                      | 0 55 ug/L |           |
| 106-46-7   | 1,4-Dichlorobenzene       |     |          | not detected | 75                       | 0 57 ug/L |           |
| 95-50-1    | 1,2-Dichlorobenzene       |     |          | not detected | 600                      | 0 64 ug/L |           |

\*Higher of PQL's and Ground Water Quality Criteria as per N J A C 7 9 6 2-Sept-9

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R T = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID

VbIk160

Lab Name FMETL Project 100004  
NJDEP# 13461 Case No 5043 Location 492 SDG No \_\_\_\_\_  
Matrix (soil/water) WATER Lab Sample ID VbIk160  
Sample wt/vol 5.0 (g/ml) ML Lab File ID VB005266 D  
Level (low/med) LOW Date Received 12/22/99  
% Moisture not dec \_\_\_\_\_ Date Analyzed 1/3/00  
GC Column RTX502 ID 0.25 (mm) Dilution Factor 1.0  
Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

## CONCENTRATION UNITS

Number TICs found 0 (ug/L or ug/Kg) UG/L

| CAS NO | COMPOUND NAME | RT | EST CONC | Q |
|--------|---------------|----|----------|---|
|--------|---------------|----|----------|---|

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VB005267 D  
 Operator Skelton  
 Date Acquired 3 Jan 2000 7 04 pm

Sample Name 5043 01  
 Field ID Bldg492  
 Sample Multiplier 1

| CAS#       | Compound Name             | R.T | Response | Result       | Regulatory Level (ug/l)* | MDL       | Qualifier |
|------------|---------------------------|-----|----------|--------------|--------------------------|-----------|-----------|
| 107028     | Acrolein                  |     |          | not detected | 50                       | 1 85 ug/L |           |
| 107131     | Acrylonitrile             |     |          | not detected | 50                       | 2 78 ug/L |           |
| 75650      | tert-Butyl alcohol        |     |          | not detected | nle                      | 8 52 ug/L |           |
| 1634044    | Methyl-tert Butyl ether   |     |          | not detected | 70                       | 0 16 ug/L |           |
| 108203     | Di-isopropyl ether        |     |          | not detected | nle                      | 0 25 ug/L |           |
| 75718      | Dichlorodifluoromethane   |     |          | not detected | nle                      | 1 68 ug/L |           |
| 74-87-3    | Chloromethane             |     |          | not detected | 30                       | 1 16 ug/L |           |
| 75-01-4    | Vinyl Chloride            |     |          | not detected | 5                        | 1 06 ug/L |           |
| 74 83-9    | Bromomethane              |     |          | not detected | 10                       | 1 10 ug/L |           |
| 75-00-3    | Chloroethane              |     |          | not detected | nle                      | 1 01 ug/L |           |
| 75-69-4    | Trichlorofluoromethane    |     |          | not detected | nle                      | 0 50 ug/L |           |
| 75-35-4    | 1,1-Dichloroethene        |     |          | not detected | 2                        | 0 24 ug/L |           |
| 67-64-1    | Acetone                   |     |          | not detected | 700                      | 1 36 ug/L |           |
| 75-15-0    | Carbon Disulfide          |     |          | not detected | nle                      | 0 46 ug/L |           |
| 75-09-2    | Methylene Chloride        |     |          | not detected | 2                        | 0 24 ug/L |           |
| 156-60 5   | trans-1,2-Dichloroethene  |     |          | not detected | 100                      | 0 16 ug/L |           |
| 75-34-3    | 1,1 Dichloroethane        |     |          | not detected | 70                       | 0 12 ug/L |           |
| 108-05-4   | Vinyl Acetate             |     |          | not detected | nle                      | 0 78 ug/L |           |
| 78-93-3    | 2-Butanone                |     |          | not detected | 300                      | 0 62 ug/L |           |
| 156-59-4   | cis-1,2-Dichloroethene    |     |          | not detected | 10                       | 0 17 ug/L |           |
| 67-66-3    | Chloroform                |     |          | not detected | 6                        | 0 30 ug/L |           |
| 75 55-6    | 1,1,1-Trichloroethane     |     |          | not detected | 30                       | 0 23 ug/L |           |
| 56-23-5    | Carbon Tetrachloride      |     |          | not detected | 2                        | 0 47 ug/L |           |
| 71-43-2    | Benzene                   |     |          | not detected | 1                        | 0 23 ug/L |           |
| 107-06-2   | 1,2-Dichloroethane        |     |          | not detected | 2                        | 0 18 ug/L |           |
| 79-01-6    | Trichloroethene           |     |          | not detected | 1                        | 0 23 ug/L |           |
| 78-87-5    | 1,2-Dichloropropane       |     |          | not detected | 1                        | 0 40 ug/L |           |
| 75-27-4    | Bromodichloromethane      |     |          | not detected | 1                        | 0 55 ug/L |           |
| 110-75-8   | 2-Chloroethyl vinyl ether |     |          | not detected | nle                      | 0 65 ug/L |           |
| 10061-01-5 | cis-1,3 Dichloropropene   |     |          | not detected | nle                      | 0 69 ug/L |           |
| 108-10-1   | 4-Methyl-2-Pentanone      |     |          | not detected | 400                      | 0 59 ug/L |           |
| 108-88 3   | Toluene                   |     |          | not detected | 1000                     | 0 37 ug/L |           |
| 10061 02 6 | trans 1,3 Dichloropropene |     |          | not detected | nle                      | 0 87 ug/L |           |
| 79-00-5    | 1,1,2-Trichloroethane     |     |          | not detected | 3                        | 0 48 ug/L |           |
| 127-18-4   | Tetrachloroethene         |     |          | not detected | 1                        | 0 32 ug/L |           |
| 591-78-6   | 2-Hexanone                |     |          | not detected | nle                      | 0 71 ug/L |           |
| 126-48-1   | Dibromochloromethane      |     |          | not detected | 10                       | 0 86 ug/L |           |
| 108-90-7   | Chlorobenzene             |     |          | not detected | 4                        | 0 39 ug/L |           |
| 100-41-4   | Ethylbenzene              |     |          | not detected | 700                      | 0 65 ug/L |           |
| 1330-20-7  | m+p-Xylenes               |     |          | not detected | nle                      | 1 14 ug/L |           |
| 1330-20-7  | o-Xylene                  |     |          | not detected | nle                      | 0 62 ug/L |           |
| 100-42 5   | Styrene                   |     |          | not detected | 100                      | 0 56 ug/L |           |
| 75 25 2    | Bromoform                 |     |          | not detected | 4                        | 0 70 ug/L |           |
| 79-34-5    | 1,1,2,2-Tetrachloroethane |     |          | not detected | 2                        | 0 47 ug/L |           |
| 541 73-1   | 1,3-Dichlorobenzene       |     |          | not detected | 600                      | 0 55 ug/L |           |
| 106-46-7   | 1,4-Dichlorobenzene       |     |          | not detected | 75                       | 0 57 ug/L |           |
| 95-50-1    | 1,2-Dichlorobenzene       |     |          | not detected | 600                      | 0 64 ug/L |           |

\*Higher of PQL's and Ground Water Quality Criteria as per N J A C 7 9-6 2 Sept 9

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R T = Retention Time

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID

**Bldg492**

Lab Name FMETL Project 100004  
 NJDEP# 13461 Case No 5043 Location 492 SDG No \_\_\_\_\_  
 Matrix (soil/water) WATER Lab Sample ID 5043 01  
 Sample wt/vol 5 0 (g/ml) ML Lab File ID VB005267 D  
 Level (low/med) LOW Date Received 12/22/99  
 % Moisture not dec \_\_\_\_\_ Date Analyzed 1/3/00  
 GC Column RTX502 ID 0 25 (mm) Dilution Factor 1 0  
 Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

CONCENTRATION UNITS

Number TICs found 0 (ug/L or ug/Kg) UG/L

| CAS NO | COMPOUND NAME | RT | EST CONC | Q |
|--------|---------------|----|----------|---|
|--------|---------------|----|----------|---|

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File **VB005268.D**  
 Operator **Skelton**  
 Date Acquired **3 Jan 2000 7 45 pm**

Sample Name **5043 02**  
 Field ID **Dupe**  
 Sample Multiplier **1**

| CAS#       | Compound Name             | R.T | Response | Result       | Regulatory Level (ug/l)* | MDL       | Qualifier |
|------------|---------------------------|-----|----------|--------------|--------------------------|-----------|-----------|
| 107028     | Acrolein                  |     |          | not detected | 50                       | 1.85 ug/L |           |
| 107131     | Acrylonitrile             |     |          | not detected | 50                       | 2.78 ug/L |           |
| 75650      | tert-Butyl alcohol        |     |          | not detected | nle                      | 8.52 ug/L |           |
| 1634044    | Methyl-tert-Butyl ether   |     |          | not detected | 70                       | 0.16 ug/L |           |
| 108203     | Di-isopropyl ether        |     |          | not detected | nle                      | 0.25 ug/L |           |
| 75718      | Dichlorodifluoromethane   |     |          | not detected | nle                      | 1.68 ug/L |           |
| 74-87-3    | Chloromethane             |     |          | not detected | 30                       | 1.16 ug/L |           |
| 75-01-4    | Vinyl Chloride            |     |          | not detected | 5                        | 1.06 ug/L |           |
| 74-83-9    | Bromomethane              |     |          | not detected | 10                       | 1.10 ug/L |           |
| 75-00-3    | Chloroethane              |     |          | not detected | nle                      | 1.01 ug/L |           |
| 75-69-4    | Trichlorofluoromethane    |     |          | not detected | nle                      | 0.50 ug/L |           |
| 75-35-4    | 1,1-Dichloroethene        |     |          | not detected | 2                        | 0.24 ug/L |           |
| 67-64-1    | Acetone                   |     |          | not detected | 700                      | 1.36 ug/L |           |
| 75-15-0    | Carbon Disulfide          |     |          | not detected | nle                      | 0.46 ug/L |           |
| 75-09-2    | Methylene Chloride        |     |          | not detected | 2                        | 0.24 ug/L |           |
| 156-60-5   | trans-1,2-Dichloroethene  |     |          | not detected | 100                      | 0.16 ug/L |           |
| 75-34-3    | 1,1-Dichloroethane        |     |          | not detected | 70                       | 0.12 ug/L |           |
| 108-05-4   | Vinyl Acetate             |     |          | not detected | nle                      | 0.78 ug/L |           |
| 78-93-3    | 2-Butanone                |     |          | not detected | 300                      | 0.62 ug/L |           |
| 156-59-4   | cis-1,2-Dichloroethene    |     |          | not detected | 10                       | 0.17 ug/L |           |
| 67-66-3    | Chloroform                |     |          | not detected | 6                        | 0.30 ug/L |           |
| 75-55-6    | 1,1,1-Trichloroethane     |     |          | not detected | 30                       | 0.23 ug/L |           |
| 56-23-5    | Carbon Tetrachloride      |     |          | not detected | 2                        | 0.47 ug/L |           |
| 71-43-2    | Benzene                   |     |          | not detected | 1                        | 0.23 ug/L |           |
| 107-06-2   | 1,2-Dichloroethane        |     |          | not detected | 2                        | 0.18 ug/L |           |
| 79-01-6    | Trichloroethene           |     |          | not detected | 1                        | 0.23 ug/L |           |
| 78-87-5    | 1,2-Dichloropropane       |     |          | not detected | 1                        | 0.40 ug/L |           |
| 75-27-4    | Bromodichloromethane      |     |          | not detected | 1                        | 0.55 ug/L |           |
| 110-75-8   | 2-Chloroethyl vinyl ether |     |          | not detected | nle                      | 0.65 ug/L |           |
| 10061-01-5 | cis-1,3-Dichloropropene   |     |          | not detected | nle                      | 0.69 ug/L |           |
| 108-10-1   | 4-Methyl-2-Pentanone      |     |          | not detected | 400                      | 0.59 ug/L |           |
| 108-88-3   | Toluene                   |     |          | not detected | 1000                     | 0.37 ug/L |           |
| 10061-02-6 | trans-1,3-Dichloropropene |     |          | not detected | nle                      | 0.87 ug/L |           |
| 79-00-5    | 1,1,2-Trichloroethane     |     |          | not detected | 3                        | 0.48 ug/L |           |
| 127-18-4   | Tetrachloroethene         |     |          | not detected | 1                        | 0.32 ug/L |           |
| 591-78-6   | 2-Hexanone                |     |          | not detected | nle                      | 0.71 ug/L |           |
| 126-48-1   | Dibromochloromethane      |     |          | not detected | 10                       | 0.86 ug/L |           |
| 108-90-7   | Chlorobenzene             |     |          | not detected | 4                        | 0.39 ug/L |           |
| 100-41-4   | Ethylbenzene              |     |          | not detected | 700                      | 0.65 ug/L |           |
| 1330-20-7  | m+p-Xylenes               |     |          | not detected | nle                      | 1.14 ug/L |           |
| 1330-20-7  | o-Xylene                  |     |          | not detected | nle                      | 0.62 ug/L |           |
| 100-42-5   | Styrene                   |     |          | not detected | 100                      | 0.56 ug/L |           |
| 75-25-2    | Bromoform                 |     |          | not detected | 4                        | 0.70 ug/L |           |
| 79-34-5    | 1,1,2,2-Tetrachloroethane |     |          | not detected | 2                        | 0.47 ug/L |           |
| 541-73-1   | 1,3-Dichlorobenzene       |     |          | not detected | 600                      | 0.55 ug/L |           |
| 106-46-7   | 1,4-Dichlorobenzene       |     |          | not detected | 75                       | 0.57 ug/L |           |
| 95-50-1    | 1,2-Dichlorobenzene       |     |          | not detected | 600                      | 0.64 ug/L |           |

\*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6.2 Sept 9

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID

**Dupe**

Lab Name FMETL Project 100004  
 NJDEP# 13461 Case No 5043 Location 492 SDG No \_\_\_\_\_  
 Matrix (soil/water) WATER Lab Sample ID 5043 02  
 Sample wt/vol 5 0 (g/ml) ML Lab File ID VB005268 D  
 Level (low/med) LOW Date Received 12/22/99  
 % Moisture not dec \_\_\_\_\_ Date Analyzed 1/3/00  
 GC Column RTX502 ID 0 25 (mm) Dilution Factor 1 0  
 Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

CONCENTRATION UNITS

Number TICs found 0 (ug/L or ug/Kg) UG/L

| CAS NO | COMPOUND NAME | RT | EST CONC | Q |
|--------|---------------|----|----------|---|
|--------|---------------|----|----------|---|

# **BASE NEUTRAL**

**Semi-Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File Name **BNA03495.D**  
 Operator **Bhaskar**  
 Date Acquired **4-Jan-00**

Sample Name **Sblk331**  
 Misc Info **Sblk331 A 991229**  
 Sample Multiplier **1**

| CAS#      | Name                           | R.T | Response | Result       | Regulatory Level (ug/L)* | MDL       | Qualifiers |
|-----------|--------------------------------|-----|----------|--------------|--------------------------|-----------|------------|
| 110-86-1  | Pyridine                       |     |          | not detected | NLE                      | 1 83 ug/L |            |
| 62-75-9   | N-nitroso-dimethylamine        |     |          | not detected | 20                       | 0 91 ug/L |            |
| 62-53-3   | Aniline                        |     |          | not detected | NLE                      | 1 63 ug/L |            |
| 111-44-4  | bis(2-Chloroethyl)ether        |     |          | not detected | 10                       | 1 28 ug/L |            |
| 541-73-1  | 1,3-Dichlorobenzene            |     |          | not detected | 600                      | 1 21 ug/L |            |
| 106-46-7  | 1,4-Dichlorobenzene            |     |          | not detected | 75                       | 1 19 ug/L |            |
| 100-51-6  | Benzyl alcohol                 |     |          | not detected | NLE                      | 1 02 ug/L |            |
| 95-50-1   | 1,2-Dichlorobenzene            |     |          | not detected | 600                      | 1 13 ug/L |            |
| 108-60-1  | bis(2-chloroisopropyl)ether    |     |          | not detected | 300                      | 1 39 ug/L |            |
| 621-64-7  | alpha Nitroso-di-n-propylamine |     |          | not detected | 20                       | 0 80 ug/L |            |
| 67-72-1   | Hexachloroethane               |     |          | not detected | 10                       | 1 50 ug/L |            |
| 98-95-3   | Nitrobenzene                   |     |          | not detected | 10                       | 0 97 ug/L |            |
| 78-59-1   | Isophorone                     |     |          | not detected | 100                      | 1 01 ug/L |            |
| 111-91-1  | bis(2-Chloroethoxy)methane     |     |          | not detected | NLE                      | 1 21 ug/L |            |
| 120-82-1  | 1,2,4-Trichlorobenzene         |     |          | not detected | 9                        | 1 22 ug/L |            |
| 91-20-3   | Naphthalene                    |     |          | not detected | NLE                      | 1 27 ug/L |            |
| 106-47-8  | 4-Chloroaniline                |     |          | not detected | NLE                      | 1 09 ug/L |            |
| 87-68-3   | Hexachlorobutadiene            |     |          | not detected | 1                        | 0 71 ug/L |            |
| 91-57-6   | 2-Methylnaphthalene            |     |          | not detected | NLE                      | 1 08 ug/L |            |
| 77-47-4   | Hexachlorocyclopentadiene      |     |          | not detected | 50                       | 1 32 ug/L |            |
| 91-58-7   | 2-Chloronaphthalene            |     |          | not detected | NLE                      | 1 01 ug/L |            |
| 88-74-4   | 2-Nitroaniline                 |     |          | not detected | NLE                      | 0 96 ug/L |            |
| 131-11-3  | Dimethylphthalate              |     |          | not detected | 7000                     | 1 52 ug/L |            |
| 208-96-8  | Acenaphthylene                 |     |          | not detected | NLE                      | 0 96 ug/L |            |
| 606-20-2  | 2,6-Dinitrotoluene             |     |          | not detected | NLE                      | 0 81 ug/L |            |
| 99-09-2   | 3-Nitroaniline                 |     |          | not detected | NLE                      | 0 79 ug/L |            |
| 83-32-9   | Acenaphthene                   |     |          | not detected | 400                      | 1 10 ug/L |            |
| 132-64-9  | Dibenzofuran                   |     |          | not detected | NLE                      | 1 00 ug/L |            |
| 121-14-2  | 2,4-Dinitrotoluene             |     |          | not detected | 10                       | 0 87 ug/L |            |
| 84-66-2   | Diethylphthalate               |     |          | not detected | 5000                     | 1 62 ug/L |            |
| 86-73-7   | Fluorene                       |     |          | not detected | 300                      | 0 99 ug/L |            |
| 7005-72-3 | 4-Chlorophenyl-phenylether     |     |          | not detected | NLE                      | 1 10 ug/L |            |
| 100-01-6  | 4-Nitroaniline                 |     |          | not detected | NLE                      | 1 05 ug/L |            |
| 86-30-6   | alpha-Nitrosodiphenylamine     |     |          | not detected | 20                       | 1 01 ug/L |            |
| 103-33-3  | Azobenzene                     |     |          | not detected | NLE                      | 0 67 ug/L |            |
| 101-55-3  | 4-Bromophenyl-phenylether      |     |          | not detected | NLE                      | 0 76 ug/L |            |
| 118-74-1  | Hexachlorobenzene              |     |          | not detected | 10                       | 0 94 ug/L |            |
| 85-01-8   | Phenanthrene                   |     |          | not detected | NLE                      | 1 23 ug/L |            |
| 120-12-7  | Anthracene                     |     |          | not detected | 2000                     | 1 12 ug/L |            |
| 84-74-2   | Di-n-butylphthalate            |     |          | not detected | 900                      | 1 70 ug/L |            |
| 206-44-0  | Fluoranthene                   |     |          | not detected | 300                      | 1 64 ug/L |            |

# Semi-Volatile Analysis Report

## Page 2

Data File Name    **BNA03495 D**  
 Operator            **Bhaskar**  
 Date Acquired     **4-Jan-00**

Sample Name        **Sblk331**  
 Misc Info           **Sblk331 A 991229**  
 Sample Multiplier   **1**

| CAS#     | Name                       | R.T | Response | Result       | Regulatory Level (ug/L)* | MDL       | Qualifiers |
|----------|----------------------------|-----|----------|--------------|--------------------------|-----------|------------|
| 92-87-5  | Benzidine                  |     |          | not detected | 50                       | 4.18 ug/L |            |
| 129-00-0 | Pyrene                     |     |          | not detected | 200                      | 1.25 ug/L |            |
| 85-68-7  | Butylbenzylphthalate       |     |          | not detected | 100                      | 1.05 ug/L |            |
| 56-55-3  | Benzo[a]anthracene         |     |          | not detected | 10                       | 1.19 ug/L |            |
| 91-94-1  | 3,3'-Dichlorobenzidine     |     |          | not detected | 60                       | 1.75 ug/L |            |
| 218-01-9 | Chrysene                   |     |          | not detected | 20                       | 1.38 ug/L |            |
| 117-81-7 | bis(2-Ethylhexyl)phthalate |     |          | not detected | 30                       | 1.74 ug/L |            |
| 117-84-0 | Di-n-octylphthalate        |     |          | not detected | 100                      | 1.44 ug/L |            |
| 205-99-2 | Benzo[b]fluoranthene       |     |          | not detected | 10                       | 1.25 ug/L |            |
| 207-08-9 | Benzo[k]fluoranthene       |     |          | not detected | 2                        | 1.29 ug/L |            |
| 50-32-8  | Benzo[a]pyrene             |     |          | not detected | 20                       | 1.05 ug/L |            |
| 193-39-5 | Indeno[1,2,3-cd]pyrene     |     |          | not detected | 20                       | 0.83 ug/L |            |
| 53-70-3  | Dibenz[a,h]anthracene      |     |          | not detected | 20                       | 0.64 ug/L |            |
| 191-24-2 | Benzo[g,h,i]perylene       |     |          | not detected | NLE                      | 0.84 ug/L |            |

\* Higher of PQL's and Ground Water Criteria as per NJAC 7-9-6.2-Sept-97

### Qualifiers

E= Value Exceeds Linear Range  
 D= Value from dilution  
 B= Compound in Related Blank  
 PQL= Practical Quantitation Limit

MDL= Method Detection Limit  
 NLE= No Limit Established  
 R T =Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Sblk331

Lab Name FMETL Lab Code 13461  
 Project 100004 Case No 5043 Location Bld 492 SDG No           
 Matrx (soil/water) WATER Lab Sample ID Sblk331  
 Sample wt/vol 1000 (g/ml) ML Lab File ID BNA03495 D  
 Level (low/med) LOW Date Received 12/22/99  
 % Moisture          decanted (Y/N) N Date Extracted 12/29/99  
 Concentrated Extract Volume 1000 (uL) Date Analyzed 1/4/00  
 Injection Volume 10 (uL) Dilution Factor 10  
 GPC Cleanup (Y/N) N pH 7

## CONCENTRATION UNITS

 Number TICs found 1 (ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT    | EST CONC | Q |
|------------|---------------|-------|----------|---|
| 1          | unknown       | 10 15 | 57       | J |

**Semi-Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File Name    **BNA03499 D**  
 Operator            **Bhaskar**  
 Date Acquired     **4-Jan-00**

Sample Name        **5043 01**  
 Misc Info           **Bldg 492**  
 Sample Multiplier   **1**

| CAS#      | Name                        | R.T | Response | Result       | Regulatory Level (ug/L)* | MDL       | Qualifiers |
|-----------|-----------------------------|-----|----------|--------------|--------------------------|-----------|------------|
| 110-86-1  | Pyridine                    |     |          | not detected | NLE                      | 1.83 ug/L |            |
| 62-75-9   | N-nitroso-dimethylamine     |     |          | not detected | 20                       | 0.91 ug/L |            |
| 62-53-3   | Aniline                     |     |          | not detected | NLE                      | 1.63 ug/L |            |
| 111-44-4  | bis(2-Chloroethyl)ether     |     |          | not detected | 10                       | 1.28 ug/L |            |
| 541-73-1  | 1,3-Dichlorobenzene         |     |          | not detected | 600                      | 1.21 ug/L |            |
| 106-46-7  | 1,4-Dichlorobenzene         |     |          | not detected | 75                       | 1.19 ug/L |            |
| 100-51-6  | Benzyl alcohol              |     |          | not detected | NLE                      | 1.02 ug/L |            |
| 95-50-1   | 1,2-Dichlorobenzene         |     |          | not detected | 600                      | 1.13 ug/L |            |
| 108-60-1  | bis(2-chloroisopropyl)ether |     |          | not detected | 300                      | 1.39 ug/L |            |
| 621-64-7  | n-Nitroso-di-n-propylamine  |     |          | not detected | 20                       | 0.80 ug/L |            |
| 67-72-1   | Hexachloroethane            |     |          | not detected | 10                       | 1.50 ug/L |            |
| 98-95-3   | Nitrobenzene                |     |          | not detected | 10                       | 0.97 ug/L |            |
| 78-59-1   | Isophorone                  |     |          | not detected | 100                      | 1.01 ug/L |            |
| 111-91-1  | bis(2-Chloroethoxy)methane  |     |          | not detected | NLE                      | 1.21 ug/L |            |
| 120-82-1  | 1,2,4-Trichlorobenzene      |     |          | not detected | 9                        | 1.22 ug/L |            |
| 91-20-3   | Naphthalene                 |     |          | not detected | NLE                      | 1.27 ug/L |            |
| 106-47-8  | 4-Chloroaniline             |     |          | not detected | NLE                      | 1.09 ug/L |            |
| 87-68-3   | Hexachlorobutadiene         |     |          | not detected | 1                        | 0.71 ug/L |            |
| 91-57-6   | 2-Methylnaphthalene         |     |          | not detected | NLE                      | 1.08 ug/L |            |
| 77-47-4   | Hexachlorocyclopentadiene   |     |          | not detected | 50                       | 1.32 ug/L |            |
| 91-58-7   | 2-Chloronaphthalene         |     |          | not detected | NLE                      | 1.01 ug/L |            |
| 88-74-4   | 2-Nitroaniline              |     |          | not detected | NLE                      | 0.96 ug/L |            |
| 131-11-3  | Dimethylphthalate           |     |          | not detected | 7000                     | 1.52 ug/L |            |
| 208-96-8  | Acenaphthylene              |     |          | not detected | NLE                      | 0.96 ug/L |            |
| 606-20-2  | 2,6-Dinitrotoluene          |     |          | not detected | NLE                      | 0.81 ug/L |            |
| 99-09-2   | 3-Nitroaniline              |     |          | not detected | NLE                      | 0.79 ug/L |            |
| 83-32-9   | Acenaphthene                |     |          | not detected | 400                      | 1.10 ug/L |            |
| 132-64-9  | Dibenzofuran                |     |          | not detected | NLE                      | 1.00 ug/L |            |
| 121-14-2  | 2,4-Dinitrotoluene          |     |          | not detected | 10                       | 0.87 ug/L |            |
| 84-66-2   | Diethylphthalate            |     |          | not detected | 5000                     | 1.62 ug/L |            |
| 86-73-7   | Fluorene                    |     |          | not detected | 300                      | 0.99 ug/L |            |
| 7005-72-3 | 4-Chlorophenyl-phenylether  |     |          | not detected | NLE                      | 1.10 ug/L |            |
| 100-01-6  | 4-Nitroaniline              |     |          | not detected | NLE                      | 1.05 ug/L |            |
| 86-30-6   | n-Nitrosodiphenylamine      |     |          | not detected | 20                       | 1.01 ug/L |            |
| 103-53-3  | Azobenzene                  |     |          | not detected | NLE                      | 0.67 ug/L |            |
| 101-55-3  | 4-Bromophenyl-phenylether   |     |          | not detected | NLE                      | 0.76 ug/L |            |
| 118-74-1  | Hexachlorobenzene           |     |          | not detected | 10                       | 0.94 ug/L |            |
| 85-01-8   | Phenanthrene                |     |          | not detected | NLE                      | 1.23 ug/L |            |
| 120-12-7  | Anthracene                  |     |          | not detected | 2000                     | 1.12 ug/L |            |
| 84-74-2   | Di-n-butylphthalate         |     |          | not detected | 900                      | 1.70 ug/L |            |
| 206-44-0  | Fluoranthene                |     |          | not detected | 300                      | 1.64 ug/L |            |

# Semi-Volatile Analysis Report

## Page 2

Data File Name    **BNA03499 D**  
 Operator            **Bhaskar**  
 Date Acquired     **4-Jan-00**

Sample Name        **5043 01**  
 Misc Info           **Bldg 492**  
 Sample Multiplier   **1**

| CAS#     | Name                       | R.T | Response | Result       | Regulatory Level (ug/L)* | MDL       | Qualifiers |
|----------|----------------------------|-----|----------|--------------|--------------------------|-----------|------------|
| 92-87-5  | Benzidine                  |     |          | not detected | 50                       | 4.18 ug/L |            |
| 129-00-0 | Pyrene                     |     |          | not detected | 200                      | 1.25 ug/L |            |
| 85-68-7  | Butylbenzylphthalate       |     |          | not detected | 100                      | 1.05 ug/L |            |
| 56-55-3  | Benzo[a]anthracene         |     |          | not detected | 10                       | 1.19 ug/L |            |
| 91-94-1  | 3,3'-Dichlorobenzidine     |     |          | not detected | 60                       | 1.75 ug/L |            |
| 218-01-9 | Chrysene                   |     |          | not detected | 20                       | 1.38 ug/L |            |
| 117-81-7 | bis(2-Ethylhexyl)phthalate |     |          | not detected | 30                       | 1.74 ug/L |            |
| 117-84-0 | Di-n-octylphthalate        |     |          | not detected | 100                      | 1.44 ug/L |            |
| 205-99-2 | Benzo[b]fluoranthene       |     |          | not detected | 10                       | 1.25 ug/L |            |
| 207-08-9 | Benzo[k]fluoranthene       |     |          | not detected | 2                        | 1.29 ug/L |            |
| 50-32-8  | Benzo[a]pyrene             |     |          | not detected | 20                       | 1.05 ug/L |            |
| 193-39-5 | Indeno[1,2,3-cd]pyrene     |     |          | not detected | 20                       | 0.83 ug/L |            |
| 53-70-3  | Dibenz[a,h]anthracene      |     |          | not detected | 20                       | 0.64 ug/L |            |
| 191-24-2 | Benzo[g,h,i]perylene       |     |          | not detected | NLE                      | 0.84 ug/L |            |

\* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6.2 Sept-97

### Qualifiers

E= Value Exceeds Linear Range  
 D= Value from dilution  
 B= Compound in Related Blank  
 PQL= Practical Quantitation Limit

MDL= Method Detection Limit  
 NLE= No Limit Established  
 R T =Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Bldg.492

Lab Name FMETL Lab Code 13461

Project 100004 Case No 5043 Location Bld 492 SDG No

Matrx (soil/water) WATER Lab Sample ID 5043 01

Sample wt/vol 1000 (g/ml) ML Lab File ID BNA03499 D

Level (low/med) LOW Date Received 12/22/99

% Moisture  decanted (Y/N) N Date Extracted 12/29/99

Concentrated Extract Volume 1000 (uL) Date Analyzed 1/4/00

Injection Volume 1 0 (uL) Dilution Factor 1 0

GPC Cleanup (Y/N) N pH 7

## CONCENTRATION UNITS

Number TICs found 0 (ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST CONC | Q |
|------------|---------------|----|----------|---|
|------------|---------------|----|----------|---|

**Semi-Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File Name **BNA03500.D**  
 Operator **Bhaskar**  
 Date Acquired **4-Jan-00**

Sample Name **5043 02**  
 Misc Info **Dupe**  
 Sample Multiplier **1**

| CAS#      | Name                        | R.T | Response | Result       | Regulatory Level (ug/L)* | MDL       | Qualifiers |
|-----------|-----------------------------|-----|----------|--------------|--------------------------|-----------|------------|
| 110-86-1  | Pyridine                    |     |          | not detected | NLE                      | 1.83 ug/L |            |
| 62-75-9   | N-nitroso-dimethylamine     |     |          | not detected | 20                       | 0.91 ug/L |            |
| 62-53-3   | Aniline                     |     |          | not detected | NLE                      | 1.63 ug/L |            |
| 111-44-4  | bis(2-Chloroethyl)ether     |     |          | not detected | 10                       | 1.28 ug/L |            |
| 541-73-1  | 1,3-Dichlorobenzene         |     |          | not detected | 600                      | 1.21 ug/L |            |
| 106-46-7  | 1,4-Dichlorobenzene         |     |          | not detected | 75                       | 1.19 ug/L |            |
| 100-51-6  | Benzyl alcohol              |     |          | not detected | NLE                      | 1.02 ug/L |            |
| 95-50-1   | 1,2-Dichlorobenzene         |     |          | not detected | 600                      | 1.13 ug/L |            |
| 108-60-1  | bis(2-chloroisopropyl)ether |     |          | not detected | 300                      | 1.39 ug/L |            |
| 621-64-7  | n-Nitroso-di-n-propylamine  |     |          | not detected | 20                       | 0.80 ug/L |            |
| 67-72-1   | Hexachloroethane            |     |          | not detected | 10                       | 1.50 ug/L |            |
| 98-95-3   | Nitrobenzene                |     |          | not detected | 10                       | 0.97 ug/L |            |
| 78-59-1   | Isophorone                  |     |          | not detected | 100                      | 1.01 ug/L |            |
| 111-91-1  | bis(2-Chloroethoxy)methane  |     |          | not detected | NLE                      | 1.21 ug/L |            |
| 120-82-1  | 1,2,4-Trichlorobenzene      |     |          | not detected | 9                        | 1.22 ug/L |            |
| 91-20-3   | Naphthalene                 |     |          | not detected | NLE                      | 1.27 ug/L |            |
| 106-47-8  | 4-Chloroaniline             |     |          | not detected | NLE                      | 1.09 ug/L |            |
| 87-68-3   | Hexachlorobutadiene         |     |          | not detected | 1                        | 0.71 ug/L |            |
| 91-57-6   | 2-Methylnaphthalene         |     |          | not detected | NLE                      | 1.08 ug/L |            |
| 77-47-4   | Hexachlorocyclopentadiene   |     |          | not detected | 50                       | 1.32 ug/L |            |
| 91-58-7   | 2-Chloronaphthalene         |     |          | not detected | NLE                      | 1.01 ug/L |            |
| 88-74-4   | 2-Nitroaniline              |     |          | not detected | NLE                      | 0.96 ug/L |            |
| 131-11-3  | Dimethylphthalate           |     |          | not detected | 7000                     | 1.52 ug/L |            |
| 208-96-8  | Acenaphthylene              |     |          | not detected | NLE                      | 0.96 ug/L |            |
| 606-20-2  | 2,6-Dinitrotoluene          |     |          | not detected | NLE                      | 0.81 ug/L |            |
| 99-09-2   | 3-Nitroaniline              |     |          | not detected | NLE                      | 0.79 ug/L |            |
| 83-32-9   | Acenaphthene                |     |          | not detected | 400                      | 1.10 ug/L |            |
| 132-64-9  | Dibenzofuran                |     |          | not detected | NLE                      | 1.00 ug/L |            |
| 121-14-2  | 2,4-Dinitrotoluene          |     |          | not detected | 10                       | 0.87 ug/L |            |
| 84-66-2   | Diethylphthalate            |     |          | not detected | 5000                     | 1.62 ug/L |            |
| 86-73-7   | Fluorene                    |     |          | not detected | 300                      | 0.99 ug/L |            |
| 7005-72-3 | 4-Chlorophenyl-phenylether  |     |          | not detected | NLE                      | 1.10 ug/L |            |
| 100-01-6  | 4-Nitroaniline              |     |          | not detected | NLE                      | 1.05 ug/L |            |
| 86-30-6   | n-Nitrosodiphenylamine      |     |          | not detected | 20                       | 1.01 ug/L |            |
| 103-33-3  | Azobenzene                  |     |          | not detected | NLE                      | 0.67 ug/L |            |
| 101-55-3  | 4-Bromophenyl-phenylether   |     |          | not detected | NLE                      | 0.76 ug/L |            |
| 118-74-1  | Hexachlorobenzene           |     |          | not detected | 10                       | 0.94 ug/L |            |
| 85-01-8   | Phenanthrene                |     |          | not detected | NLE                      | 1.23 ug/L |            |
| 120-12-7  | Anthracene                  |     |          | not detected | 2000                     | 1.12 ug/L |            |
| 84-74-2   | Di-n-butylphthalate         |     |          | not detected | 900                      | 1.70 ug/L |            |
| 206-44-0  | Fluoranthene                |     |          | not detected | 300                      | 1.64 ug/L |            |

# Semi-Volatile Analysis Report

## Page 2

Data File Name    BNA03500 D  
 Operator            Bhaskar  
 Date Acquired      4-Jan-00

Sample Name        5043 02  
 Misc Info           Dupe  
 Sample Multiplier   1

| CAS#     | Name                       | R.T | Response | Result       | Regulatory Level (ug/L)* | MDL       | Qualifiers |
|----------|----------------------------|-----|----------|--------------|--------------------------|-----------|------------|
| 92-87-5  | Benzidine                  |     |          | not detected | 50                       | 4.18 ug/L |            |
| 129-00-0 | Pyrene                     |     |          | not detected | 200                      | 1.25 ug/L |            |
| 85-68-7  | Butylbenzylphthalate       |     |          | not detected | 100                      | 1.05 ug/L |            |
| 56-55-3  | Benzo[a]anthracene         |     |          | not detected | 10                       | 1.19 ug/L |            |
| 91-94-1  | 3,3'-Dichlorobenzidine     |     |          | not detected | 60                       | 1.75 ug/L |            |
| 218-01-9 | Chrysene                   |     |          | not detected | 20                       | 1.38 ug/L |            |
| 117-81-7 | bis(2-Ethylhexyl)phthalate |     |          | not detected | 30                       | 1.74 ug/L |            |
| 117-84-0 | Di-n-octylphthalate        |     |          | not detected | 100                      | 1.44 ug/L |            |
| 205-99-2 | Benzo[b]fluoranthene       |     |          | not detected | 10                       | 1.25 ug/L |            |
| 207-08-9 | Benzo[k]fluoranthene       |     |          | not detected | 2                        | 1.29 ug/L |            |
| 50-32-8  | Benzo[a]pyrene             |     |          | not detected | 20                       | 1.05 ug/L |            |
| 193-39-5 | Indeno[1,2,3-cd]pyrene     |     |          | not detected | 20                       | 0.83 ug/L |            |
| 53-70-3  | Dibenz[a,h]anthracene      |     |          | not detected | 20                       | 0.64 ug/L |            |
| 191-24-2 | Benzo[g,h,i]perylene       |     |          | not detected | NLE                      | 0.84 ug/L |            |

\* Higher of PQL's and Ground Water Criteria as per NJAC 7-9-6.2 Sept-97

### Qualifiers

E= Value Exceeds Linear Range  
 D= Value from dilution  
 B= Compound in Related Blank  
 PQL= Practical Quantitation Limit

MDL= Method Detection Limit  
 NLE= No Limit Established  
 R T =Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Dupe

Lab Name FMETL Lab Code 13461  
 Project 100004 Case No 5043 Location Bld 492 SDG No         
 Matrix (soil/water) WATER Lab Sample ID 5043 02  
 Sample wt/vol 1000 (g/ml) ML Lab File ID BNA03500 D  
 Level (low/med) LOW Date Received 12/22/99  
 % Moisture        decanted (Y/N) N Date Extracted 12/29/99  
 Concentrated Extract Volume 1000 (uL) Date Analyzed 1/4/00  
 Injection Volume 10 (uL) Dilution Factor 10  
 GPC Cleanup (Y/N) N pH 7

## CONCENTRATION UNITS

Number TICs found 1 (ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT   | EST CONC | Q |
|------------|---------------|------|----------|---|
| 1          | unknown       | 7.18 | 5        | J |

## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT  
AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

- |    |                                                                                                           |    |
|----|-----------------------------------------------------------------------------------------------------------|----|
| 1  | Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted | ✓  |
| 2  | Table of Contents submitted                                                                               | ✓  |
| 3  | Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted           | ✓  |
| 4  | Document paginated and legible                                                                            | ✓  |
| 5  | Chain of Custody submitted                                                                                | ✓  |
| 6  | Samples submitted to lab within 48 hours of sample collection                                             | ✓  |
| 7  | Methodology Summary submitted                                                                             | ✓  |
| 8  | Laboratory Chronicle and Holding Time Check submitted                                                     | ✓  |
| 9  | Results submitted on a dry weight basis                                                                   | NA |
| 10 | Method Detection Limits submitted                                                                         | ✓  |
| 11 | Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP  | ✓  |

Laboratory Manager or Environmental Consultant's Signature

Date 5/4/00

Laboratory Certification #13461

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

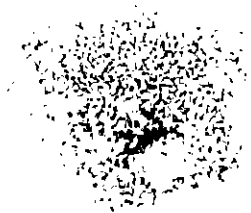
000066

## **Laboratory Authentication Statement**

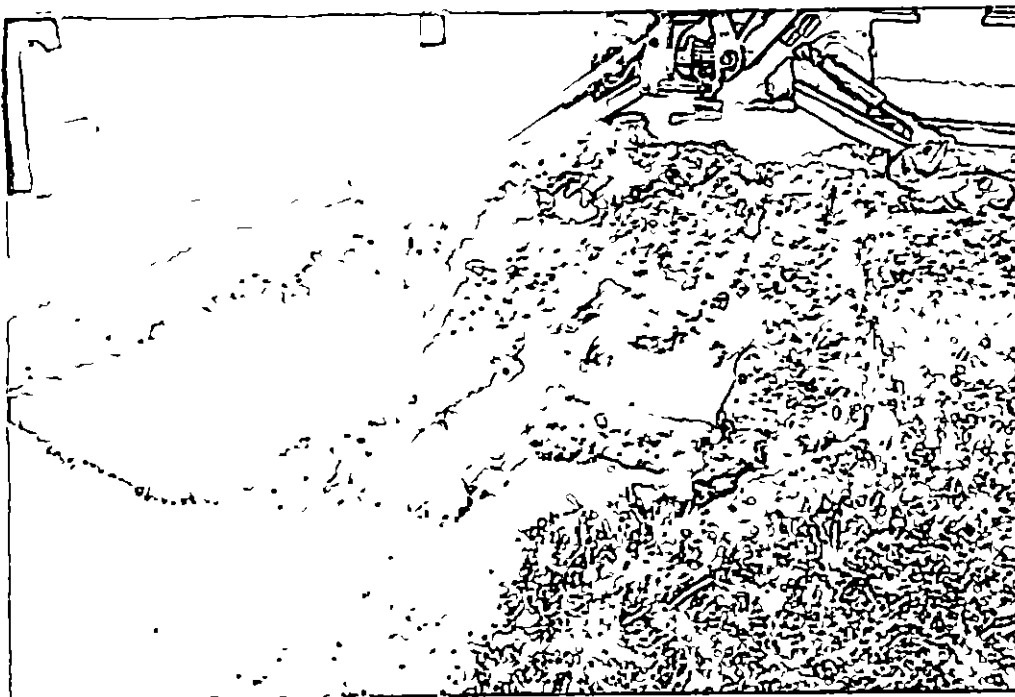
I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N J A C 7 18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information 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.

A handwritten signature in black ink, appearing to read 'DK Wright', written over a horizontal line.

Daniel K. Wright  
Laboratory Manager



**APPENDIX G**  
**PHOTOGRAPHS**



MAY 15, 1997

# PHOTOGRAPHIC LOG

USE NO. 90010-59

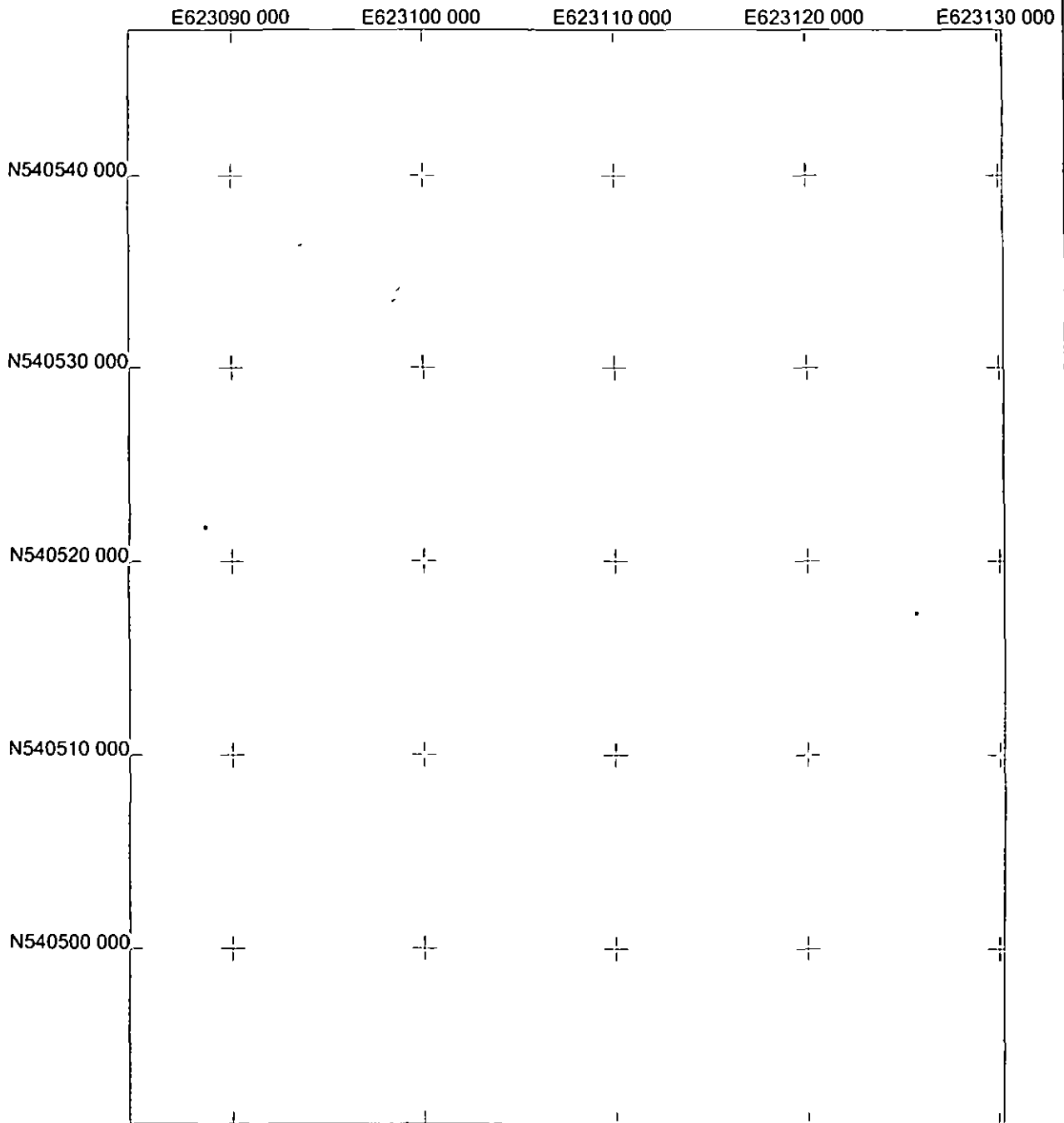
Building 492  
Main Post-East  
Fort Monmouth

VERSAR  
Engineers, Managers, Scientists & Planners  
Bristol, PA

2000

## **APPENDIX H**

### **ELECTRONIC DATA DELIVERABLES**



## Bldg. 492 UST Ground Water Sample GPS Map

US State Plane 1983  
New Jersey (NY East) 2900  
NAD 1983 (Conus)

N  
↑

Scale 1 100  
0 12 50  
  
US Survey Feet

r070714c cor  
7/10/2000  
Pathfinder Office  
 **Trimble**

**BLDG 492 UST GROUND WATER SAMPLE GPS POSITION & COORDINATES**

US STATE PLANE 1983 NJ ( NY EAST ) 2900 NAD 1983 ( CONUS )

( IN US SURVEY FEET )

**SAMPLE POINTS**

| <b><u>POSITION / DESC</u></b> | <b><u>Y COORD ( NORTHING )</u></b> | <b><u>X COORD ( EASTING )</u></b> |
|-------------------------------|------------------------------------|-----------------------------------|
| 492 GW ( A SIDE )             | 540521 766                         | 623088 552                        |

( GW denotes Ground Water )

**REFERENCE POINTS**

| <b><u>POSITION / DESC</u></b> | <b><u>Y COORD ( NORTHING )</u></b> | <b><u>X COORD ( EASTING )</u></b> |
|-------------------------------|------------------------------------|-----------------------------------|
| TELE POLE                     | 540517 363                         | 623125 641                        |