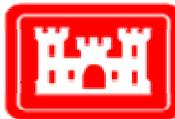


**FINAL**

# Remedial Action Report for Soil and Groundwater Contamination

## Building 886

U. S. Army Garrison Fort Monmouth  
Fort Monmouth, New Jersey



Directorate of Public Works



January 13, 2006

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

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**Remedial Action Report for  
Soil and Groundwater  
Contamination at  
Building 886**

*Fort Monmouth, New Jersey*

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**January 13, 2006**

**PREPARED BY:**



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**January 13, 2006**

**VERSAR PROJECT NO. 0571.418**

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## EXECUTIVE SUMMARY

VERSAR, Inc. (Versar) has been contracted by the United States (U.S.) Army Garrison, Fort Monmouth (Fort Monmouth), Directorate of Public Works (DPW), Fort Monmouth, New Jersey to prepare a Remedial Action Report (RAR) to document soil and groundwater conditions at Building 886 located in the Main Post Area of Fort Monmouth, New Jersey. This report addresses the remedial activities performed from January 2002 through February 2003.

Building 886 is located in the south part of the Main Post Area of Fort Monmouth, at the intersection of Murphy Road and Lane Avenue. Building 886 is located approximately 950 feet south of Husky Brook.

Building 886 was used by Fort Monmouth for equipment storage. A former above-ground storage tank (AST) was located adjacent to Building 886. The AST had a storage capacity of 250,000 gallons and stored #2 fuel oil. The AST has been identified on base maps dating back to 1956. Fort Monmouth had the AST removed during the 1970's.

A 1,000-gallon underground storage tank (UST) was also located adjacent to Building 886 and supplied #2 fuel oil for heating. The UST was removed in April 1998 by TECOM-Vinnell Services (TVS) during which time several holes were documented in the UST, a sheen was present on the groundwater within the excavation, and evidence of potentially contaminated soils was observed.

Extensive contamination was discovered during the removal of the Building 886 storage tanks, therefore requiring remedial investigation (RI) activities to better delineate the presence of soil and groundwater contamination. RI activities included soil and groundwater sampling. Remedial action (RA) activities included the excavation of contaminated soil, the collection of post-excavation samples and the installation of a groundwater treatment system.

The first phase of remedial activities that was conducted including soil sampling to determine if contamination remained. Phase 1 RA activities were conducted until soil and groundwater contamination were discovered. Following this discovery, RI soil sampling was conducted to determine the necessity of remedial action. RI soil sampling was conducted at 48 geoprobe soil boring locations of the removed tanks at Building 886. A total of 345 soil samples were collected at various depths and were analyzed for Total Petroleum Hydrocarbons (TPH), and an additional 27 soil samples were collected from boring locations containing soil exceeding 1,000 ppm TPH and were analyzed for Volatile Organic Compounds (VOCs). TPH was detected in 128 of the 345 soil samples at concentrations below the New Jersey Department of Environmental Protection (NJDEP) criteria. Eleven samples contained soils which exceeded the NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSCC) for TPH. No VOCs were detected in the soil samples above the RDCSCC.

Following the Phase 1 RI, 27 temporary piezometer points were installed at Building 886 for depth to water measurements. Freephase petroleum hydrocarbons (product) were observed which prompted the collection of two groundwater samples from two of the geoprobe soil boring locations. The soil samples were analyzed for VOCs and Semi-Volatile Organic Compounds (SVOCs). No VOCs or SVOCs were detected in site groundwater.

A second phase of RI sampling was conducted to further delineate soil contamination at Building 886. A total of 31 soil samples were collected at various depths from 12 different geoprobe locations. The soil samples were analyzed for TPH in all 31 samples, seven of which were also analyzed for VOCs based on TPH results exceeding 1,000 ppm. TPH was detected in 12 of the 31 soil samples at concentrations below the NJDEP RDCSCC. Two samples contained soils which exceeded the RDCSCC for TPH. No VOCs were detected in the soil samples at concentrations above the RDCSCC.

Based on the results of the Phase 1 and Phase 2 RI activities, a remedial design consisting of the excavation and removal of contaminated soil exceeding the RDCSCC for TPH was conducted. Approximately 4,000 tons of soil with contamination in excess of the NJDEP RDCSCC was excavated and removed from the site. Phase 2 post-excavation RA soil samples were collected to determine if contamination remained. A total of 60 post-excavation soil samples were collected from within the excavation areas at Building 886.

During the post-excavation RA soil sampling events (Phase 1 and Phase 2), a total of 83 soil samples were collected and analyzed for TPH. Out of the 43 soil samples where TPH was detected, four samples contained TPH concentrations exceeding the RDCSCC. Twenty-two soil samples which were collected from boring locations containing soil exceeding 1,000 ppm TPH were also analyzed for VOCs. No VOCs were detected in the soil samples at concentrations above the RDCSCC.

Based on the results of the geoprobe groundwater investigation, a groundwater treatment system for the recovery of free-phase petroleum hydrocarbons consisting of an automated product recovery system and 13 groundwater monitoring and recovery wells was installed. A total of 15 groundwater samples were collected from 13 monitoring wells to establish the areal extent of petroleum hydrocarbon impacts to groundwater. The groundwater samples were analyzed for TPH, VOCs, SVOCs, pesticides and polychlorinated biphenyls (PCBs) and Target Analyte List (TAL) metals. TPH was detected in 12 samples; however there is no NJDEP Ground Water Quality Criteria (GWQC) for TPH. A total of nine VOCs were detected in site groundwater, two of which were detected at concentrations that exceed their respective GWQC. A total of ten SVOCs were detected in site groundwater, one of which was detected at a concentration that exceeded its GWQC. Three pesticides were detected at concentrations below their respective GWQC. A total of 20 metals were detected in site groundwater. Five metals were detected at concentrations that exceed their respective GWQC, while the remaining 15 metals were detected below their respective GWQC.

Based on the magnitude of their exceedences, the frequency of their occurrences and their wide-ranging results, TPH in soil and benzene in groundwater are identified as contaminants of concern (COCs) at Building 886. Methyl ethyl ketone and N-Nitrosodiphenylamine will remain potential COCs at Building 886 until further sampling can better assess the occurrence of these contaminants at the site.

Continuation of the groundwater monitoring program, including quarterly groundwater well monitoring for VOCs and SVOCs is recommended at Building 886.

## 1.0 INTRODUCTION

Versar has been contracted by the U.S. Army Garrison, Fort Monmouth, DPW, Fort Monmouth, New Jersey, to prepare an RAR for contaminated soils and contaminated groundwater at Building 886 located in the Main Post Area of Fort Monmouth. This report addresses the remedial activities performed from January 2002 through February 2003.

### 1.1 Objectives

The objective of this RAR is to present the site remedial action process performed at the contaminated areas at Building 886, along with the results of the RA activities conducted at these sites. The purpose of the RA was to excavate and dispose of contaminated soils and remediate contaminated groundwater in these areas. The remedial actions were conducted in accordance with NJDEP *Technical Requirements for Site Remediation* (July 1999), NJAC 7:26E, et seq.

The remedial actions encompassed the following:

- Excavating contaminated soils in areas identified through RI sampling conducted between March 2002 and June 2002 and installing a groundwater treatment system (product recovery);
- Conducting post-excavation soil sampling to evaluate the effectiveness of the RA;
- Conducting groundwater sampling from surrounding wells to evaluate the areal extent of petroleum hydrocarbons;
- Comparing the results of the sampling with the NJDEP RDCSCC;
- Disposal of contaminated soil (conducted by Fort Monmouth); and
- Documentation of activities as required by the NJDEP *Technical Requirements for Site Remediation* (July 1999), NJAC 7:26E, et seq.

### 1.2 Report Organization

This report is organized to minimize repetition. **Section 2.0** provides background information and a general description of both Building 886 and the Main Post Area of Fort Monmouth. **Section 3.0** describes and summarizes the field activities conducted at Building 886, including RA soil sampling, RI soil sampling, geoprobe groundwater sampling, and groundwater sampling from monitoring wells. The results of the post-excavation RA soil sampling and the groundwater monitoring well sampling at Building 886 is presented in **Section 4.0**. **Section 5.0** discusses the quality control methodology used to verify the reliability of the analytical results. Conclusions and recommendations for Building 886 are presented in **Section 6.0**.

## 2.0 SITE DESCRIPTION AND BACKGROUND

The following sections describe Building 886 background and environmental setting of the area surrounding Fort Monmouth and Building 886. Included is a description of location, background, current conditions and environmental setting at Building 886.

### 2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia (**Figure 2-1**). In addition to the Main Post, the installation includes two subposts, the Charles Wood Area and the Evans Area. The Main Post encompasses approximately 630 acres and is bounded by State Highway 35, Parkers Creek, Lafetra Brook, the New Jersey Transit Railroad and a residential area to the south. The post was established in 1918 during World War I (WWI) as an Army Signal Corps training center. The Main Post currently provides administrative, training, and housing support functions, as well as providing many of the community facilities for Fort Monmouth. The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command (CECOM). CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC) and is the host tenant at Fort Monmouth.

Building 886 is located in the south part of the Main Post area of Fort Monmouth, at the intersection of Murphy Road and Lane Avenue (**Figure 2-2**). Building 886 is located approximately 950 feet south of Husky Brook.

Building 886 was used by Fort Monmouth for equipment storage. A former above-ground storage tank (AST) was located adjacent to Building 886. The AST had a storage capacity of 250,000 gallons and stored #2 fuel oil. The AST has been identified on base maps dating back to 1956. Fort Monmouth had the AST removed during the 1970's. A 1,000-gallon underground storage tank (UST) was also located adjacent to Building 886 and supplied #2 fuel oil for heating. The UST was removed in April 1998 by TECOM-Vinnell Services (TVS), during which soil contamination was identified at the site. Subsequently, remedial actions began to excavate contaminated soils and RIs were initiated to determine the extent of environmental impacts in the area. The remedial actions and investigations are the subject of this report.

### 2.2 Current Conditions

The site currently consists of Building 886 and lawn area. Due to security reasons, site photographs were not taken during the Building 886 walk-through.

## **2.3 Environmental Setting**

The following is a description of the geological/hydrogeological setting of the area surrounding Building 886. 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.

### **2.3.1 Regional and Local Geology**

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. Building 886 is located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands. The geologic map of New Jersey is provided as **Figure 2-3**.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand and gravel. These formations typically strike northeast-southwest with a dip ranging from 10-60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka, 1989). These sediments, predominantly derived from deltaic, shallow marine and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units, which are generally thicker to the southeast and reflect a deeper water environment. 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 thickness for these units varies greatly (e.g., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line (e.g., a boundary zone between older, resistant rocks and younger, softer plain sediments) to greater than 6,500 feet in Cape May County (Zapeczka, 1989).

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 60-80 percent of the sand fraction in the upper part of the unit. The upper part of the Tinton Sand is often highly oxidized and iron oxide encrusted (Minard, 1969). Groundwater occurs beneath the site at a depth of approximately 5-8 feet bgs.

The Kirkwood Formation (part of the Kirkwood-Cohansey system) crops out southeast of the Main Post and dips to the southeast at a slope of 20 feet per mile (Jablonski, 1968). The Kirkwood Formation consists of alternating layers of sand and clay. The upper unit is a light gray to yellowish-brown, fine-grained quartz sand with quartz nodules and small pebbles. The lower unit is a brown silt in Monmouth County (Jablonski, 1968).

### **2.3.2 Hydrogeology**

Fort Monmouth lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region (Meisler et al., 1988). This groundwater region is underlain by undeformed, unconsolidated to semi-consolidated sedimentary deposits. The chemistry of the water near the surface is variable with low dissolved solids and high iron concentrations. The water chemistry in areas underlain by glauconitic sediments (such as Red Bank, Tinton and Hornerstown Sands) is dominated by calcium, magnesium, manganese, aluminum and iron. The sediments in the area of Fort Monmouth were deposited in fluvial-deltaic to near shore environments.

The water table aquifer in the Main Post Area is identified as part of the “Navesink-Hornerstown 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. These geologic formations comprise a “Composite Confining Bed” for the Wenonah Mount Laurel Aquifer (Zapeczka, 1989).

Wells installed in the Red Bank and Tinton Sands produce 2-25 gallons per minute (gpm) (Jablonski, 1968). Groundwater is typically encountered at the Main Post and in the surrounding areas at shallow depths below ground surface (2-9 feet bgs). Water in the surficial aquifer generally flows east toward the Atlantic Ocean.

As presented in **Figure 2-4**, Fort Monmouth is located within the outcrop area of the “Navesink-Hornerstown Confining Unit” (Martin, 1998), which also includes the Red Bank Sand, Tinton Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation and the basal clay of the Kirkwood Formation. The Navesink-Hornerstown Confining Unit is approximately 125 feet thick at Building 886.

Based on a review of the NJDEP Ground Water Quality Standards (GWQS) (NJAC 7:9-6), January 7, 1993, Versar has determined that the site is underlain by a Class III-A aquifer. A formal presentation of this finding was made to the NJDEP on April 17, 2001. The primary designated use for Class III-A groundwater is the release or transmittal of groundwater to adjacent classification areas and surface water, as relevant. Secondary designated uses in Class III-A include any reasonable use.

Shallow groundwater may be 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 (e.g., streams, lakes); and
- Roadways, utility conduits and stormwater culverts.

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

### 2.3.3 Soils

According to the U.S. Department of Agriculture (USDA), Soil Conservation Service, Monmouth County Soil Survey (April 1989), the majority of the Main Post is covered by urban land (**Figure 2-5**). The soil survey describes urban land as areas where concrete, asphalt, buildings, shopping centers, airports or other impervious surfaces cover 80 percent or more of the surface. In addition, the survey indicated that the natural subsurface soils have largely been replaced with artificial or foreign fill materials (developed land with disturbed soils).

The following soil series and classification units are mapped in the Main Post Area:

- DoB Downer sandy loam (with 2 to 5 percent slopes)
- FrB Freehold sandy loam (with 2 to 5 percent slopes)
- FUB Freehold sandy loam/urban land complex (with 0-10 percent slopes)
- HV Humaquepts, frequently flooded
- KvA Kresson loam (with 0-5 percent slopes)
- UA Udorthents, smoothed
- UD Udorthents – urban land complex (with 0-3 percent slopes)

The Downer series soils are well-drained soils that are found on uplands and terraces. The soils are formed in acid, silty coastal plain sediments. The Freehold soils are also well drained and are formed in acid, loamy, coastal plain sediments that, by volume, are 1-10 percent glauconite and are found on uplands. The Humaquepts soils are somewhat poorly- to very poorly- drained soils that are formed in stratified, sandy, or loamy sediments of fluvial origins. The Humaquepts soils are located on the floodplain and are subject to flooding several times each year. The Kresson loam is a nearly level to gently sloping soil and is somewhat poorly drained. The soil is found on low divides and in depressions. The Udorthents soils have been altered by excavation or filling activities. In filled areas, these soils consist of loamy material that is more than 20 inches thick. The filled areas include floodplain, tidal marshes and areas with moderately, well drained to very poorly drained soils. Some Udorthent soils contain concrete, asphalt, metal and glass. Soils at Building 886 are classified as Udorthents – urban land complex (with 0-3 percent slopes) (**Figure 2.5**).

Monitoring well records (**Appendix A**) installed at Building 886 describe the soils to consist of natural soil consisting of brown fine to coarse sand with traces of silt and clay.

### **2.3.4 Topography and Surface Drainage**

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities conducted by the military. The land surface at the Main Post is relatively flat and ranges in elevation from approximately 4 feet above mean sea level (amsl) in the east at Oceanport Creek to 32 feet amsl at the western end of the post, near Highway 35. The eastern half of the post is generally 10 feet above amsl in elevation.

Surface water runoff from the western part of the Main Post flows into the Lafetra Creek to the north or into the Mill Creek to the south. The USGS topographic map (**Figure 2-1**) shows the Lafetra Creek as Parkers Creek Branch and Mill Creek as Wampum. Both Mill Creek and Lafetra Creek originate off-post. Mill Creek is channelized and flows along the southern boundary of the Main Post, turning north just past the Auto Craft Shop. Lafetra Creek forms the northern boundary of the Main Post and joins Mill Creek to form Parkers Creek. Parkers Creek flows eastward along the northern boundary and joins Oceanport Creek east of the post. Most of Parkers Creek, Lafetra Creek and Mill Creek are tidally influenced.

The U.S. Fish and Wildlife Service (FWS) National Wetland Inventory Long Branch quadrangle maps indicate the presence of wetlands at the Main Post. Parkers Creek and Oceanport Creek are classified as estuarine intertidal aquatic beds. The area of Parkers Creek and the part of Oceanport Creek/Husky Brook are classified as estuarine intertidal emergent wetlands. Lafetra Creek and Mill Creek are classified as riverine lower perennial open water/unknown bottom.

Building 866 is located approximately 950 feet south of Husky Brook, which empties to the east into Oceanport Creek. The USGS topographic map (**Figure 2-1**) shows that the land surface of the site is relatively flat at an elevation of less than 20 feet amsl. Surface water runoff from Building 886 is likely northward into Husky Brook.

### 3.0 REMEDIAL INVESTIGATION AND REMEDIAL ACTION ACTIVITIES

Fort Monmouth DPW has conducted RI and RA activities in the vicinity of Building 886. Underground and above-ground storage tanks were once present at Building 886 and have since been removed from the area. Extensive contamination was discovered during the removal of the Building 886 storage tanks and associated contaminated soil, prompting more extensive excavation in an effort to find the outer edge of contamination. Once the excavation became too large, post-excavation samples were taken to confirm that this section was successfully remediated, and then the excavation was backfilled (Phase 1 RA). Subsequently, RI activities were initiated and performed to better delineate the presence of soil and groundwater contamination. RI activities included soil and groundwater sampling. Phase 2 RA activities included the excavation of contaminated soil at a location separate from the Phase 1 RA excavation, the collection of post-excavation samples and the installation of a groundwater treatment system. A photographic log is presented in **Appendix B**. These activities were managed by the Fort Monmouth DPW and performed by TVS and Handex. The details of RI and RA activities that occurred at Building 886 are described in the following sections.

#### 3.1 Phase 1 RA Soil Activities

The first phase of RA activities was conducted from January 2002 to March 2002, which included excavation and disposal of contaminated soil in the area of the former Building 886 storage tanks. Following excavation activities, post-excavation samples were collected to determine if contamination remained. If contamination remained, then further excavation activities were conducted, followed by the collection of another round of post-excavation samples. A total of 23 post-excavation soil samples, including seven duplicate samples, were collected from within the excavation areas at Building 886. The locations of each Phase 1 soil sample are shown on **Figure 3-1**.

TVS personnel conducted the sampling using direct-push technology. All down-hole sampling equipment was decontaminated prior to use and between each boring. The samples were placed in laboratory-supplied bottles and placed on ice upon collection to ensure samples were kept below 4° C. The soil samples were analyzed by the Fort Monmouth Environmental Testing Laboratory (FMETL) for TPH in all 23 samples. A summary of the soil sampling activities, including rounds, well IDs, sample IDs, sample locations, collection/analysis date, analytical parameters and analysis method, is provided in **Table 3-1**. Copies of the soil sampling chain-of-custody forms and laboratory data sheets are presented in **Appendix C**. The results of the Phase 1 RA soil sampling are presented and discussed in **Section 4.1**.

Phase 1 RA activities were conducted until the excavation became too large and soil and groundwater contamination were discovered. Following this discovery, RI sampling was conducted on both the soil and the groundwater.

#### 3.2 Phase 1 RI Soil Sampling

In order to determine the extent of environmental impacts in the area of Building 886, a site investigation was initiated in March 2002. RI soil sampling was conducted at each

boring to determine the necessity of remedial action. RI activities at Building 886 involved the collection of soil and groundwater samples.

From March 2002 through June 2002, a total of 345 soil samples, including 11 duplicate samples, were collected from the 48 geoprobe soil boring locations of the removed tanks at Building 886. Soil samples were collected at the following depth intervals: 0-6", 24", 48", 72", 96", 120" and 144" below ground surface (bgs). The locations of each Phase 1 soil boring are shown in **Figure 3-2**. An additional 27 soil samples (including three duplicates) were collected from boring locations containing soil exceeding 1,000 ppm TPH and were analyzed for VOCs.

TVS personnel conducted the sampling using direct-push technology. All down-hole sampling equipment was decontaminated prior to use and between each boring. The samples were placed in laboratory-supplied bottles and placed on ice upon collection to ensure samples were kept below 4° C. The soil samples were analyzed by the FMETL for TPH in all 345 samples and VOCs in the additional 18 samples. A summary of the soil sampling activities, including rounds, well IDs, sample IDs, sample locations, collection/analysis date, analytical parameters and analysis method, is provided in **Table 3-2**. Copies of the groundwater sampling chain-of-custody forms and laboratory data sheets are presented in **Appendix D**. The results of the Phase 1 RI soil sampling are presented and discussed in **Section 4.2**.

### **3.3 Geoprobe RI Groundwater Sampling**

Following the Phase 1 RI, 27 temporary piezometer points were installed for depth to water measurements. Freephase petroleum hydrocarbons (product) were observed in 12 of the piezometers at a thickness ranging from 1/16 to 5-inches. On June 27, 2002, two groundwater samples were collected from two of the geoprobe soil boring locations at Building 886. Both samples were collected from a depth of 12-16 feet bgs. The 27 geoprobe boring locations and phase measurements are shown in **Figure 3-3**. Product recovery measurements are provided in **Table 3-3**.

TVS personnel conducted the sampling using direct-push technology. All down-hole sampling equipment was decontaminated prior to use and between each boring. The samples were placed in laboratory-supplied bottles and placed on ice upon collection to ensure samples were kept below 4° C. The soil samples were analyzed by the FMETL for VOCs and SVOCs in both samples. A summary of the groundwater geoprobe sampling activities, including rounds, well IDs, sample IDs, sample locations, collection/analysis date, analytical parameters and analysis method, is provided in **Table 3-4**. Copies of the groundwater sampling chain-of-custody forms and laboratory data sheets are presented in **Appendix E**.

During the geoprobe groundwater sampling, no VOCs or SVOCs were detected in site groundwater. The results of the analysis are presented in detail in **Table 3-5**.

Based on the results of the investigation, a remedial design consisting of the recovery of free-phase petroleum hydrocarbons was initiated. The implementation of a groundwater treatment system at Building 886 is discussed in **Section 3.6**.

### **3.4 Phase 2 RI Soil Sampling**

A second phase of RI sampling was conducted to further delineate soil contamination at Building 886. Phase 2 soil RI sampling was conducted from November 7 through November 26, 2002. A total of 31 soil samples, including one duplicate sample, were collected from 12 different geoprobe locations throughout the area around Building 886. Soil samples were collected at various depth intervals ranging from 6-12 feet bgs. The locations of the Phase 2 soil borings are shown in **Figure 3-4**.

TVS personnel conducted the sampling using direct-push technology. All down-hole sampling equipment was decontaminated prior to use and between each boring. The samples were placed in laboratory-supplied bottles and placed on ice upon collection to ensure samples were kept below 4° C. The soil samples were analyzed by the FMETL for TPH in all 31 samples. Seven of the 31 soil samples which were collected from boring locations containing soil exceeding 1,000 ppm TPH were also analyzed for VOCs. A summary of the soil sampling activities, including rounds, well IDs, sample IDs, sample locations, collection/analysis date, analytical parameters and analysis method, is provided in **Table 3-6**. Copies of the groundwater sampling chain-of-custody forms and laboratory data sheets are presented in **Appendix D**. The results of the Phase 2 RI soil sampling are presented and discussed in **Section 4.3**.

### **3.5 Phase 2 RA Post-Excavation Soil Activities**

Based on the results of the Phase 1 and Phase 2 RI activities, an RA consisting of the excavation and removal of contaminated soil (from an area different from the Phase 1 RA excavation area) exceeding the NJDEP RDCSCC for TPH was conducted from November 2002 through February 2003. A total of approximately 4,000 tons of soil with contamination in excess of the NJDEP RDCSCC was excavated and removed from the site. Following excavation activities, post-excavation samples were collected to determine if contamination remained. A total of 60 post-excavation soil samples, including seven duplicate samples, were collected from within the excavation areas at Building 886. The locations of each Phase 2 soil sample are shown in **Figure 3-5**.

The samples were placed in laboratory-supplied bottles and placed on ice upon collection to ensure samples were kept below 4° C. The sample analysis was performed by the FMETL for TPH in all 60 samples. Twenty-two out of the 60 soil samples which were collected from boring locations containing soil exceeding 1,000 ppm and/or exceeding 10,000 mg/kg were also analyzed for VOCs. A summary of the groundwater sampling activities, including rounds, well IDs, sample IDs, sample locations, collection/analysis date, analytical parameters and analysis method, is provided in **Table 3-7**. Copies of the soil sampling chain-of-custody forms and laboratory data sheets are presented in **Appendix C**. The results of the Phase 2 RA soil sampling are presented and discussed below in **Section 4.1**.

### 3.6 Groundwater Treatment System

Based on the results of the geoprobe groundwater investigation, a remedial design consisting of the recovery of free-phase petroleum hydrocarbons was initiated. In January 2003, Handex was contracted for the installation of a groundwater treatment system consisting of groundwater monitoring and recovery wells and air driven product recovery pumps. A total of 13 groundwater monitoring and recovery wells (886MW01, 886MW02, 886MW03, 886MW04, 886MW05, 886RW01, 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, 886RW07 and 886RW08) were installed by at Building 886 to establish the areal extent of petroleum hydrocarbon impacts to groundwater and serve as sentinel wells. The locations of each groundwater monitoring well are shown in **Figure 3-6**. Monitoring well records and permits are provided in **Appendix A**.

The groundwater treatment system included an automated product recovery system (Clean Environmental Equipment, Model GNE/200/SOS) which would remove free-floating hydrocarbon down to a sheen ( $\leq 0.01$  in.) from depths of 200 feet in monitoring wells. The pump would draw product from the skimmer and push it to the surface into a surface-mounted holding tank within a system shed, located on the west side of Building 886 as shown on the As-Built Site Plan included in **Appendix A**. The system specifications and the operations and maintenance manual are included in **Appendix A**.

Since installation, the groundwater treatment system has not been activated for regular use in the recovery of free-phase petroleum hydrocarbons; however, manual product gauging has been performed at 886RW04 (**Table 3-3**).

#### 3.6.1 Groundwater Monitoring Well Sampling

On February 5 and February 12, 2003, 15 groundwater samples, including two duplicate samples, were collected from 13 monitoring well locations around Building 886. Sampling activities were performed in accordance with the *Fort Monmouth Standard Sampling Operating Procedure* (December 1997). All down-hole sampling equipment was decontaminated prior to use and between each sample. The samples were placed in laboratory-supplied bottles and placed on ice upon collection to ensure samples were kept below 4° C. The groundwater samples were analyzed by the FMETL for TPH, Target Compound List (TCL+30) plus 30 parameters, which includes VOCs and SVOCs, pesticides, PCBs, and TAL metals. A summary of the groundwater sampling activities, including rounds, well IDs, sample IDs, sample locations, collection/analysis date, analytical parameters and analysis method, is provided in **Table 3-8**. Copies of the groundwater sampling chain-of-custody forms and laboratory data sheets are presented in **Appendix F**. The results of the groundwater monitoring well sampling are presented and discussed in **Section 4.4**.

#### 3.6.2 Groundwater Depth Measurements

During the monitoring well sampling conducted at the 13 wells at Building 886 on February 5 and February 12, 2003, groundwater was encountered in the 13 monitoring wells at Building 886 at depths ranging from 6.38 to 11.03 feet bgs (**Table 3-9**) with a varying gradient toward the northwest (**Figure 3-6**).

## 4.0 REMEDIAL ACTION RESULTS

This section includes a discussion of the chemical characterization of the site at Building 886 based on the various samples collected and analyzed, which include monitoring well groundwater samples and post-excavation RA soil samples. TVS personnel were responsible for the collection of samples during this RI. Sample analyses were performed by the FMETL.

### 4.1 Post-Excavation RA Soil Sampling Results

This section presents a discussion of the results of laboratory analyses performed for the 83 post-excavation RA soil samples collected from January 2002 through February 2003 to evaluate the effectiveness of the contaminated soil excavation activities with respect to soil contamination at Building 886. The laboratory data reports are included as **Appendix B. Figure 3-1** and **Figure 3-5** show the remaining soil contamination at the excavation site at Building 886.

During two post-excavation soil sampling events (Phase 1 and Phase 2) conducted from January 2002 to March 2002 and from November 2002 through February 2003, TPH was detected in 43 soil samples. Eleven samples contained soils which exceeded the NJDEP RDCSCC for TPH (>10,000 ppm), while the remaining 32 were detected below the NJDEP RDCSCC. No VOCs were detected in the soil samples at concentrations above their respective NJDEP RDCSCC. Analytes detected in post-excavation soil samples at concentrations above the NJDEP RDCSCC are highlighted and printed in bold typeface in **Table 4-1** (Phase 1) and **Table 4-6** (Phase 2). An exceedence summary for Phase 2 is included as **Table 4-7**.

#### 4.1.1 TPH

During the Phase 1 RA sampling event, TPH was detected in five post-excavation soil samples all at concentrations below the RDCSCC.

During the Phase 2 soil sampling event, TPH was detected in 38 post-excavation soil samples. TPH was detected in 11 post-excavation soil samples at concentrations that exceed the RDCSCC and in 27 post-excavation soil samples at concentration below the RDCSCC.

**TPH** was detected in soil samples at concentrations exceeding the NJDEP RDCSCC of 10,000 mg/kg in 11 Phase 2 post-excavation soil sampling locations. Concentrations ranged from 10,284.4 mg/kg at 886-PX23W to 31,639.09 mg/kg at 886-PX24W.

#### 4.1.2 VOCs

No VOCs were detected above the appropriate NJDEP RDCSCC at the site.

### 4.2 Phase 1 RI Soil Sampling Results

During the Phase 1 RI soil sampling, TPH was detected in 128 soil samples. Eleven samples contained soils which exceeded the NJDEP RDCSCC for TPH (>10,000 ppm),

while the remaining 117 were detected below the NJDEP RDCSCC. No VOCs were detected in the soil samples at concentrations above their respective NJDEP RDCSCC. Analytes detected in Phase 1 RI soil samples at concentrations above their respective NJDEP RDCSCC are highlighted and printed in bold typeface in **Table 4-2**. **Figure 3-2** shows the remaining soil contamination at the excavation site at Building 886 and an exceedence summary is included as **Table 4-3**.

#### 4.2.1 TPH

During the Phase 1 RI soil sampling, TPH was detected in 127 soil samples; 11 soil samples exceeded the RDCSCC (886-8-72", 886-8-96", 886-8-120", 886-9-96", 886-11-96", 886-13-120", 886-17-48", 886-24-72", 886-29-96", 886-31-96" and 886-41 10'), and 116 soil samples were detected at concentrations below the RDCSCC.

**TPH** was detected in soil samples at concentrations exceeding the NJDEP RDCSCC of 10,000 mg/kg in 11 Phase 1 RI soil samples. Concentrations ranged from 11,024.72 mg/kg at 886-9-96" to 15,152.37 mg/kg at 886-24-72".

Because concentrations exceeding the NJDEP cleanup criteria were present, further sampling was deemed necessary to delineate the extents of contamination. Phase 2 investigation sampling for Building 886 is discussed in **Section 3.4**.

Boring 886-41 was resampled to confirm that the soil sample taken at 10' bgs exceeded the RDCSCC. The results showed a concentration well below the RDCSCC and that the first sample result was in error. These confirmation results are shown in **Table 4-4**.

#### 4.2.2 VOCs

No VOCs were detected above their appropriate NJDEP RDCSCC at the site.

### 4.3 Phase 2 RI Soil Sampling Results

During the Phase 2 RI soil sampling, TPH was detected in 12 soil samples. Two samples contained soils which exceeded their respective NJDEP RDCSCC for TPH (>10,000 ppm), while the remaining ten were detected below their respective NJDEP RDCSCC.

No VOCs were detected in the soil samples at concentrations above their respective NJDEP RDCSCC.

Analytes detected in Phase 2 RI soil samples at concentrations above their respective NJDEP RDCSCC are highlighted and printed in bold typeface in **Table 4-4**. **Figure 3-4** shows the remaining soil contamination at Building 886. An exceedence summary is included as **Table 4-5**.

#### 4.3.1 TPH

During the Phase 2 RI soil sampling, TPH was detected in two soil samples exceeding the RDCSCC.

**TPH** was detected in soil samples at concentrations exceeding the NJDEP RDCSCC of 10,000 mg/kg in two Phase 2 RI soil samples. Concentrations ranged from 14,885.10 mg/kg at 886-57-8' to 22,317.07 mg/kg at 886-57-6'.

Based on samples from surrounding borings 886-55, 886-56, 886-58, and 886-59, whose sampling results were well below the RDCSCC, it was determined that the contamination found at boring 886-57 is limited to that small area. The occurrence of high voltage utilities in that area prohibited further excavation; therefore, these soils were left in place.

#### 4.3.2 VOCs

No VOCs were detected above their appropriate NJDEP RDCSCC at the site.

#### 4.4 Groundwater Monitoring Well Sampling Results

This section presents a discussion of the results of laboratory analyses performed for the 17 groundwater samples from the 13 groundwater monitoring and recovery wells (886MW01, 886MW02, 886MW03, 886MW04, 886MW05, 886RW01, 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, 886RW07 and 886RW08) collected from January 2002 through February 2003 evaluate the effectiveness of the groundwater treatment system with respect to groundwater contamination at the Building 886. The well groundwater samples were analyzed for TPH, TCL+30 parameters and TAL metals. The laboratory data reports are included as **Appendix E**. **Figure 4-2** shows the remaining groundwater contamination at Building 886.

During this sampling event, a total of nine VOCs were detected in site groundwater. Two VOCs were detected at concentrations that exceed their respective GWQC, while the remaining seven VOCs were detected below their respective GWQC. TPH was detected in 12 samples; however there is no NJDEP GWQC for TPH. A total of ten SVOCs were detected in site groundwater. One SVOC was detected at a concentration that exceeded its GWQC, while the remaining nine SVOCs were detected below their respective GWQC. Three pesticides were detected in site groundwater at concentrations below their respective GWQC. A total of 20 metals were detected in site groundwater. Five metals were detected at concentrations that exceed their respective GWQC, while the remaining 15 metals were detected below their respective GWQC. Analytes detected in groundwater samples at concentrations above their respective NJDEP GWQC are highlighted and printed in bold typeface in **Table 4-8**. An exceedance summary is included as **Table 4-9**.

##### 4.4.1 VOCs

During this sampling event, a total of two VOCs were detected in site groundwater at concentrations that exceed their respective GWQC.

**Benzene** was detected at concentrations exceeding the GWQC of 1.0 ug/L at three monitoring well locations. Concentrations ranged from 1.23 ug/L in 886RW07 to 2.16 ug/L in 886RW02.

**Methyl ethyl ketone** (2-butanone) was detected at concentrations exceeding the GWQC of 300 ug/L at two groundwater monitoring well locations. Concentrations ranged from 29,510.7 ug/L in 886RW08 to 30,039.7 ug/L in 886RW01.

#### 4.4.2 SVOCs

During this sampling event, a one SVOC was detected in site groundwater at a concentration that exceeded its GWQC.

**N-Nitrosodiphenylamine** was detected at a concentration exceeding the GWQC of 20 ug/L at one groundwater monitoring well location. A concentration of 38.99 ug/L was detected in 886MW03.

#### 4.4.3 Pesticides and PCBs

No pesticides or PCBs were detected above the appropriate GWQC at the site.

#### 4.4.4 Metals

**Aluminum** was detected at concentrations exceeding the GWQC of 200 ug/L at six groundwater monitoring well locations. Concentrations ranged from 212 ug/L in 886MW01 to 1250 ug/L in 886MW03.

**Arsenic** was detected at a concentration exceeding the GWQC of 8 ug/L at one groundwater monitoring well location. A concentration of 12.2 ug/L was detected in 886MW02.

**Iron** was detected at concentrations exceeding the GWQC of 300 ug/L at 13 groundwater monitoring well locations. Concentrations ranged from 307 ug/L in 886MW05 to 97,500 ug/L in 886MW02.

**Manganese** was detected at concentrations exceeding the GWQC of 50 ug/L at 13 groundwater monitoring well locations. Concentrations ranged from 54.7 ug/L in 886MW05 to 3000 ug/L in 886MW02.

**Sodium** was detected at a concentration exceeding the GWQC of 50,000 ug/L at one groundwater monitoring well location. A concentration of 61,800 ug/L was detected in 886RW03.

#### 4.5 Quality Assurance/Quality Control (QA/QC)

In order to verify the reliability of the analytical results, Versar reviewed the holding times for each sample and the results of the analysis of seven method blanks (five soil and two groundwater), nine trip blanks (seven soil and two groundwater), two field blanks (groundwater only), and 16 field duplicate samples (14 soil and two groundwater). All samples were analyzed by the FMETL within the prescribed holding time requirements for each analytical method.

### Method Blanks

Laboratory method blanks accompanied each batch of samples for Building 886. These method blanks consist of laboratory-grade water that is processed identically to the samples and analyzed with the sample batch. A total of seven method blanks, five soil and two groundwater, were analyzed with Building 886 samples.

The results of the method blank analyses showed that one VOC was detected in at least one of the five method blank samples collected from the post-excavation soil at Building 886. Acetone was detected in one of the method blanks at a concentration below its NJDEP RDCSCC. The detection of acetone indicates that the sample handling procedures, including the sample glassware, may have introduced contamination into the sampling and analysis process.

The results of the method blank analyses showed that no VOCs, SVOCs, pesticides or PCBs were detected in the two method blank samples collected from the groundwater at Building 886.

Several metals were detected in at least one method blank groundwater sample, including aluminum, calcium, chromium, copper, lead, magnesium, manganese, potassium, selenium, silver, sodium and zinc. All of the metals were detected in only a few samples at very low concentrations below their respective NJDEP GWQC.

### Trip Blanks

A total of nine trip blanks, seven soil and two groundwater, were included as part of Building 886 sampling programs to document that volatile organics were not introduced into the samples during the handling process. The trip blanks were prepared by the FMETL and consisted of sample bottles filled with laboratory deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analysis with the post-excavation soil and groundwater monitoring well samples.

Two VOCs were detected in at least six trip blanks with the post-excavation soil samples. Acetone was detected in six trip blanks, four of which were detected at concentrations exceeding its NJDEP RDCSCC. Chloroform was detected in at least four trip blanks at concentrations above its NJDEP RDCSCC. The detections of chloroform and acetone indicate that the sample handling procedures, including the sample glassware, may have introduced contamination into the sampling and analysis process.

One VOC was detected in at least two trip blanks with the groundwater monitoring well samples. Chloroform was detected in both of the trip blanks at a concentration below its NJDEP GWQC. The detection of chloroform indicates that sample-handling procedures, including the sample glassware, may have introduced contamination into the sampling and analysis process.

### Field Blanks

One field blank sample was obtained during each groundwater sampling activity to document the equipment decontamination procedures. A total of two field blanks were

collected during Building 886 groundwater sampling events. The field blanks were collected by rinsing laboratory-supplied deionized water over the sampling equipment used for each day's activities. The water was collected in clean laboratory-supplied sample jars and submitted for analysis along with Building 886 groundwater samples.

The results of the field blank analyses showed that one VOC was detected in at least two field blanks. Chloroform was detected in both of the field blanks at concentrations below its NJDEP GWQC. As noted for the trip blanks, the detection of chloroform indicates that sample-handling procedures, including the sample glassware, may have introduced contamination into the sampling and analysis process. In addition, the same VOCs found in the field blanks were also found in the trip blanks, suggesting that the sampling and decontamination procedures did not introduce additional contamination.

The results of the field blank analyses showed that no SVOCs, pesticides or PCBs were detected in the 16 field blank groundwater samples collected at Building 886.

As noted for the method blanks, several metals were detected in at least one field blank sample, including aluminum, barium, calcium, chromium, copper, iron, magnesium, manganese, potassium, silver, sodium and zinc. Most of the metals were detected in only a few samples at very low concentrations. Because these metals were all also detected in the method blank samples, the sampling and decontamination procedures do not appear to have been the source of sample contamination. However, any subsequent evaluation of the metals analytical results must account for the possibility of laboratory contamination resulting in false positives for the environmental samples.

#### Duplicate Samples

A total of 16 field duplicate samples (14 soil and two groundwater) were collected during the sampling events to verify the consistency of the entire sampling and analytical procedure throughout the various RI and RA areas. Relative Percent Difference (RPD) was calculated for each duplicate sample. The RPDs for TPH ranged from 2.7% to 200%, however the average RPD for all TPH results is 76.5%. Most of the RPD values are low (below 50%), suggesting reasonable precision in the field and laboratory operations. Some RPD values are high (over 50%), however, this is due to low sample concentrations and a corresponding low MDL used by the laboratory and is not indicative of poor precision because the differences noted may be attributed to the analytical sensitivity. Also, the comparison of one very small number with another very small number will result in a high RPD.

The RPDs for VOCs in soil also ranged from 5.5% to 25.8%, with an average of 9.3%. The RPDs for VOCs in groundwater ranged from 2.2% to 26.4%, and with an average of 9.6%. These RPDs are well below the established limit of 30% for laboratory duplicate samples and indicate that a high level of precision was maintained throughout the sampling and analytical procedures.

Based on average RPDs, the QA/QC sample results indicate good precision for all of the analyses. However, the presence of metals in the method blanks and field blanks indicate

that contamination may have been introduced by the sampling and analysis procedures. Therefore, any subsequent evaluation of the metals analytical results must account for the possibility of laboratory contamination resulting in false positives for the environmental samples.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

This section provides a discussion of the findings of the RA activities and recommendations for future action.

In order to determine the remaining contamination in soil and groundwater at Building 886, the first step was to identify exceedances of the NJDEP RDCSCC in the soil excavation and the NJDEP GWQC in monitoring well samples collected at Building 886. These exceedances are presented in **Section 4.0** above and in **Tables 4-2** and **Table 4-4**.

During the Phase 2 post-excavation soil sampling, TPH was detected in two post-excavation soil samples at concentrations exceeding its RDCSCC. As exceedances were identified, further excavation was performed. This eliminated one of the exceedances. The remaining TPH exceedance at 886-PX19/WW 7.5-8' is located on the north-west corner of the excavation wall. Additional excavation could not be performed due to the occurrence of utility lines which run through the center of the island and parallel to the street (**Figure 3-5**).

During the groundwater monitoring well sampling event, a total of eight groundwater constituents (benzene, methyl ethyl ketone, n-nitrosodiphenylamine, aluminum, arsenic, iron, manganese and sodium) were identified at concentrations exceeding their respective GWQC.

Several factors were used to eliminate or identify analytes as contaminants of concern (COCs), including the magnitude and frequency of the exceedances and comparisons to established background concentrations.

Two VOCs were detected in groundwater at Building 886 at concentrations exceeding their respective NJDEP GWQC. Benzene was detected at concentrations exceeding the GWQC of 1.0 ug/L at three monitoring well locations. Methyl ethyl ketone (2-butanone) was detected at concentrations exceeding the GWQC of 300 ug/L at only two groundwater monitoring well locations. Benzene is considered to be a groundwater COC at Building 886. Methyl ethyl ketone will remain a potential COC at Building 886 until further sampling can better assess the occurrence of this contaminant at the site.

886MW03 had been fitted with 4-6 inch adapter for possibility as use as a recovery well. Handex improperly used glue in the installation of the adapter which may have contributed to the appearance of methyl ethyl ketone at the site. These constituents will continue to be monitored.

One SVOC was detected in groundwater at Building 886 at concentrations exceeding their respective NJDEP GWQC. N-Nitrosodiphenylamine was detected at a concentration exceeding the GWQC of 20 ug/L at one groundwater monitoring well location. N-Nitrosodiphenylamine will remain a potential COC at Building 886 until further sampling can better assess the occurrence of this contaminant at the site.

The five different metals that were detected in Building 886 groundwater at concentrations exceeding their respective NJDEP GWQC are separated into background and non-native metals. The indigenous metals are compared to the Main Post Maximum Background Concentrations (MBC) identified in the Weston SI (1995). The non-native metals are discussed in relation to the New Jersey GWQC only.

Of the five metals detected in Building 886 groundwater that exceeded their respective GWQC, four metals (aluminum, iron, manganese and sodium) are common background constituents in Monmouth County soils. Elevated concentrations of these metals are routinely observed in groundwater samples collected at Fort Monmouth. In consideration of these facts, the groundwater analytical results for these metals were compared to their respective MBCs of 121,000 ug/L (aluminum), 431,000 ug/L (iron), 331 ug/L (manganese) and 21,500 ug/L (sodium), as follows:

- Aluminum is not considered to be a COC because aluminum was not detected at concentrations exceeding the MBC.
- Iron is not considered to be a COC because iron was not detected at concentrations exceeding the MBC.
- Manganese is not considered to be a COC because even though there were exceedences of the MBC in this area, these concentrations are not uncommon in other Fort Monmouth groundwater results. Also, manganese cannot be associated with any release at the site.
- Sodium is not considered to be a COC due to the proximity of Building 886 to sea water.

One non-native metal exceeded its GWQC (arsenic). The results of the soil sampling do not support a localized source of arsenic contamination in subsurface soil at Building 886. Arsenic was detected in only one monitoring well at a concentration greater than its NJDEP GWQC, therefore can be considered an anomalous result. It is unlikely that arsenic is adversely affecting the quality of shallow groundwater at Building 886 or that it will migrate offsite.

A groundwater monitoring program, including quarterly groundwater well monitoring for VOCs and SVOCs is recommended at Building 886.

Monitoring Well	Analyzed for	Future Sampling Status	Reason
886MW01	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Quarterly	No COC detections, but is downgradient of exceeding wells.
886MW02	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Quarterly	No COC detections, but is downgradient/cross-gradient of exceeding wells.
886MW03	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Quarterly	Potential COC exceedence.

886MW04	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Eliminate	No COC exceedences and upgradient of exceeding wells.
886MW05	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Quarterly	No COC exceedences but may be cross-gradient of exceeding wells.
886RW01	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Annually	Potential COC exceedence.
886RW02	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Annually	COC exceedence.
886RW03	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Annually	No COC detections, but is downgradient of exceeding wells.
886RW04	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Annually	No COC detections, but is downgradient of exceeding wells.
886RW05	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Annually	COC exceedence.
886RW06	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Annually	No COC detections, but is downgradient/cross-gradient of exceeding wells.
886RW07	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Annually	COC exceedence.
886RW08	VOCs, SVOCs, Pesticides, PCBs, TAL Metals, TPH	Continue VOCs and SVOCs Annually	Potential COC exceedence.

The estimated annual costs for implementation of the remedial actions to be performed at Building 886 are provided below:

<b>Estimated Annual Costs of Remedial Actions to be Performed at Building 886</b>	
<b>TASK</b>	<b>ESTIMATED COSTS</b>
1. Total Labor Cost	\$ 3,200
2. Laboratory Cost	\$ 12,925
<b>TOTAL ESTIMATED COSTS</b>	<b>\$ 16,125</b>

## 6.0 REFERENCES

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**TABLES**

Table 3-1  
Phase 1 RA Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-PX1	2003501	1/16/2002	Soil	TPH	OQA-QAM-025
	886-PX2	2003502	1/16/2002	Soil	TPH	OQA-QAM-025
	886-PX3	2003503	1/16/2002	Soil	TPH	OQA-QAM-025
	886-PX4	2003504	1/16/2002	Soil	TPH	OQA-QAM-025
	886-DUP (2003504)	2003505	1/16/2002	Soil	TPH	OQA-QAM-025
	886-PX5	2004601	1/25/2002	Soil	TPH	OQA-QAM-025
	886-PX6	2004602	1/25/2002	Soil	TPH	OQA-QAM-025
	886-DUP (2004603)	2004603	1/25/2002	Soil	TPH	OQA-QAM-025
	886-PX7/SW	2006301	1/30/2002	Soil	TPH	OQA-QAM-025
	886-PX8/EW	2006302	1/30/2002	Soil	TPH	OQA-QAM-025
	886-PX9/BOT	2006303	1/30/2002	Soil	TPH	OQA-QAM-025
	886-DUP (2006304)	2006304	1/30/2002	Soil	TPH	OQA-QAM-025
	886-PX10/NW	2007301	2/4/2002	Soil	TPH	OQA-QAM-025
	886-PX11/BOT	2007302	2/4/2002	Soil	TPH	OQA-QAM-025
	886-DUP (2007303)	2007303	2/4/2002	Soil	TPH	OQA-QAM-025
	886-PX12/BOT	2008101	2/6/2002	Soil	TPH	OQA-QAM-025
	886-DUP (2008102)	2008102	2/6/2002	Soil	TPH	OQA-QAM-025
	886-PX12A/BM	2011401	2/26/2002	Soil	TPH	OQA-QAM-025
	886-PX13/BM	2011402	2/26/2002	Soil	TPH	OQA-QAM-025
	886-DUP (2011403)	2011403	2/26/2002	Soil	TPH	OQA-QAM-025
	886-PX14/SW	2013601	3/6/2002	Soil	TPH	OQA-QAM-025
	886-PX15/BOT	2013602	3/6/2002	Soil	TPH	OQA-QAM-025
	886-DUP (2013603)	2013603	3/6/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-1 0-6"	2014601	3/9/2002	Soil	TPH	OQA-QAM-025
	886-1 24"	2014602	3/9/2002	Soil	TPH	OQA-QAM-025
	886-1 48"	2014603	3/9/2002	Soil	TPH	OQA-QAM-025
	886-1 52"	2014604	3/9/2002	Soil	TPH	OQA-QAM-025
	886-1 72"	2014605	3/9/2002	Soil	TPH	OQA-QAM-025
	886-2 0-6"	2014606	3/9/2002	Soil	TPH	OQA-QAM-025
	886-2 24"	2014607	3/9/2002	Soil	TPH	OQA-QAM-025
	886-2 48"	2014608	3/9/2002	Soil	TPH	OQA-QAM-025
	Dup (2014609)	2014609	3/9/2002	Soil	TPH	OQA-QAM-025
	886-2 72"	2014610	3/9/2002	Soil	TPH	OQA-QAM-025
	886-3 0-6"	2014611	3/9/2002	Soil	TPH	OQA-QAM-025
	886-3 24"	2014612	3/9/2002	Soil	TPH	OQA-QAM-025
	886-3 48"	2014613	3/9/2002	Soil	TPH	OQA-QAM-025
	886-3 72"	2014614	3/9/2002	Soil	TPH	OQA-QAM-025
	886-4 0-6"	2014701	3/10/2002	Soil	TPH	OQA-QAM-025
	886-4 24"	2014702	3/10/2002	Soil	TPH	OQA-QAM-025
	886-4 48"	2014703	3/10/2002	Soil	TPH	OQA-QAM-025
	886-4 72"	2014704	3/10/2002	Soil	TPH	OQA-QAM-025
	886-4 96"	2014705	3/10/2002	Soil	TPH	OQA-QAM-025
	886-4 120"	2014706	3/10/2002	Soil	TPH	OQA-QAM-025
	886-4 144"	2014707	3/10/2002	Soil	TPH	OQA-QAM-025
	886-5 0-6"	2014708	3/10/2002	Soil	TPH	OQA-QAM-025
	886-5 24"	2014709	3/10/2002	Soil	TPH	OQA-QAM-025
	886-5 48"	2014710	3/10/2002	Soil	TPH	OQA-QAM-025
	886-5 72"	2014711	3/10/2002	Soil	TPH	OQA-QAM-025
	886-5 96"	2014712	3/10/2002	Soil	TPH	OQA-QAM-025
	886-5 120"	2014713	3/10/2002	Soil	TPH	OQA-QAM-025
	886-5 144"	2014714	3/10/2002	Soil	TPH	OQA-QAM-025
	886-6 0-6"	2014715	3/10/2002	Soil	TPH	OQA-QAM-025
	886-6 24"	2014716	3/10/2002	Soil	TPH	OQA-QAM-025
	886-6 48"	2014717	3/10/2002	Soil	TPH	OQA-QAM-025
	886-6 72"	2014718	3/10/2002	Soil	TPH	OQA-QAM-025
	886-6 96"	2014719	3/10/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-6 120"	2014720	3/10/2002	Soil	TPH	OQA-QAM-025
	886-6 144"	2014721	3/10/2002	Soil	TPH	OQA-QAM-025
	Dup (2014722)	2014722	3/10/2002	Soil	TPH	OQA-QAM-025
	886-7 0-6"	2014901	3/11/2002	Soil	TPH	OQA-QAM-025
	886-7 24"	2014902	3/11/2002	Soil	TPH	OQA-QAM-025
	886-7 48"	2014903	3/11/2002	Soil	TPH	OQA-QAM-025
	886-7 72"	2014904	3/11/2002	Soil	TPH	OQA-QAM-025
	886-7-96"	2014905	3/11/2002	Soil	TPH	OQA-QAM-025
	886-7-120"	2014906	3/11/2002	Soil	TPH	OQA-QAM-025
	886-7-144"	2014907	3/11/2002	Soil	TPH	OQA-QAM-025
	886-8-0-6"	2014908	3/11/2002	Soil	TPH	OQA-QAM-025
	886-8-24"	2014909	3/11/2002	Soil	TPH	OQA-QAM-025
	886-8-48"	2014910	3/11/2002	Soil	TPH	OQA-QAM-025
	886-8-72"	2014911	3/11/2002	Soil	TPH	OQA-QAM-025
	886-8-96"	2014912	3/11/2002	Soil	TPH	OQA-QAM-025
	886-8-120"	2014913	3/11/2002	Soil	TPH	OQA-QAM-025
	886-8-144"	2014914	3/11/2002	Soil	TPH	OQA-QAM-025
	886-9-0-6"	2014915	3/11/2002	Soil	TPH	OQA-QAM-025
	886-9-24"	2014916	3/11/2002	Soil	TPH	OQA-QAM-025
	886-9-48"	2014917	3/11/2002	Soil	TPH	OQA-QAM-025
	886-9-72"	2014918	3/11/2002	Soil	TPH	OQA-QAM-025
	886-9-96"	2014919	3/11/2002	Soil	TPH	OQA-QAM-025
	886-9-120"	2014920	3/11/2002	Soil	TPH	OQA-QAM-025
	886-9-144"	2014921	3/11/2002	Soil	TPH	OQA-QAM-025
	886-10-0-6"	2014922	3/11/2002	Soil	TPH	OQA-QAM-025
	886-10-24"	2014923	3/11/2002	Soil	TPH	OQA-QAM-025
	886-10-48"	2014924	3/11/2002	Soil	TPH	OQA-QAM-025
	886-10-72"	2014925	3/11/2002	Soil	TPH	OQA-QAM-025
	886-10-96"	2014926	3/11/2002	Soil	TPH	OQA-QAM-025
	886-10-120"	2014927	3/11/2002	Soil	TPH	OQA-QAM-025
	886-10-144"	2014928	3/11/2002	Soil	TPH	OQA-QAM-025
	886-11-0-6"	2015301	3/12/2002	Soil	TPH	OQA-QAM-025
	886-11-24"	2015302	3/12/2002	Soil	TPH	OQA-QAM-025
	886-11-48"	2015303	3/12/2002	Soil	TPH	OQA-QAM-025
	886-11-72"	2015304	3/12/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-11-96"	2015305	3/12/2002	Soil	TPH	OQA-QAM-025
	886-11-120"	2015306	3/12/2002	Soil	TPH	OQA-QAM-025
	886-11-144"	2015307	3/12/2002	Soil	TPH	OQA-QAM-025
	886-12-0-6"	2015308	3/12/2002	Soil	TPH	OQA-QAM-025
	886-12-24"	2015309	3/12/2002	Soil	TPH	OQA-QAM-025
	886-12-48"	2015310	3/12/2002	Soil	TPH	OQA-QAM-025
	886-12-72"	2015311	3/12/2002	Soil	TPH	OQA-QAM-025
	886-12-96"	2015312	3/12/2002	Soil	TPH	OQA-QAM-025
	886-12-120"	2015313	3/12/2002	Soil	TPH	OQA-QAM-025
	886-12-144"	2015314	3/12/2002	Soil	TPH	OQA-QAM-025
	886-13-0-6"	2015315	3/12/2002	Soil	TPH	OQA-QAM-025
	886-13-24"	2015316	3/12/2002	Soil	TPH	OQA-QAM-025
	886-13-48"	2015317	3/12/2002	Soil	TPH	OQA-QAM-025
	886-13-72"	2015318	3/12/2002	Soil	TPH	OQA-QAM-025
	886-13-96"	2015319	3/12/2002	Soil	TPH	OQA-QAM-025
	886-13-120"	2015320	3/12/2002	Soil	TPH	OQA-QAM-025
	886-13-144"	2015321	3/12/2002	Soil	TPH	OQA-QAM-025
	886-14-0-6"	2015322	3/12/2002	Soil	TPH	OQA-QAM-025
	886-14-24"	2015323	3/12/2002	Soil	TPH	OQA-QAM-025
	886-14-48"	2015324	3/12/2002	Soil	TPH	OQA-QAM-025
	886-14-72"	2015325	3/12/2002	Soil	TPH	OQA-QAM-025
	886-14-96"	2015326	3/12/2002	Soil	TPH	OQA-QAM-025
	886-14-120"	2015327	3/12/2002	Soil	TPH	OQA-QAM-025
	886-14-144"	2015328	3/12/2002	Soil	TPH	OQA-QAM-025
	886-15-0-6"	2015329	3/12/2002	Soil	TPH	OQA-QAM-025
	886-15-24"	2015330	3/12/2002	Soil	TPH	OQA-QAM-025
	886-15-48"	2015331	3/12/2002	Soil	TPH	OQA-QAM-025
	886-15-72"	2015332	3/12/2002	Soil	TPH	OQA-QAM-025
	886-15-96"	2015333	3/12/2002	Soil	TPH	OQA-QAM-025
	886-15-120"	2015334	3/12/2002	Soil	TPH	OQA-QAM-025
	886-15-144"	2015335	3/12/2002	Soil	TPH	OQA-QAM-025
	886-16-0-6"	2015336	3/12/2002	Soil	TPH	OQA-QAM-025
	886-16-24"	2015337	3/12/2002	Soil	TPH	OQA-QAM-025
	886-16-48"	2015338	3/12/2002	Soil	TPH	OQA-QAM-025
	886-16-72"	2015339	3/12/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-16-96"	2015340	3/12/2002	Soil	TPH	OQA-QAM-025
	886-16-120"	2015341	3/12/2002	Soil	TPH	OQA-QAM-025
	886-16-144"	2015342	3/12/2002	Soil	TPH	OQA-QAM-025
	886-17-0-6"	2015343	3/12/2002	Soil	TPH	OQA-QAM-025
	886-17-24"	2015344	3/12/2002	Soil	TPH	OQA-QAM-025
	886-17-48"	2015345	3/12/2002	Soil	TPH	OQA-QAM-025
	886-17-72"	2015346	3/12/2002	Soil	TPH	OQA-QAM-025
	886-17-96"	2015347	3/12/2002	Soil	TPH	OQA-QAM-025
	886-17-120"	2015348	3/12/2002	Soil	TPH	OQA-QAM-025
	886-17-144"	2015349	3/12/2002	Soil	TPH	OQA-QAM-025
	886-18-0-6"	2015350	3/12/2002	Soil	TPH	OQA-QAM-025
	886-18-24"	2015351	3/12/2002	Soil	TPH	OQA-QAM-025
	886-18-48"	2015352	3/12/2002	Soil	TPH	OQA-QAM-025
	886-18-72"	2015353	3/12/2002	Soil	TPH	OQA-QAM-025
	886-18-96"	2015354	3/12/2002	Soil	TPH	OQA-QAM-025
	886-18-120"	2015355	3/12/2002	Soil	TPH	OQA-QAM-025
	886-18-144"	2015356	3/12/2002	Soil	TPH	OQA-QAM-025
	886-19-0-6"	2015357	3/12/2002	Soil	TPH	OQA-QAM-025
	886-19-24"	2015358	3/12/2002	Soil	TPH	OQA-QAM-025
	886-19-48"	2015359	3/12/2002	Soil	TPH	OQA-QAM-025
	886-19-72"	2015360	3/12/2002	Soil	TPH	OQA-QAM-025
	886-19-96"	2015361	3/12/2002	Soil	TPH	OQA-QAM-025
	886-19-120"	2015362	3/12/2002	Soil	TPH	OQA-QAM-025
	886-19-144"	2015363	3/12/2002	Soil	TPH	OQA-QAM-025
	Dup 1 (2015364)	2015364	3/12/2002	Soil	TPH	OQA-QAM-025
	Dup 2 (2015365)	2015365	3/12/2002	Soil	TPH	OQA-QAM-025
	Dup. 3 (2015366)	2015366	3/12/2002	Soil	TPH	OQA-QAM-025
	886-20-0-6"	2015501	3/14/2002	Soil	TPH	OQA-QAM-025
	886-20-24"	2015502	3/14/2002	Soil	TPH	OQA-QAM-025
	886-20-48"	2015503	3/14/2002	Soil	TPH	OQA-QAM-025
	886-20-72"	2015504	3/14/2002	Soil	TPH	OQA-QAM-025
	886-20-96"	2015505	3/14/2002	Soil	TPH	OQA-QAM-025
	886-20-120"	2015506	3/14/2002	Soil	TPH	OQA-QAM-025
	886-20-144"	2015507	3/14/2002	Soil	TPH	OQA-QAM-025
	886-21-0-6"	2015508	3/14/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-21-24"	2015509	3/14/2002	Soil	TPH	OQA-QAM-025
	886-21-48"	2015510	3/14/2002	Soil	TPH	OQA-QAM-025
	886-21-72"	2015511	3/14/2002	Soil	TPH	OQA-QAM-025
	886-21-96"	2015512	3/14/2002	Soil	TPH	OQA-QAM-025
	886-21-120"	2015513	3/14/2002	Soil	TPH	OQA-QAM-025
	886-21-144"	2015514	3/14/2002	Soil	TPH	OQA-QAM-025
	886-22-0-6"	2015515	3/14/2002	Soil	TPH	OQA-QAM-025
	886-22-24"	2015516	3/14/2002	Soil	TPH	OQA-QAM-025
	886-22-48"	2015517	3/14/2002	Soil	TPH	OQA-QAM-025
	886-22-72"	2015518	3/14/2002	Soil	TPH	OQA-QAM-025
	886-22-96"	2015519	3/14/2002	Soil	TPH	OQA-QAM-025
	886-22-120"	2015520	3/14/2002	Soil	TPH	OQA-QAM-025
	886-22-144"	2015521	3/14/2002	Soil	TPH	OQA-QAM-025
	886-23-0-6"	2015522	3/14/2002	Soil	TPH	OQA-QAM-025
	886-23-24"	2015523	3/14/2002	Soil	TPH	OQA-QAM-025
	886-23-48"	2015524	3/14/2002	Soil	TPH	OQA-QAM-025
	886-23-72"	2015525	3/14/2002	Soil	TPH	OQA-QAM-025
	886-23-96"	2015526	3/14/2002	Soil	TPH	OQA-QAM-025
	886-23-120"	2015527	3/14/2002	Soil	TPH	OQA-QAM-025
	886-23-144"	2015528	3/14/2002	Soil	TPH	OQA-QAM-025
	886-24-0-6"	2015529	3/14/2002	Soil	TPH	OQA-QAM-025
	886-24-24"	2015530	3/14/2002	Soil	TPH	OQA-QAM-025
	886-24-48"	2015531	3/14/2002	Soil	TPH	OQA-QAM-025
	886-24-72"	2015532	3/14/2002	Soil	TPH	OQA-QAM-025
	886-24-96"	2015533	3/14/2002	Soil	TPH	OQA-QAM-025
	886-24-120"	2015534	3/14/2002	Soil	TPH	OQA-QAM-025
	886-24-144"	2015535	3/14/2002	Soil	TPH	OQA-QAM-025
	886-1-120"	2015536	3/14/2002	Soil	TPH	OQA-QAM-025
	886-1-144"	2015537	3/14/2002	Soil	TPH	OQA-QAM-025
	886-2-120"	2015538	3/14/2002	Soil	TPH	OQA-QAM-025
	886-2-144"	2015539	3/14/2002	Soil	TPH	OQA-QAM-025
	886-3-120"	2015540	3/14/2002	Soil	TPH	OQA-QAM-025
	886-3-144"	2015541	3/14/2002	Soil	TPH	OQA-QAM-025
	Dup 1 (2015542)	2015542	3/14/2002	Soil	TPH	OQA-QAM-025
	Dup 2 (2015543)	2015543	3/14/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	Dup 3 (2015544)	2015544	3/14/2002	Soil	TPH	OQA-QAM-025
	Dup (2018502)	2018502	4/5/2002	Soil	VOCs	Method 8260
	1-48"	2018503	4/5/2002	Soil	VOCs	Method 8260
	4-72"	2018504	4/5/2002	Soil	VOCs	Method 8260
	5-72"	2018505	4/5/2002	Soil	VOCs	Method 8260
	6-96"	2018506	4/5/2002	Soil	VOCs	Method 8260
	15-72"	2018507	4/5/2002	Soil	VOCs	Method 8260
	7-72"	2018508	4/5/2002	Soil	VOCs	Method 8260
	Dup (2018802)	2018802	4/8/2002	Soil	VOCs	Method 8260
	14-48"	2018803	4/8/2002	Soil	VOCs	Method 8260
	17-72"	2018804	4/8/2002	Soil	VOCs	Method 8260
	8-24"	2018805	4/8/2002	Soil	VOCs	Method 8260
	13-96"	2018806	4/8/2002	Soil	VOCs	Method 8260
	18-48"	2018807	4/8/2002	Soil	VOCs	Method 8260
	18-96"	2018808	4/8/2002	Soil	VOCs	Method 8260
	9-72"	2018809	4/8/2002	Soil	VOCs	Method 8260
	12-72"	2018810	4/8/2002	Soil	VOCs	Method 8260
	11-72"	2018811	4/8/2002	Soil	VOCs	Method 8260
	23-96"	2018812	4/8/2002	Soil	VOCs	Method 8260
	886-25-0-6"	2019701	4/12/2002	Soil	TPH	OQA-QAM-025
	886-25-24"	2019702	4/12/2002	Soil	TPH	OQA-QAM-025
	886-25-48"	2019703	4/12/2002	Soil	TPH	OQA-QAM-025
	886-25-72"	2019704	4/12/2002	Soil	TPH	OQA-QAM-025
	886-25-96"	2019705	4/12/2002	Soil	TPH	OQA-QAM-025
	886-25-120"	2019706	4/12/2002	Soil	TPH	OQA-QAM-025
	886-25-144"	2019707	4/12/2002	Soil	TPH	OQA-QAM-025
	886-26-0-6"	2019708	4/12/2002	Soil	TPH	OQA-QAM-025
	886-26-24"	2019709	4/12/2002	Soil	TPH	OQA-QAM-025
	886-26-48"	2019710	4/12/2002	Soil	TPH	OQA-QAM-025
	886-26-72"	2019711	4/12/2002	Soil	TPH	OQA-QAM-025
	886-26-96"	2019712	4/12/2002	Soil	TPH	OQA-QAM-025
	886-26-120"	2019713	4/12/2002	Soil	TPH	OQA-QAM-025
	886-26-144"	2019714	4/12/2002	Soil	TPH	OQA-QAM-025
	886-27-0-6"	2019715	4/12/2002	Soil	TPH	OQA-QAM-025
	886-27-24"	2019716	4/12/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
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Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-27-48"	2019717	4/12/2002	Soil	TPH	OQA-QAM-025
	886-27-72"	2019718	4/12/2002	Soil	TPH	OQA-QAM-025
	886-27-96"	2019719	4/12/2002	Soil	TPH	OQA-QAM-025
	886-27-120"	2019720	4/12/2002	Soil	TPH	OQA-QAM-025
	886-27-144"	2019721	4/12/2002	Soil	TPH	OQA-QAM-025
	886-28-0-6"	2019722	4/12/2002	Soil	TPH	OQA-QAM-025
	886-28-24"	2019723	4/12/2002	Soil	TPH	OQA-QAM-025
	886-28-48"	2019724	4/12/2002	Soil	TPH	OQA-QAM-025
	886-28-72"	2019725	4/12/2002	Soil	TPH	OQA-QAM-025
	886-28-96"	2019726	4/12/2002	Soil	TPH	OQA-QAM-025
	886-28-120"	2019727	4/12/2002	Soil	TPH	OQA-QAM-025
	886-28-144"	2019728	4/12/2002	Soil	TPH	OQA-QAM-025
	Dup (2019729)	2019729	4/12/2002	Soil	TPH	OQA-QAM-025
	886-29-0-6"	2021101	4/18/2002	Soil	TPH	OQA-QAM-025
	886-29-24"	2021102	4/18/2002	Soil	TPH	OQA-QAM-025
	886-29-48"	2021103	4/18/2002	Soil	TPH	OQA-QAM-025
	886-29-72"	2021104	4/18/2002	Soil	TPH	OQA-QAM-025
	886-29-96"	2021105	4/18/2002	Soil	TPH	OQA-QAM-025
	886-29-120"	2021106	4/18/2002	Soil	TPH	OQA-QAM-025
	886-29-144"	2021107	4/18/2002	Soil	TPH	OQA-QAM-025
	886-30-0-6"	2021108	4/18/2002	Soil	TPH	OQA-QAM-025
	886-30-24"	2021109	4/18/2002	Soil	TPH	OQA-QAM-025
	886-30-48"	2021110	4/18/2002	Soil	TPH	OQA-QAM-025
	886-30-72"	2021111	4/18/2002	Soil	TPH	OQA-QAM-025
	886-30-96"	2021112	4/18/2002	Soil	TPH	OQA-QAM-025
	886-30-120"	2021113	4/18/2002	Soil	TPH	OQA-QAM-025
	886-30-144"	2021114	4/18/2002	Soil	TPH	OQA-QAM-025
	886-31-0-6"	2021115	4/18/2002	Soil	TPH	OQA-QAM-025
	886-31-24"	2021116	4/18/2002	Soil	TPH	OQA-QAM-025
	886-31-48"	2021117	4/18/2002	Soil	TPH	OQA-QAM-025
	886-31-72"	2021118	4/18/2002	Soil	TPH	OQA-QAM-025
	886-31-96"	2021119	4/18/2002	Soil	TPH	OQA-QAM-025
	886-31-120"	2021120	4/18/2002	Soil	TPH	OQA-QAM-025
	886-31-144"	2021121	4/18/2002	Soil	TPH	OQA-QAM-025
	886-32-0-6"	2021122	4/18/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-32-24"	2021123	4/18/2002	Soil	TPH	OQA-QAM-025
	886-32-48"	2021124	4/18/2002	Soil	TPH	OQA-QAM-025
	886-32-72"	2021125	4/18/2002	Soil	TPH	OQA-QAM-025
	886-32-96"	2021126	4/18/2002	Soil	TPH	OQA-QAM-025
	886-32-120"	2021127	4/18/2002	Soil	TPH	OQA-QAM-025
	886-32-144"	2021128	4/18/2002	Soil	TPH	OQA-QAM-025
	Dup (2021129)	2021129	4/18/2002	Soil	TPH	OQA-QAM-025
	886-33-0-6"	2021301	4/19/2002	Soil	TPH	OQA-QAM-025
	886-33-24"	2021302	4/19/2002	Soil	TPH	OQA-QAM-025
	886-33-48"	2021303	4/19/2002	Soil	TPH	OQA-QAM-025
	886-33-72"	2021304	4/19/2002	Soil	TPH	OQA-QAM-025
	886-33-96"	2021305	4/19/2002	Soil	TPH	OQA-QAM-025
	886-33-120"	2021306	4/19/2002	Soil	TPH	OQA-QAM-025
	886-33-144"	2021307	4/19/2002	Soil	TPH	OQA-QAM-025
	886-34-0-6"	2021308	4/19/2002	Soil	TPH	OQA-QAM-025
	886-34-24"	2021309	4/19/2002	Soil	TPH	OQA-QAM-025
	886-34-48"	2021310	4/19/2002	Soil	TPH	OQA-QAM-025
	886-34-72"	2021311	4/19/2002	Soil	TPH	OQA-QAM-025
	886-34-96"	2021312	4/19/2002	Soil	TPH	OQA-QAM-025
	886-34-120"	2021313	4/19/2002	Soil	TPH	OQA-QAM-025
	886-34-144"	2021314	4/19/2002	Soil	TPH	OQA-QAM-025
	886-35-0-6"	2021315	4/19/2002	Soil	TPH	OQA-QAM-025
	886-35-24"	2021316	4/19/2002	Soil	TPH	OQA-QAM-025
	886-35-48"	2021317	4/19/2002	Soil	TPH	OQA-QAM-025
	886-35-72"	2021318	4/19/2002	Soil	TPH	OQA-QAM-025
	886-35-96"	2021319	4/19/2002	Soil	TPH	OQA-QAM-025
	886-35-120"	2021320	4/19/2002	Soil	TPH	OQA-QAM-025
	886-35-144"	2021321	4/19/2002	Soil	TPH	OQA-QAM-025
	Dup (2021322)	2021322	4/19/2002	Soil	TPH	OQA-QAM-025
	886-36-0-6"	2027001	5/10/2002	Soil	TPH	OQA-QAM-025
	886-36-2'	2027002	5/10/2002	Soil	TPH	OQA-QAM-025
	886-36-4'	2027003	5/10/2002	Soil	TPH	OQA-QAM-025
	886-36-6'	2027004	5/10/2002	Soil	TPH	OQA-QAM-025
	886-36-8'	2027005	5/10/2002	Soil	TPH	OQA-QAM-025
	886-36-10'	2027006	5/10/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-36-12'	2027007	5/10/2002	Soil	TPH	OQA-QAM-025
	886-41 0-6"	2035901	6/10/2002	Soil	TPH	OQA-QAM-025
	886-41 2'	2035902	6/10/2002	Soil	TPH	OQA-QAM-025
	886-41 4'	2035903	6/10/2002	Soil	TPH	OQA-QAM-025
	886-41 6'	2035904	6/10/2002	Soil	TPH	OQA-QAM-025
	886-41 8'	2035905	6/10/2002	Soil	TPH	OQA-QAM-025
	886-41 10'	2035906	6/10/2002	Soil	TPH	OQA-QAM-025
	886-41 12'	2035907	6/10/2002	Soil	TPH	OQA-QAM-025
	886-40 0-6"	2035908	6/10/2002	Soil	TPH	OQA-QAM-025
	886-40 2'	2035909	6/10/2002	Soil	TPH	OQA-QAM-025
	886-40 4'	2035910	6/10/2002	Soil	TPH	OQA-QAM-025
	886-40 6'	2035911	6/10/2002	Soil	TPH	OQA-QAM-025
	886-40 8'	2035912	6/10/2002	Soil	TPH	OQA-QAM-025
	886-40 10'	2035913	6/10/2002	Soil	TPH	OQA-QAM-025
	886-40 12'	2035914	6/10/2002	Soil	TPH	OQA-QAM-025
	886-39 0-6"	2035915	6/10/2002	Soil	TPH	OQA-QAM-025
	886-39 2'	2035916	6/10/2002	Soil	TPH	OQA-QAM-025
	886-39 4'	2035917	6/10/2002	Soil	TPH	OQA-QAM-025
	886-39 6'	2035918	6/10/2002	Soil	TPH	OQA-QAM-025
	886-39 8'	2035919	6/10/2002	Soil	TPH	OQA-QAM-025
	886-39 10'	2035920	6/10/2002	Soil	TPH	OQA-QAM-025
	886-39 12'	2035921	6/10/2002	Soil	TPH	OQA-QAM-025
	886-38 0-6"	2035922	6/10/2002	Soil	TPH	OQA-QAM-025
	886-38 2'	2035923	6/10/2002	Soil	TPH	OQA-QAM-025
	886-38 4'	2035924	6/10/2002	Soil	TPH	OQA-QAM-025
	886-38 6'	2035925	6/10/2002	Soil	TPH	OQA-QAM-025
	886-38 8'	2035926	6/10/2002	Soil	TPH	OQA-QAM-025
	886-38 10'	2035927	6/10/2002	Soil	TPH	OQA-QAM-025
	886-38 12'	2035928	6/10/2002	Soil	TPH	OQA-QAM-025
	886-37 0-6"	2035929	6/10/2002	Soil	TPH	OQA-QAM-025
	886-37 2'	2035930	6/10/2002	Soil	TPH	OQA-QAM-025
	886-37 4'	2035931	6/10/2002	Soil	TPH	OQA-QAM-025
	886-37 6'	2035932	6/10/2002	Soil	TPH	OQA-QAM-025
	886-37 8'	2035933	6/10/2002	Soil	TPH	OQA-QAM-025
	886-37 10'	2035934	6/10/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-37 12'	2035935	6/10/2002	Soil	TPH	OQA-QAM-025
	886-47 0-6"	2037901	6/18/2002	Soil	TPH	OQA-QAM-025
	886-47 2'	2037902	6/18/2002	Soil	TPH	OQA-QAM-025
	886-47 4'	2037903	6/18/2002	Soil	TPH	OQA-QAM-025
	886-47 6'	2037904	6/18/2002	Soil	TPH	OQA-QAM-025
	886-47 8'	2037905	6/18/2002	Soil	TPH	OQA-QAM-025
	886-47 10'	2037906	6/18/2002	Soil	TPH	OQA-QAM-025
	886-47 12'	2037907	6/18/2002	Soil	TPH	OQA-QAM-025
	886-46 0-6"	2037908	6/18/2002	Soil	TPH	OQA-QAM-025
	886-46 2'	2037909	6/18/2002	Soil	TPH	OQA-QAM-025
	886-46 4'	2037910	6/18/2002	Soil	TPH	OQA-QAM-025
	886-46 6'	2037911	6/18/2002	Soil	TPH	OQA-QAM-025
	886-46 8'	2037912	6/18/2002	Soil	TPH	OQA-QAM-025
	886-46 10'	2037913	6/18/2002	Soil	TPH	OQA-QAM-025
	886-46 12'	2037914	6/18/2002	Soil	TPH	OQA-QAM-025
	886-42 0-6"	2037915	6/18/2002	Soil	TPH	OQA-QAM-025
	886-42 2'	2037916	6/18/2002	Soil	TPH	OQA-QAM-025
	886-42 4'	2037917	6/18/2002	Soil	TPH	OQA-QAM-025
	886-42 6'	2037918	6/18/2002	Soil	TPH	OQA-QAM-025
	886-42 8'	2037919	6/18/2002	Soil	TPH	OQA-QAM-025
	886-42 10'	2037920	6/18/2002	Soil	TPH	OQA-QAM-025
	886-42 12'	2037921	6/18/2002	Soil	TPH	OQA-QAM-025
	886-43 0-6"	2037922	6/18/2002	Soil	TPH	OQA-QAM-025
	886-43 2'	2037923	6/18/2002	Soil	TPH	OQA-QAM-025
	886-43 4'	2037924	6/18/2002	Soil	TPH	OQA-QAM-025
	886-43 6'	2037925	6/18/2002	Soil	TPH	OQA-QAM-025
	886-43 8'	2037926	6/18/2002	Soil	TPH	OQA-QAM-025
	886-43 10'	2037927	6/18/2002	Soil	TPH	OQA-QAM-025
	886-43 12'	2037928	6/18/2002	Soil	TPH	OQA-QAM-025
	886-44 0-6"	2037929	6/18/2002	Soil	TPH	OQA-QAM-025
	886-44 2'	2037930	6/18/2002	Soil	TPH	OQA-QAM-025
	886-44 4'	2037931	6/18/2002	Soil	TPH	OQA-QAM-025
	886-44 6'	2037932	6/18/2002	Soil	TPH	OQA-QAM-025
	886-44 8'	2037933	6/18/2002	Soil	TPH	OQA-QAM-025
	886-44 10'	2037934	6/18/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-2  
Phase 1 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-44 12'	2037935	6/18/2002	Soil	TPH	OQA-QAM-025
	886-45 0-6"	2038101	6/19/2002	Soil	TPH	OQA-QAM-025
	886-45 2'	2038102	6/19/2002	Soil	TPH	OQA-QAM-025
	886-45 4'	2038103	6/19/2002	Soil	TPH	OQA-QAM-025
	886-45 6'	2038104	6/19/2002	Soil	TPH	OQA-QAM-025
	886-45 8'	2038105	6/19/2002	Soil	TPH	OQA-QAM-025
	886-45 12'	2038107	6/19/2002	Soil	TPH	OQA-QAM-025
	886-48 0-6"	2039901	6/26/2002	Soil	TPH	OQA-QAM-025
	886-48 2'	2039902	6/26/2002	Soil	TPH	OQA-QAM-025
	886-48 4'	2039903	6/26/2002	Soil	TPH	OQA-QAM-025
	886-48 6'	2039904	6/26/2002	Soil	TPH	OQA-QAM-025
	886-48 8'	2039905	6/26/2002	Soil	TPH	OQA-QAM-025
	886-48 10'	2039906	6/26/2002	Soil	TPH	OQA-QAM-025
	886-48 12'	2039907	6/26/2002	Soil	TPH	OQA-QAM-025
	16-4'	2066502	9/17/2002	Soil	VOCs	Method 8260
	25-2'	2066503	9/17/2002	Soil	VOCs	Method 8260
	29-4'	2066504	9/17/2002	Soil	VOCs	Method 8260
	30-8'	2066505	9/17/2002	Soil	VOCs	Method 8260
	31-6'	2066506	9/17/2002	Soil	VOCs	Method 8260
	34-2'	2066507	9/17/2002	Soil	VOCs	Method 8260
	40-4'	2066508	9/17/2002	Soil	VOCs	Method 8260
	41-8'	2066509	9/17/2002	Soil	VOCs	Method 8260
	FD-4' (2066510)	2066510	9/17/2002	Soil	VOCs	Method 8260

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

**Table 3-3**  
**Product Recovery Measurements**  
**Building 886**  
**Fort Monmouth, New Jersey**

<b>DATE</b>	<b>Product Thickness (inches)</b>	<b>Volume-Removed (pints)</b>
	<b>RW 4</b>	
<b>4/6/05</b>	<b>0.03</b>	<b>2</b>
<b>4/12/05</b>	<b>trace</b>	<b>0</b>
<b>4/22/05</b>	<b>trace</b>	<b>0</b>
<b>4/29/05</b>	<b>trace</b>	<b>0</b>
<b>5/5/05</b>	<b>trace</b>	<b>0</b>
<b>5/18/05</b>	<b>trace</b>	<b>0</b>
<b>6/27/05</b>	<b>trace</b>	<b>0</b>
<b>9/1/05</b>	<b>0.0</b>	<b>0</b>

Table 3-4  
 RI Geoprobe Groundwater Sampling Summary  
 886  
 Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	Loc. #13 12-16'	2040503	6/27/2002	Aqueous	SVOCs; VOCs	Method 8270; Method 8260
	Loc. #29 12-16'	2040504	6/27/2002	Aqueous	SVOCs; VOCs	Method 8270; Method 8260

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
 VOCs = Volatile Organic Compounds  
 SVOCs = Semi-Volatile Organic Compounds  
 Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-5  
 RI Geoprobe Groundwater Sampling Summary  
 886  
 Fort Monmouth, New Jersey

WELL ID	Criterion	Units	Loc. #13 12-16'	Loc. #29 12-16'
Date Collected			6/27/2002	6/27/2002
ANALYTE / Lab ID			2040503	2040504

**VOCs**

1,1,2,2-Tetrachloroethane	* 1	ug/L	ND	ND
1,2-Dichlorobenzene	600	ug/L	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND
Acetone	700	ug/L	ND	ND
Benzene	1	ug/L	ND	ND
Chloroform	6	ug/L	ND	ND
Dibromochloromethane	10	ug/L	ND	ND
Ethylbenzene	700	ug/L	ND	ND
Methyl ethyl ketone (2-Butanone)	300	ug/L	ND	ND
Methyl tertiary butyl ether (MTBE)	* 70	ug/L	ND	ND
Styrene	100	ug/L	ND	ND
Tetrachloroethylene	1	ug/L	ND	ND
Toluene	1000	ug/L	ND	ND
Xylenes (Total)	* 1000	ug/L	ND	ND

**SVOCs**

1,2-Dichlorobenzene	600	ug/l	ND	ND
1,3-Dichlorobenzene	600	ug/l	ND	ND
1,4-Dichlorobenzene	75	ug/l	ND	ND
2-Methylnaphthalene	* 100	ug/l	ND	ND
Acenaphthene	400	ug/l	ND	ND
Acenaphthylene	* 100	ug/l	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND
Dibenzofuran	* 100	ug/l	ND	ND
Diethylphthalate	5000	ug/l	ND	ND
Fluorene	300	ug/l	ND	ND
Naphthalene	* 300	ug/l	ND	ND
N-Nitrosodiphenylamine	20	ug/l	ND	ND
Phenanthrene	* 100	ug/l	ND	ND
Pyrene	200	ug/l	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons;  
 PCBs = polychlorinated biphenyls; MDL = Method Detection Limit; ND = Not Detected;  
 ug/L = micrograms per liter, equivalent to parts per billion (ppb); mg/kg = milligrams per kilogram, equivalent to parts per million; NA = Not Analyzed/Not Applicable;  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion;

Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

*Tuesday, January 10, 2006*

*Sample Group # 0  
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Table 3-6  
Phase 2 RI Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-49-7.5	2079602	11/7/2002	Soil	TPH	OQA-QAM-025
	886-50-7.5	2079603	11/7/2002	Soil	TPH	OQA-QAM-025
	886-51-7.5	2079604	11/7/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-52-7.5	2079605	11/7/2002	Soil	TPH	OQA-QAM-025
	886-53-7.5	2079606	11/7/2002	Soil	TPH	OQA-QAM-025
	886-Dup (2079802)	2079802	11/8/2002	Soil	TPH	OQA-QAM-025
	886-54-8.5	2079803	11/8/2002	Soil	TPH	OQA-QAM-025
	886-54-10.5	2079804	11/8/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-55-8.5	2079805	11/8/2002	Soil	TPH	OQA-QAM-025
	886-41-8'	2081202	11/14/2002	Soil	TPH	OQA-QAM-025
	886-41-10'	2081203	11/14/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-56-6	2084402	11/25/2002	Soil	TPH	OQA-QAM-025
	886-56-8	2084403	11/25/2002	Soil	TPH	OQA-QAM-025
	886-56-12	2084404	11/25/2002	Soil	TPH	OQA-QAM-025
	886-57-4	2084405	11/25/2002	Soil	TPH	OQA-QAM-025
	886-57-6	2084406	11/25/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-57-8	2084407	11/25/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-57-10	2084408	11/25/2002	Soil	TPH	OQA-QAM-025
	886-57-12.5	2084409	11/25/2002	Soil	TPH	OQA-QAM-025
	886-41-6	2084902	11/26/2002	Soil	TPH	OQA-QAM-025
	886-41-7.5	2084903	11/26/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-41-10	2084904	11/26/2002	Soil	TPH	OQA-QAM-025
	886-41-12	2084905	11/26/2002	Soil	TPH	OQA-QAM-025
	886-58-6	2084906	11/26/2002	Soil	TPH	OQA-QAM-025
	886-58-8	2084907	11/26/2002	Soil	TPH	OQA-QAM-025
	886-58-10	2084908	11/26/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-58-12	2084909	11/26/2002	Soil	TPH	OQA-QAM-025
	886-59-6	2084910	11/26/2002	Soil	TPH	OQA-QAM-025
	886-59-8	2084911	11/26/2002	Soil	TPH	OQA-QAM-025
	886-59-10	2084912	11/26/2002	Soil	TPH	OQA-QAM-025
	886-59-12	2084913	11/26/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-7  
Phase 2 RA Post-Ex Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-PX14A/NW	2077901	11/1/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX15A/WW	2077902	11/1/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX16/SW	2077903	11/1/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX17/BOT	2077904	11/1/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX18/BOT	2077905	11/1/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-DUP (2077906)	2077906	11/1/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX19/WW	2079101	11/6/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX20/NW	2079102	11/6/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX21/EW	2079103	11/6/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX22/BOT	2079104	11/6/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-DUP (2079105)	2079105	11/6/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX23 W	2079401	11/7/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX24W	2079402	11/7/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX25 E	2079403	11/7/2002	Soil	TPH	OQA-QAM-025
	886-PX26 E	2079404	11/7/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX27 B	2079405	11/7/2002	Soil	TPH	OQA-QAM-025
	886-PX28 B	2079406	11/7/2002	Soil	TPH	OQA-QAM-025
	886-PX29 W	2079901	11/8/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX30 W	2079902	11/8/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX31 W	2079903	11/8/2002	Soil	TPH	OQA-QAM-025
	886-PX32 B	2079904	11/8/2002	Soil	TPH	OQA-QAM-025
	886-PX33 B	2079905	11/8/2002	Soil	TPH	OQA-QAM-025
	886-PX34 B	2079906	11/8/2002	Soil	TPH	OQA-QAM-025
	886-PX35 S	2079908	11/8/2002	Soil	TPH	OQA-QAM-025
	886-PX36 N	2080001	11/11/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX37 E	2080002	11/11/2002	Soil	TPH	OQA-QAM-025
	886-PX38 E	2080003	11/11/2002	Soil	TPH	OQA-QAM-025
	886-PX39 B	2080004	11/11/2002	Soil	TPH	OQA-QAM-025
	886-Dup (2080005)	2080005	11/11/2002	Soil	TPH	OQA-QAM-025
	886-PX40 B	2080701	11/13/2002	Soil	TPH	OQA-QAM-025
	886-PX41 B	2080702	11/13/2002	Soil	TPH	OQA-QAM-025
	886-PX42 B	2080703	11/13/2002	Soil	TPH	OQA-QAM-025
	886-PX43 S	2080704	11/13/2002	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-7  
Phase 2 RA Post-Ex Soil Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886-PX44 E	2080705	11/13/2002	Soil	TPH	OQA-QAM-025
	886-PX45 E	2080706	11/13/2002	Soil	TPH	OQA-QAM-025
	886-PX46 B	2083101	11/21/2002	Soil	TPH	OQA-QAM-025
	886-PX47 N	2083102	11/21/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX48 E	2083103	11/21/2002	Soil	TPH	OQA-QAM-025
	886-PX49 W	2083104	11/21/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX50 N	2086501	12/3/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX51 N	2086502	12/3/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-Dup (2086503)	2086503	12/3/2002	Soil	TPH; VOCs	OQA-QAM-025; Method 8260
	886-PX52 N	3002501	1/15/2003	Soil	TPH	OQA-QAM-025
	886-PX53 N	3002502	1/15/2003	Soil	TPH	OQA-QAM-025
	886-PX54 W	3002503	1/15/2003	Soil	TPH	OQA-QAM-025
	886-PX55 B	3002504	1/15/2003	Soil	TPH	OQA-QAM-025
	886-Dup (3002505)	3002505	1/15/2003	Soil	TPH	OQA-QAM-025
	886-PX56 N	3005701	2/3/2003	Soil	TPH	OQA-QAM-025
	886-PX57 W	3005702	2/3/2003	Soil	TPH	OQA-QAM-025
	886-PX58 S	3005703	2/3/2003	Soil	TPH	OQA-QAM-025
	886-PX59 B	3005704	2/3/2003	Soil	TPH	OQA-QAM-025
	886-Dup (3005705)	3005705	2/3/2003	Soil	TPH	OQA-QAM-025
	886-PX60 W	3007101	2/14/2003	Soil	TPH	OQA-QAM-025
	886-PX61 S	3007102	2/14/2003	Soil	TPH	OQA-QAM-025
	886-PX62 E	3007103	2/14/2003	Soil	TPH	OQA-QAM-025
	886-PX63 E	3007104	2/14/2003	Soil	TPH	OQA-QAM-025
	886-PX64 N	3007105	2/14/2003	Soil	TPH	OQA-QAM-025
	886-PX65 B	3007106	2/14/2003	Soil	TPH	OQA-QAM-025
	886-PX66 B	3007107	2/14/2003	Soil	TPH	OQA-QAM-025
	886-Dup (3007108)	3007108	2/14/2003	Soil	TPH	OQA-QAM-025

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 3-8  
Groundwater Monitoring Well Sampling Summary  
886  
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886RW03	3006104	2/5/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886RW04	3006105	2/5/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886RW05	3006106	2/5/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886RW02	3006107	2/5/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886RW01	3006108	2/5/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886RW08	3006109	2/5/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886RW07	3006604	2/12/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886RW06	3006605	2/12/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886MW03	3006606	2/12/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886MW01	3006607	2/12/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886MW02	3006608	2/12/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886MW05	3006609	2/12/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82
	886MW04	3006610	2/12/2003	Aqueous	Metals; Pest/PCBs; SVOCs; TPH; VOCs	SW 846 - 3115B and 3120; Method 608; Method 8270; OQA-QAM-025; Method 82

Notes: Metals = Target Analyte List Metals; TPH = Total Petroleum Hydrocarbons  
VOCs = Volatile Organic Compounds  
SVOCs = Semi-Volatile Organic Compounds  
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

**Table 3-9**  
**Groundwater Elevation Summary**  
**Building 886**  
**Fort Monmouth, New Jersey**

Well ID	Elev. of Inner Casing Survey Mark	Date	Depth to Water	Ground-water Elev.
886MW01	14.04	02/12/03	6.51	7.53
886MW02	13.99	02/12/03	6.65	7.34
886MW03	14.79	02/12/03	6.38	8.41
886MW04	19.31	02/12/03	7.00	12.31
886MW05	19.38	02/12/03	11.03	8.35
886RW01	14.71	02/05/03	6.97	7.74
886RW02	15.01	02/05/03	7.11	7.90
886RW03	15.03	02/05/03	7.10	7.93
886RW04	14.89	02/05/03	6.95	7.94
886RW05	14.80	02/05/03	6.94	7.86
886RW06	15.25	02/05/03	6.89	8.36
886RW07	15.41	02/05/03	7.39	8.02
886RW08	14.91	02/05/03	6.81	8.10

Notes:

- 1) Elev.: Elevation in feet above mean sea level.
- 2) Depth to water: depth in feet from the inner casing survey mark.

Table 4-1  
Phase I RA Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-DUP (2003504)	886-DUP (2004603)	886-DUP (2006304)	886-DUP (2007303)	886-DUP (2008102)	886-DUP (2011403)	886-DUP (2013603)	886-PX1	886- PX10/NW	886- PX11/BOT	886- PX12/BOT	886- PX12A/BM	886- PX13/BM	886- PX14/SW
Date Collected			1/16/2002	1/25/2002	1/30/2002	2/4/2002	2/6/2002	2/26/2002	3/6/2002	1/16/2002	2/4/2002	2/4/2002	2/6/2002	2/26/2002	2/26/2002	3/6/2002
ANALYTE / Lab ID			2003505	2004603	2006304	2007303	2008102	2011403	2013603	2003501	2007301	2007302	2008101	2011401	2011402	2013601
<b>TPH</b>																
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	2713.56	ND	216.97	ND	272.31	ND	3063.66	ND	ND	ND	365.64

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D

Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-1  
Phase I RA Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886- PX15/BOT	886-PX2	886-PX3	886-PX4	886-PX5	886-PX6	886- PX7/SW	886- PX8/EW	886- PX9/BOT
Date Collected			3/6/2002	1/16/2002	1/16/2002	1/16/2002	1/25/2002	1/25/2002	1/30/2002	1/30/2002	1/30/2002
ANALYTE / Lab ID			2013602	2003502	2003503	2003504	2004601	2004602	2006301	2006302	2006303
<b>TPH</b>											
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase I RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	11-72"	12-72"	13-96"	14-48"	1-48"	15-72"	16-4'	17-72"	18-48"	18-96"	23-96"	25-2'	29-4'	30-8'
Date Collected			4/8/2002	4/8/2002	4/8/2002	4/8/2002	4/5/2002	4/5/2002	9/17/2002	4/8/2002	4/8/2002	4/8/2002	4/8/2002	9/17/2002	9/17/2002	9/17/2002
ANALYTE / Lab ID			2018811	2018810	2018806	2018803	2018503	2018507	2066502	2018804	2018807	2018808	2018812	2066503	2066504	2066505
<b>VOCs</b>																
1,1,2,2-Tetrachloroethane	34	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
1,2-Dichlorobenzene	5100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
1,3-Dichlorobenzene	5100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
1,4-Dichlorobenzene	570	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
Acetone	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
Benzene	3	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
Chloroform	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
Dibromochloromethane	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
Ethylbenzene	1000	mg/kg	2.1	0.1	3.6	1.7	ND	0.82	ND	0.78	ND	ND	ND	ND	ND	1.4
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	2.4	3.5	4	3.5	4.4	ND	ND	3.7	3.5	3.5	3.3	ND	ND	ND
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
Styrene	23	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
Tetrachloroethylene	4	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
Toluene	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND						
Xylenes (Total)	NLE	mg/kg	1.8	0.27	2.7	2.9	ND	ND	ND	ND	0.78	ND	ND	ND	ND	ND

Notes: PCBs = Poly Chlorinated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase I RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	31-6'	34-2'	40-4'	41-8'	4-72"	5-72"	6-96"	7-72"	8-24"	886-1 0-6"	886-1 24"	886-1 48"	886-1 52"	886-1 72"
Date Collected			9/17/2002	9/17/2002	9/17/2002	9/17/2002	4/5/2002	4/5/2002	4/5/2002	4/5/2002	4/5/2002	4/8/2002	3/9/2002	3/9/2002	3/9/2002	3/9/2002
ANALYTE / Lab ID			2066506	2066507	2066508	2066509	2018504	2018505	2018506	2018508	2018805	2014601	2014602	2014603	2014604	2014605
<b>VOCs</b>																
1,1,2,2-Tetrachloroethane	34	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	5100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	5100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	570	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Acetone	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Benzene	3	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Chloroform	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Dibromochloromethane	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Ethylbenzene	1000	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.42	ND	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	ND	ND	ND	ND	2.2	3.4	4.2	3.9	4.2	NA	NA	NA	NA	NA
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Styrene	23	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Tetrachloroethylene	4	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Toluene	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Xylenes (Total)	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	0.71	ND	NA	NA	NA	NA	NA
<b>TPH</b>																
Total Petroleum Hydrocarbons	10000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	173.42	181.82	2340.92	ND	ND

Notes: PCBs = Poly Chlorinated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-10-0-6"	886-10-120"	886-10-144"	886-10-24"	886-10-48"	886-10-72"	886-10-96"	886-11-0-6"	886-11-120"	886-11-144"	886-1-120"	886-11-24"	886-1-144"	886-11-48"	
Date Collected			3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/12/2002	3/12/2002	3/12/2002	3/14/2002	3/12/2002	3/14/2002	3/12/2002
ANALYTE / Lab ID			2014922	2014927	2014928	2014923	2014924	2014925	2014926	2015301	2015306	2015307	2015536	2015302	2015537	2015303	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	ND	168.01	1609.5	ND	250.68	ND	ND	3114.83	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-11-72"	886-11-96"	886-12-0-6"	886-12-120"	886-12-144"	886-12-24"	886-12-48"	886-12-72"	886-12-96"	886-13-0-6"	886-13-120"	886-13-144"	886-13-24"	886-13-48"	
Date Collected			3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002
ANALYTE / Lab ID			2015304	2015305	2015308	2015313	2015314	2015309	2015310	2015311	2015312	2015315	2015320	2015321	2015316	2015317	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	3914.27	11180.78	ND	533.58	ND	985.28	240.13	5661.55	2251.62	ND	11736.31	456.29	7868.76	7831.4	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-13-72"	886-13-96"	886-14-0-6"	886-14-120"	886-14-144"	886-14-24"	886-14-48"	886-14-72"	886-14-96"	886-15-0-6"	886-15-120"	886-15-144"	886-15-24"	886-15-48"	
Date Collected			3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002
ANALYTE / Lab ID			2015318	2015319	2015322	2015327	2015328	2015323	2015324	2015325	2015326	2015329	2015334	2015335	2015330	2015331	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	7693.89	8958.46	168.11	1121.51	2345.14	3384.97	9503.83	ND	4044.68	ND	5631.51	1838.33	ND	ND	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-15-72"	886-15-96"	886-16-0-6"	886-16-120"	886-16-144"	886-16-24"	886-16-48"	886-16-72"	886-16-96"	886-17-0-6"	886-17-120"	886-17-144"	886-17-24"	886-17-48"	
Date Collected			3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002
ANALYTE / Lab ID			2015332	2015333	2015336	2015341	2015342	2015337	2015338	2015339	2015340	2015343	2015348	2015349	2015344	2015345	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	7480.02	2445.14	ND	1635.23	ND	ND	9572.92	6180.03	1681.86	Nd	2106.94	3565.57	ND	11077.02	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-17-72"	886-17-96"	886-18-0-6"	886-18-120"	886-18-144"	886-18-24"	886-18-48"	886-18-72"	886-18-96"	886-19-0-6"	886-19-120"	886-19-144"	886-19-24"	886-19-48"	
Date Collected			3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002	3/12/2002
ANALYTE / Lab ID			2015346	2015347	2015350	2015355	2015356	2015351	2015352	2015353	2015354	2015357	2015362	2015363	2015358	2015359	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	7001.18	5869.56	ND	1957.54	3814.19	221.52	5888.09	3106.03	5232.79	ND	244.95	945.1	ND	230.17	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-19-72"	886-19-96"	886-2 0-6"	886-2 24"	886-2 48"	886-2 72"	886-20-0-6"	886-20-120"	886-20-144"	886-20-24"	886-20-48"	886-20-72"	886-20-96"	886-21-0-6"	
Date Collected			3/12/2002	3/12/2002	3/9/2002	3/9/2002	3/9/2002	3/9/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002
ANALYTE / Lab ID			2015360	2015361	2014606	2014607	2014608	2014610	2015501	2015506	2015507	2015502	2015503	2015504	2015505	2015504	2015505
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	230.59

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-21-120"	886-21-144"	886-2-120"	886-21-24"	886-2-144"	886-21-48"	886-21-72"	886-21-96"	886-22-0-6"	886-22-120"	886-22-144"	886-22-24"	886-22-48"	886-22-72"	
Date Collected			3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002
ANALYTE / Lab ID			2015513	2015514	2015538	2015509	2015539	2015510	2015511	2015512	2015515	2015520	2015521	2015516	2015517	2015518	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-22-96"	886-23-0-6"	886-23-120"	886-23-144"	886-23-24"	886-23-48"	886-23-72"	886-23-96"	886-24-0-6"	886-24-120"	886-24-144"	886-24-24"	886-24-48"	886-24-72"	
Date Collected			3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002	3/14/2002
ANALYTE / Lab ID			2015519	2015522	2015527	2015528	2015523	2015524	2015525	2015526	2015529	2015534	2015535	2015530	2015531	2015532	2015531
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	1430.97	ND	230.71	ND	ND	4499.73	ND	ND	871.84	ND	386.52	15152.37	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-24-96"	886-25-0-6"	886-25-120"	886-25-144"	886-25-24"	886-25-48"	886-25-72"	886-25-96"	886-26-0-6"	886-26-120"	886-26-144"	886-26-24"	886-26-48"	886-26-72"
Date Collected			3/14/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002
ANALYTE / Lab ID			2015533	2019701	2019706	2019707	2019702	2019703	2019704	2019705	2019708	2019713	2019714	2019709	2019710	2019711
<b>TPH</b>																
Total Petroleum Hydrocarbons	10000	mg/kg	488.06	284.15	ND	ND	1108.77	308.33	ND	ND	ND	ND	ND	ND	ND	ND

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-26-96"	886-27-0-6"	886-27-120"	886-27-144"	886-27-24"	886-27-48"	886-27-72"	886-27-96"	886-28-0-6"	886-28-120"	886-28-144"	886-28-24"	886-28-48"	886-28-72"	
Date Collected			4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002	4/12/2002
ANALYTE / Lab ID			2019712	2019715	2019720	2019721	2019716	2019717	2019718	2019719	2019722	2019727	2019728	2019723	2019724	2019725	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-28-96"	886-29-0-6"	886-29-120"	886-29-144"	886-29-24"	886-29-48"	886-29-72"	886-29-96"	886-3 0-6"	886-3 24"	886-3 48"	886-3 72"	886-30-0-6"	886-30-120"	
Date Collected			4/12/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	3/9/2002	3/9/2002	3/9/2002	3/9/2002	4/18/2002	4/18/2002
ANALYTE / Lab ID			2019726	2021101	2021106	2021107	2021102	2021103	2021104	2021105	2014611	2014612	2014613	2014614	2021108	2021113	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	206.26	466.97	ND	200.85	9425.59	4969.68	11104.81	ND	ND	ND	ND	217.48	433.42	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-30-144"	886-30-24"	886-30-48"	886-30-72"	886-30-96"	886-31-0-6"	886-31-120"	886-31-144"	886-3-120"	886-31-24"	886-3-144"	886-31-48"	886-31-72"	886-31-96"	
Date Collected			4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	3/14/2002	4/18/2002	3/14/2002	4/18/2002	4/18/2002	4/18/2002
ANALYTE / Lab ID			2021114	2021109	2021110	2021111	2021112	2021115	2021120	2021121	2015540	2021116	2015541	2021117	2021118	2021119	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	4574.78	8897.25	ND	ND	ND	729.69	ND	ND	ND	4364.38	11365.22	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-32-0-6"	886-32-120"	886-32-144"	886-32-24"	886-32-48"	886-32-72"	886-32-96"	886-33-0-6"	886-33-120"	886-33-144"	886-33-24"	886-33-48"	886-33-72"	886-33-96"	
Date Collected			4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/18/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002
ANALYTE / Lab ID			2021122	2021127	2021128	2021123	2021124	2021125	2021126	2021301	2021306	2021307	2021302	2021303	2021304	2021305	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	503.96	ND	ND	ND	ND	ND	305.54	ND	ND	ND	ND	ND	294.98	266.24	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-34-0-6"	886-34-120"	886-34-144"	886-34-24"	886-34-48"	886-34-72"	886-34-96"	886-35-0-6"	886-35-120"	886-35-144"	886-35-24"	886-35-48"	886-35-72"	886-35-96"	
Date Collected			4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002
ANALYTE / Lab ID			2021308	2021313	2021314	2021309	2021310	2021311	2021312	2021315	2021320	2021321	2021316	2021317	2021318	2021319	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	2155.13	ND	ND	ND	181.7	ND	249.69	173.7	ND	ND	ND	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-36-0-6"	886-36-10'	886-36-12'	886-36-2'	886-36-4'	886-36-6'	886-36-8'	886-37 0-6"	886-37 10'	886-37 12'	886-37 2'	886-37 4'	886-37 6'	886-37 8'	
Date Collected			5/10/2002	5/10/2002	5/10/2002	5/10/2002	5/10/2002	5/10/2002	5/10/2002	5/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002
ANALYTE / Lab ID			2027001	2027006	2027007	2027002	2027003	2027004	2027005	2035929	2035934	2035935	2035930	2035931	2035932	2035933	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-38 0-6"	886-38 10'	886-38 12'	886-38 2'	886-38 4'	886-38 6'	886-38 8'	886-39 0-6"	886-39 10'	886-39 12'	886-39 2'	886-39 4'	886-39 6'	886-39 8'	
Date Collected			6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002
ANALYTE / Lab ID			2035922	2035927	2035928	2035923	2035924	2035925	2035926	2035915	2035920	2035921	2035916	2035917	2035918	2035919	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-4 0-6"	886-4 120"	886-4 144"	886-4 24"	886-4 48"	886-4 72"	886-4 96"	886-40 0-6"	886-40 10'	886-40 12'	886-40 2'	886-40 4'	886-40 6'	886-40 8'	
Date Collected			3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002
ANALYTE / Lab ID			2014701	2014706	2014707	2014702	2014703	2014704	2014705	2035908	2035913	2035914	2035909	2035910	2035911	2035912	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	207.79	3217.75	ND	205.98	638.61	5799.9	2084.86	ND	ND	ND	ND	6416.01	5317.12	677.7	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-41 0-6"	886-41 10'	886-41 12'	886-41 2'	886-41 4'	886-41 6'	886-41 8'	886-42 0-6"	886-42 10'	886-42 12'	886-42 2'	886-42 4'	886-42 6'	886-42 8'	
Date Collected			6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/10/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002
ANALYTE / Lab ID			2035901	2035906	2035907	2035902	2035903	2035904	2035905	2037915	2037920	2037921	2037916	2037917	2037918	2037919	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	14258.29	ND	309.9	ND	732.37	2080.96	ND	ND	ND	ND	ND	ND	ND	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-43 0-6"	886-43 10'	886-43 12'	886-43 2'	886-43 4'	886-43 6'	886-43 8'	886-44 0-6"	886-44 10'	886-44 12'	886-44 2'	886-44 4'	886-44 6'	886-44 8'	
Date Collected			6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002
ANALYTE / Lab ID			2037922	2037927	2037928	2037923	2037924	2037925	2037926	2037929	2037934	2037935	2037930	2037931	2037932	2037933	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-45 0-6"	886-45 12'	886-45 2'	886-45 4'	886-45 6'	886-45 8'	886-46 0-6"	886-46 10'	886-46 12'	886-46 2'	886-46 4'	886-46 6'	886-46 8'	
Date Collected			6/19/2002	6/19/2002	6/19/2002	6/19/2002	6/19/2002	6/19/2002	6/19/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002
ANALYTE / Lab ID			2038101	2038107	2038102	2038103	2038104	2038105	2037908	2037913	2037914	2037909	2037910	2037911	2037912	2037901
<b>TPH</b>																
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-47 10'	886-47 12'	886-47 2'	886-47 4'	886-47 6'	886-47 8'	886-48 0-6"	886-48 10'	886-48 12'	886-48 2'	886-48 4'	886-48 6'	886-48 8'	886-5 0-6"
Date Collected			6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/26/2002	6/26/2002	6/26/2002	6/26/2002	6/26/2002	6/26/2002	6/26/2002
ANALYTE / Lab ID			2037906	2037907	2037902	2037903	2037904	2037905	2039901	2039906	2039907	2039902	2039903	2039904	2039905	2014708
<b>TPH</b>																
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	265.17

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-5 120"	886-5 144"	886-5 24"	886-5 48"	886-5 72"	886-5 96"	886-6 0-6"	886-6 120"	886-6 144"	886-6 24"	886-6 48"	886-6 72"	886-6 96"	886-7 0-6"	
Date Collected			3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/10/2002	3/11/2002
ANALYTE / Lab ID			2014713	2014714	2014709	2014710	2014711	2014712	2014715	2014720	2014721	2014716	2014717	2014718	2014719	2014901	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	2828.97	188	312.22	ND	6887.5	4352.24	486.57	4650.82	ND	2339.98	323.87	2717.84	7466.39	363.27	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-7 24"	886-7 48"	886-7 72"	886-7-120"	886-7-144"	886-7-96"	886-8-0-6"	886-8-120"	886-8-144"	886-8-24"	886-8-48"	886-8-72"	886-8-96"	886-9-0-6"	
Date Collected			3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002
ANALYTE / Lab ID			2014902	2014903	2014904	2014906	2014907	2014905	2014908	2014913	2014914	2014909	2014910	2014911	2014912	2014915	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	5621.19	4551.69	6191.42	ND	ND	185.56	446.75	12818.89	ND	7226.44	5738.77	13409.44	12440.73	210.65	

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-9-120"	886-9-144"	886-9-24"	886-9-48"	886-9-72"	886-9-96"	9-72"	Dup (2014609)	Dup (2014722)	Dup (2018502)	Dup (2018802)	Dup (2019729)	Dup (2021129)	Dup (2021322)	
Date Collected			3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	3/11/2002	4/8/2002	3/9/2002	3/10/2002	4/5/2002	4/8/2002	4/12/2002	4/18/2002	4/19/2002
ANALYTE / Lab ID			2014920	2014921	2014916	2014917	2014918	2014919	2018809	2014609	2014722	2018502	2018802	2019729	2021129	2021322	
<b>VOCs</b>																	
1,1,2,2-Tetrachloroethane	34	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
1,2-Dichlorobenzene	5100	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
1,3-Dichlorobenzene	5100	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
1,4-Dichlorobenzene	570	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
Acetone	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
Benzene	3	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
Chloroform	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
Dibromochloromethane	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
Ethylbenzene	1000	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	2.8	NA	NA	NA	
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	NA	NA	NA	NA	NA	NA	3	NA	NA	2.2	3.6	NA	NA	NA	
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
Styrene	23	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
Tetrachloroethylene	4	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
Toluene	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	
Xylenes (Total)	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	2.9	NA	NA	NA	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	176.5	ND	299.3	872.18	9693.22	11024.72	NA	ND	2291.5	NA	NA	ND	ND	212.64	

Notes: PCBs = Poly Chlorinated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-2  
Phase 1 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	Dup 1 (2015364)	Dup 1 (2015542)	Dup 2 (2015365)	Dup 2 (2015543)	Dup 3 (2015544)	Dup. 3 (2015366)	FD-4' (2066510)
Date Collected			3/12/2002	3/14/2002	3/12/2002	3/14/2002	3/14/2002	3/12/2002	9/17/2002
ANALYTE / Lab ID			2015364	2015542	2015365	2015543	2015544	2015366	2066510
<b>VOCs</b>									
1,1,2,2-Tetrachloroethane	34	mg/kg	NA	NA	NA	NA	NA	NA	ND
1,2-Dichlorobenzene	5100	mg/kg	NA	NA	NA	NA	NA	NA	ND
1,3-Dichlorobenzene	5100	mg/kg	NA	NA	NA	NA	NA	NA	ND
1,4-Dichlorobenzene	570	mg/kg	NA	NA	NA	NA	NA	NA	ND
Acetone	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND
Benzene	3	mg/kg	NA	NA	NA	NA	NA	NA	ND
Chloroform	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND
Dibromochloromethane	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND
Ethylbenzene	1000	mg/kg	NA	NA	NA	NA	NA	NA	ND
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	NA	NA	NA	NA	NA	NA	ND
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND
Styrene	23	mg/kg	NA	NA	NA	NA	NA	NA	ND
Tetrachloroethylene	4	mg/kg	NA	NA	NA	NA	NA	NA	ND
Toluene	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND
Xylenes (Total)	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND
<b>TPH</b>									
Total Petroleum Hydrocarbons	10000	mg/kg	5146.27	ND	9669.3	ND	652.01	2380.19	NA

Notes: PCBs = Poly Chlorinated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-3  
Phase 1 RI Soil Sampling Exceedence Summary  
886  
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units
<b>TPH</b>							
Total Petroleum Hydrocarbons	10000						
		886-11-96"				<b>Maximum Result: 11180.78</b>	mg/kg
				3/12/2002	2015305	11180.78	mg/kg
		886-13-120"				<b>Maximum Result: 11736.31</b>	mg/kg
				3/12/2002	2015320	11736.31	mg/kg
		886-17-48"				<b>Maximum Result: 11077.02</b>	mg/kg
				3/12/2002	2015345	11077.02	mg/kg
		886-24-72"				<b>Maximum Result: 15152.37</b>	mg/kg
				3/14/2002	2015532	15152.37	mg/kg
		886-29-96"				<b>Maximum Result: 11104.81</b>	mg/kg
				4/18/2002	2021105	11104.81	mg/kg
		886-31-96"				<b>Maximum Result: 11365.22</b>	mg/kg
				4/18/2002	2021119	11365.22	mg/kg
		886-41 10'				<b>Maximum Result: 14258.29</b>	mg/kg
				6/10/2002	2035906	14258.29	mg/kg
		886-8-120"				<b>Maximum Result: 12818.89</b>	mg/kg
				3/11/2002	2014913	12818.89	mg/kg
		886-8-72"				<b>Maximum Result: 13409.44</b>	mg/kg
				3/11/2002	2014911	13409.44	mg/kg
		886-8-96"				<b>Maximum Result: 12440.73</b>	mg/kg
				3/11/2002	2014912	12440.73	mg/kg
		886-9-96"				<b>Maximum Result: 11024.72</b>	mg/kg
				3/11/2002	2014919	11024.72	mg/kg

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons; MDL = Method Detection Limit;  
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;  
Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-4  
Phase 2 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-41-10	886-41-10'	886-41-12	886-41-6	886-41-7.5	886-41-8'	886-49-7.5	886-50-7.5	886-51-7.5	886-52-7.5	886-53-7.5	886-54-10.5	886-54-8.5	886-55-8.5	
Date Collected			11/26/2002	11/14/2002	11/26/2002	11/26/2002	11/26/2002	11/14/2002	11/7/2002	11/7/2002	11/7/2002	11/7/2002	11/7/2002	11/7/2002	11/8/2002	11/8/2002	11/8/2002
ANALYTE / Lab ID			2084904	2081203	2084905	2084902	2084903	2081202	2079602	2079603	2079602	2079605	2079606	2079605	2079606	2079804	2079803
<b>VOCs</b>																	
1,1,2,2-Tetrachloroethane	34	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
1,2-Dichlorobenzene	5100	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
1,3-Dichlorobenzene	5100	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
1,4-Dichlorobenzene	570	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
Acetone	NLE	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	3.4	NA	NA	
Benzene	3	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
Chloroform	NLE	mg/kg	NA	2.1	NA	NA	1.8	NA	NA	NA	3.4	NA	NA	ND	NA	NA	
Dibromochloromethane	NLE	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
Ethylbenzene	1000	mg/kg	NA	0.32	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
Styrene	23	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
Tetrachloroethylene	4	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
Toluene	NLE	mg/kg	NA	ND	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
Xylenes (Total)	NLE	mg/kg	NA	0.14	NA	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	4247.64	ND	ND	2172.44	2483.9	ND	ND	5430.58	ND	1187.48	6024.4	3967.85	ND	

Notes: PCBs = Poly Chlorinated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-4  
Phase 2 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-56-12	886-56-6	886-56-8	886-57-10	886-57-12.5	886-57-4	886-57-6	886-57-8	886-58-10	886-58-12	886-58-6	886-58-8	886-59-10	886-59-12	
Date Collected			11/25/2002	11/25/2002	11/25/2002	11/25/2002	11/25/2002	11/25/2002	11/25/2002	11/25/2002	11/25/2002	11/26/2002	11/26/2002	11/26/2002	11/26/2002	11/26/2002	11/26/2002
ANALYTE / Lab ID			2084404	2084402	2084403	2084408	2084409	2084405	2084406	2084407	2084908	2084909	2084906	2084907	2084912	2084913	
<b>VOCs</b>																	
1,1,2,2-Tetrachloroethane	34	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
1,2-Dichlorobenzene	5100	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
1,3-Dichlorobenzene	5100	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
1,4-Dichlorobenzene	570	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
Acetone	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
Benzene	3	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
Chloroform	NLE	mg/kg	NA	NA	NA	NA	NA	NA	2.3	1.9	2.1	NA	NA	NA	NA	NA	
Dibromochloromethane	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
Ethylbenzene	1000	mg/kg	NA	NA	NA	NA	NA	NA	3.4	3.1	ND	NA	NA	NA	NA	NA	
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
Styrene	23	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
Tetrachloroethylene	4	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
Toluene	NLE	mg/kg	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	NA	
Xylenes (Total)	NLE	mg/kg	NA	NA	NA	NA	NA	NA	3.6	3.4	ND	NA	NA	NA	NA	NA	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND	ND	ND	22317.07	14885.1	5413.97	ND	ND	3776.99	ND	ND	

Notes: PCBs = Poly Chlorinated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-4  
Phase 2 RI Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-59-6	886-59-8	886-Dup (2079802)
Date Collected			11/26/2002	11/26/2002	11/8/2002
ANALYTE / Lab ID			2084910	2084911	2079802
<b>TPH</b>					
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	3914.23

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-5  
Phase 2 RI Soil Sampling Exceedence Summary  
886  
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units
<b>TPH</b>							
Total Petroleum Hydrocarbons	10000						
		886-57-6				<b>Maximum Result: 22317.07</b>	mg/kg
				11/25/2002	2084406	22317.07	mg/kg
		886-57-8				<b>Maximum Result: 14885.1</b>	mg/kg
				11/25/2002	2084407	14885.1	mg/kg

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons; MDL = Method Detection Limit;  
 ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-6  
Phase 2 RA Post-Ex Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-DUP	886-DUP	886-Dup	886-Dup	886-Dup	886-Dup	886-Dup	886-	886-	886-	886-	886-	886-	886-
			(2077906)	(2079105)	(2080005)	(2086503)	(3002505)	(3005705)	(3007108)	PX14A/NW	PX15A/WW	PX16/SW	PX17/BOT	PX18/BOT	PX19/WW	PX20/NW
Date Collected			11/1/2002	11/6/2002	11/11/2002	12/3/2002	1/15/2003	2/3/2003	2/14/2003	11/1/2002	11/1/2002	11/1/2002	11/1/2002	11/1/2002	11/6/2002	11/6/2002
ANALYTE / Lab ID			2077906	2079105	2080005	2086503	3002505	3005705	3007108	2077901	2077902	2077903	2077904	2077905	2079101	2079102
<b>VOCs</b>																
1,1,2,2-Tetrachloroethane	34	mg/kg	0.027	0.44	NA	ND	NA	NA	NA	ND	ND	0.032	ND	0.035	ND	ND
1,2-Dichlorobenzene	5100	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND						
1,3-Dichlorobenzene	5100	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND	ND	0.017	ND	0.033	ND	ND
1,4-Dichlorobenzene	570	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND						
Acetone	NLE	mg/kg	0.75	ND	NA	ND	NA	NA	NA	0.92	0.94	0.81	0.86	0.75	ND	ND
Benzene	3	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND						
Chloroform	NLE	mg/kg	ND	ND	NA	1.7	NA	NA	NA	ND						
Dibromochloromethane	NLE	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND	0.072	ND	ND	0.031	ND	ND
Ethylbenzene	1000	mg/kg	0.051	ND	NA	1.3	NA	NA	NA	0.06	0.39	ND	0.024	0.056	ND	ND
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND						
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND						
Styrene	23	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND	ND	0.011	ND	ND	ND	ND
Tetrachloroethylene	4	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND						
Toluene	NLE	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND	ND	ND	ND	0.016	ND	ND
Xylenes (Total)	NLE	mg/kg	0.261	ND	NA	1.4	NA	NA	NA	0.257	0.57	ND	0.258	0.247	ND	ND
<b>TPH</b>																
Total Petroleum Hydrocarbons	10000	mg/kg	6475.8	17048.12	1446.5	5482.31	6842.01	1108.84	1014.14	11883.9	17095.89	4761.43	6128.37	7320.07	24876.54	16602.2

Notes: PCBs = Poly Chlorinated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-6  
Phase 2 RA Post-Ex Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-PX21/EW	886-PX22/BOT	886-PX23 W	886-PX24W	886-PX25 E	886-PX26 E	886-PX27 B	886-PX28 B	886-PX29 W	886-PX30 W	886-PX31 W	886-PX32 B	886-PX33 B	886-PX34 B	
Date Collected			11/6/2002	11/6/2002	11/7/2002	11/7/2002	11/7/2002	11/7/2002	11/7/2002	11/7/2002	11/7/2002	11/8/2002	11/8/2002	11/8/2002	11/8/2002	11/8/2002	11/8/2002
ANALYTE / Lab ID			2079103	2079104	2079401	2079402	2079403	2079404	2079405	2079406	2079901	2079902	2079903	2079904	2079905	2079906	
<b>VOCs</b>																	
1,1,2,2-Tetrachloroethane	34	mg/kg	ND	ND	ND	0.33	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
1,2-Dichlorobenzene	5100	mg/kg	0.41	ND	ND	0.31	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
1,3-Dichlorobenzene	5100	mg/kg	0.33	ND	ND	ND	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
1,4-Dichlorobenzene	570	mg/kg	0.33	ND	ND	ND	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
Acetone	NLE	mg/kg	ND	1.6	1.7	ND	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
Benzene	3	mg/kg	ND	ND	ND	ND	NA	ND	NA	NA	ND	0.086	NA	NA	NA	NA	
Chloroform	NLE	mg/kg	ND	ND	ND	ND	NA	ND	NA	NA	1.7	1.5	NA	NA	NA	NA	
Dibromochloromethane	NLE	mg/kg	ND	ND	ND	ND	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
Ethylbenzene	1000	mg/kg	ND	ND	0.15	0.26	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	ND	ND	ND	ND	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	ND	ND	ND	ND	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
Styrene	23	mg/kg	ND	ND	ND	ND	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
Tetrachloroethylene	4	mg/kg	ND	ND	ND	ND	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
Toluene	NLE	mg/kg	ND	ND	ND	ND	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	
Xylenes (Total)	NLE	mg/kg	ND	ND	ND	ND	NA	ND	NA	NA	ND	0.23	NA	NA	NA	NA	
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	5102.5	ND	10284.4	31639.09	6348.55	11162.05	ND	ND	13469.45	12009.29	ND	ND	ND	ND	

Notes: PCBs = Poly Chlorinated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-6  
Phase 2 RA Post-Ex Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-PX35 S	886-PX36 N	886-PX37 E	886-PX38 E	886-PX39 B	886-PX40 B	886-PX41 B	886-PX42 B	886-PX43 S	886-PX44 E	886-PX45 E	886-PX46 B	886-PX47 N	886-PX48 E	
Date Collected			11/8/2002	11/11/2002	11/11/2002	11/11/2002	11/11/2002	11/13/2002	11/13/2002	11/13/2002	11/13/2002	11/13/2002	11/13/2002	11/13/2002	11/21/2002	11/21/2002	11/21/2002
ANALYTE / Lab ID			2079908	2080001	2080002	2080003	2080004	2080701	2080702	2080703	2080704	2080705	2080706	2083101	2083102	2083103	
<b>VOCs</b>																	
1,1,2,2-Tetrachloroethane	34	mg/kg	NA	ND	NA	ND	NA										
1,2-Dichlorobenzene	5100	mg/kg	NA	ND	NA	ND	NA										
1,3-Dichlorobenzene	5100	mg/kg	NA	ND	NA	ND	NA										
1,4-Dichlorobenzene	570	mg/kg	NA	ND	NA	ND	NA										
Acetone	NLE	mg/kg	NA	ND	NA	0.35	NA										
Benzene	3	mg/kg	NA	ND	NA	ND	NA										
Chloroform	NLE	mg/kg	NA	1.6	NA	1.4	NA										
Dibromochloromethane	NLE	mg/kg	NA	ND	NA	ND	NA										
Ethylbenzene	1000	mg/kg	NA	0.32	NA	ND	NA										
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	NA	ND	NA	ND	NA										
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	NA	ND	NA	ND	NA										
Styrene	23	mg/kg	NA	ND	NA	ND	NA										
Tetrachloroethylene	4	mg/kg	NA	ND	NA	ND	NA										
Toluene	NLE	mg/kg	NA	ND	NA	ND	NA										
Xylenes (Total)	NLE	mg/kg	NA	1	NA	ND	NA										
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	ND	6435.11	814.68	430.77	ND	569.08	4227.31	7186.7							

Notes: PCBs = Poly Chlorinated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D

Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-6  
Phase 2 RA Post-Ex Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-PX49 W	886-PX50 N	886-PX51 N	886-PX52 N	886-PX53 N	886-PX54 W	886-PX55 B	886-PX56 N	886-PX57 W	886-PX58 S	886-PX59 B	886-PX60 W	886-PX61 S	886-PX62 E	
Date Collected			11/21/2002	12/3/2002	12/3/2002	1/15/2003	1/15/2003	1/15/2003	1/15/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/14/2003	2/14/2003	2/14/2003
ANALYTE / Lab ID			2083104	2086501	2086502	3002501	3002502	3002503	3002504	3005701	3005702	3005703	3005704	3007101	3007102	3007103	
<b>VOCs</b>																	
1,1,2,2-Tetrachloroethane	34	mg/kg	ND	ND	ND	NA											
1,2-Dichlorobenzene	5100	mg/kg	ND	ND	ND	NA											
1,3-Dichlorobenzene	5100	mg/kg	ND	ND	ND	NA											
1,4-Dichlorobenzene	570	mg/kg	ND	ND	ND	NA											
Acetone	NLE	mg/kg	ND	ND	ND	NA											
Benzene	3	mg/kg	ND	ND	ND	NA											
Chloroform	NLE	mg/kg	1.4	1.8	1.7	NA											
Dibromochloromethane	NLE	mg/kg	ND	ND	ND	NA											
Ethylbenzene	1000	mg/kg	0.16	ND	ND	NA											
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	ND	ND	ND	NA											
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	ND	ND	ND	NA											
Styrene	23	mg/kg	ND	ND	ND	NA											
Tetrachloroethylene	4	mg/kg	ND	ND	ND	NA											
Toluene	NLE	mg/kg	ND	ND	ND	NA											
Xylenes (Total)	NLE	mg/kg	0.25	ND	ND	NA											
<b>TPH</b>																	
Total Petroleum Hydrocarbons	10000	mg/kg	19065.98	2910.5	2088.35	5930.63	230.57	776.88	ND	ND	540.71	370.97	ND	193.33	1770.76	4927.25	

Notes: PCBs = Poly Chlorinated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-6  
Phase 2 RA Post-Ex Soil Sampling Results  
886  
Fort Monmouth, New Jersey

Field Sample ID	Criterion	Units	886-PX63 E	886-PX64 N	886-PX65 B	886-PX66 B
Date Collected			2/14/2003	2/14/2003	2/14/2003	2/14/2003
ANALYTE / Lab ID			3007104	3007105	3007106	3007107
<b>TPH</b>						
Total Petroleum Hydrocarbons	10000	mg/kg	ND	ND	ND	ND

Notes: PCBs = Poly Chloronated Biphenyls; MDL = Method Detection Limit; TPH = Total Petroleum Hydrocarbons;  
 ND = Not Detected; mg/kg = milligrams per kilogram, equivalent to parts per million (ppm); NA = Not Analyzed/Not Applicable;  
 Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-7  
Phase2 RA Post-Ex Soil Sampling Exceedence Summary  
886  
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units
<b>TPH</b>							
Total Petroleum Hydrocarbons	10000						
		886-DUP (2079105)				Maximum Result: 17048.12	mg/kg
				11/6/2002	2079105	17048.12	mg/kg
		886-PX14A/NW				Maximum Result: 11883.9	mg/kg
				11/1/2002	2077901	11883.9	mg/kg
		886-PX15A/WW				Maximum Result: 17095.89	mg/kg
				11/1/2002	2077902	17095.89	mg/kg
		886-PX19/WW				Maximum Result: 24876.54	mg/kg
				11/6/2002	2079101	24876.54	mg/kg
		886-PX20/NW				Maximum Result: 16602.2	mg/kg
				11/6/2002	2079102	16602.2	mg/kg
		886-PX23 W				Maximum Result: 10284.4	mg/kg
				11/7/2002	2079401	10284.4	mg/kg
		886-PX24W				Maximum Result: 31639.09	mg/kg
				11/7/2002	2079402	31639.09	mg/kg
		886-PX26 E				Maximum Result: 11162.05	mg/kg
				11/7/2002	2079404	11162.05	mg/kg
		886-PX29 W				Maximum Result: 13469.45	mg/kg
				11/8/2002	2079901	13469.45	mg/kg
		886-PX30 W				Maximum Result: 12009.29	mg/kg
				11/8/2002	2079902	12009.29	mg/kg
		886-PX49 W				Maximum Result: 19065.98	mg/kg
				11/21/2002	2083104	19065.98	mg/kg

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons; MDL = Method Detection Limit; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Criterion = RDCSCC: NJDEP Residential Direct Contact Soil Cleanup Criteria per N.J.A.C. 7:26D  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-8  
Groundwater Monitoring Well Sampling Results  
886  
Fort Monmouth, New Jersey

WELL ID	Criterion	Units	886MW01	886MW02	886MW03	886MW04	886MW05	886RW01	886RW02	886RW03	886RW04	886RW05	886RW06	886RW07	886RW08	Dup (3006103)	
			2/12/2003	2/12/2003	2/12/2003	2/12/2003	2/12/2003	2/5/2003	2/5/2003	2/5/2003	2/5/2003	2/5/2003	2/12/2003	2/12/2003	2/5/2003	2/5/2003	
ANALYTE / Lab ID			3006607	3006608	3006606	3006610	3006609	3006108	3006107	3006104	3006105	3006106	3006605	3006604	3006109	3006103	
<b>VOCs</b>																	
1,1,2,2-Tetrachloroethane	*	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichlorobenzene		600	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,3-Dichlorobenzene		600	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene		75	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Acetone		700	ug/L	4.18	3.33	6.75	ND	ND	40.9	ND	3.08	1.5	3.86	2.05	6.52	42.88	2.96
Benzene		1	ug/L	0.59	ND	ND	ND	ND	2.16	0.77	0.67	1.23	ND	1.17	ND	1.09	
Chloroform		6	ug/L	ND	ND	ND	ND	ND	ND	0.47	ND	ND	ND	ND	ND	ND	
Dibromochloromethane		10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene		700	ug/L	ND	ND	ND	3.56	ND	2.13	ND	0.69	2.32	ND	6.59	ND	2.16	
Methyl ethyl ketone (2-Butanone)		300	ug/L	0.93	ND	0.77	ND	ND	30039.7	ND	ND	1.16	ND	ND	29510.7	ND	
Methyl tertiary butyl ether (MTBE)	*	70	ug/L	ND	ND	2.26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Styrene		100	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Tetrachloroethylene		1	ug/L	0.64	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene		1000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.45	ND	ND	
Xylenes (Total)	*	1000	ug/L	ND	ND	ND	ND	ND	2.12	ND	ND	2.26	ND	5.23	ND	2.11	
<b>TPH</b>																	
Total Petroleum Hydrocarbons		NLE	mg/L	2.1	0.8	13.3	1.7	ND	1.3	1.4	1.5	1.5	2	1.7	4	9.4	2
<b>SVOCs</b>																	
1,2-Dichlorobenzene		600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,3-Dichlorobenzene		600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene		75	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Methylnaphthalene	*	100	ug/l	1.72	ND	17.64	28.73	ND	3.37	37.63	75.88	31.36	60.8	40.39	59.97	ND	50.3
Acenaphthene		400	ug/l	2.77	ND	8.92	7.64	ND	1.8	1.89	2.82	2.45	5.64	2.27	3.51	3.53	4.6
Acenaphthylene	*	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.08
Bis(2-ethylhexyl)phthalate		30	ug/l	2.04	1.66	ND	1.9	ND	4.7	2.07	ND	ND	1.3	ND	2.49	2.8	1.28
Dibenzofuran	*	100	ug/l	2.71	ND	ND	ND	ND	ND	1.96	2.08	4.92	ND	ND	ND	4.8	
Diethylphthalate		5000	ug/l	ND	ND	ND	1.6	1.14	ND	ND	ND	ND	ND	1.15	ND	ND	
Fluorene		300	ug/l	2.9	ND	11.75	8.63	ND	1.73	1.96	3.11	3.11	6.37	2.84	3.97	3.17	5.64
Naphthalene	*	300	ug/l	ND	ND	4	21.33	ND	ND	5.66	7.44	13.36	15.94	18.16	ND	12.08	
N-Nitrosodiphenylamine		20	ug/l	ND	ND	38.99	ND	ND	1.89	2.49	1.05	ND	2.66	ND	ND	ND	
Phenanthrene	*	100	ug/l	1.83	ND	24.07	8.36	ND	ND	1	2.08	2.21	4.7	1.8	4.29	1.06	4.89
Pyrene		200	ug/l	ND	ND	1.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
<b>Pest/PCBs</b>																	
4,4'-DDE		.1	ug/l	ND	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	
delta-BHC	*	100	ug/l	ND	ND	ND	ND	ND	0.03	0.1	0.59	0.02	0.07	ND	ND	0.04	
gamma-BHC		.2	ug/l	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	
<b>Metals</b>																	
Aluminum		200	ug/l	212	240	1250	288	458	34	15.6	59.9	49	31.1	269	151	35.6	50
Arsenic		8	ug/l	5.91	12.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Barium		2000	ug/l	15.3	107	69.3	12	33.3	35.9	42.2	42.7	42	24.5	37.2	34.1	32	47.9
Beryllium		20	ug/l	ND	ND	0.597	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium		4	ug/l	1.55	2.38	ND	0.598	ND	ND	0.581	0.662	ND	0.609	ND	ND	0.6	
Calcium		NLE	ug/l	15000	29600	18600	5650	6600	15300	18600	23500	18600	16800	12300	10600	46400	16900
Chromium III		NLE	ug/l	1.78	2.92	2.26	1.79	1.88	6.64	2.53	1.03	1.58	0.63	1.17	1.56	5.08	1.3
Cobalt	*	100	ug/l	ND	16.4	10	0.886	4.64	5.42	7.81	7.4	3	0.578	17.4	10.4	20.5	ND
Copper		1000	ug/l	ND	ND	3.54	5.49	3.02	2.53	ND	ND	5.37	ND	2.81	4.17	ND	3
Iron		300	ug/l	67300	97500	6070	15500	307	6800	14800	19000	1930	22300	14200	14100	3590	21800

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons;

PCBs = polychlorinated biphenyls; MDL = Method Detection Limit; ND = Not Detected;

ug/L = micrograms per liter, equivalent to parts per billion (ppb); mg/kg = milligrams per kilogram, equivalent to parts per million; NA = Not Analyzed/Not Applicable;

Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion;

Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Tuesday, January 10, 2006

Sample Group # 0  
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Table 4-8  
Groundwater Monitoring Well Sampling Results  
886  
Fort Monmouth, New Jersey

WELL ID	Criterion	Units	886MW01	886MW02	886MW03	886MW04	886MW05	886RW01	886RW02	886RW03	886RW04	886RW05	886RW06	886RW07	886RW08	Dup (3006103)
Date Collected			2/12/2003	2/12/2003	2/12/2003	2/12/2003	2/12/2003	2/5/2003	2/5/2003	2/5/2003	2/5/2003	2/5/2003	2/12/2003	2/12/2003	2/5/2003	2/5/2003
ANALYTE / Lab ID			3006607	3006608	3006606	3006610	3006609	3006108	3006107	3006104	3006105	3006106	3006605	3006604	3006604	3006109
<b>Metals</b>																
Lead	10	ug/l	1.18	2.8	ND	1.23	ND	ND	ND	ND	ND	ND	1.23	1.25	ND	1
Magnesium	NLE	ug/l	7460	11200	8950	3100	6510	8230	8090	5160	7650	6270	6470	7660	14900	6290
Manganese	50	ug/l	900	3000	400	203	54.7	495	635	827	276	529	773	620	1880	524
Nickel	100	ug/l	ND	4.08	13.7	1.58	8.24	3.43	4.97	7	5.32	ND	6.35	3.5	6.68	ND
Potassium	NLE	ug/l	1640	4330	3870	1040	1300	2760	3340	3570	2980	2020	2140	2530	2310	2000
Selenium	50	ug/l	ND	ND	ND	ND	ND	ND	ND	5.11	ND	ND	ND	7.72	ND	
Silver	* 30	ug/l	4.72	3.83	22.7	3.66	1.27	2.36	2.69	1.39	3.92	2	2.56	4.61	1.75	6
Sodium	50000	ug/l	19400	24800	22900	4830	9490	47600	45900	61800	17200	39500	11900	12400	12900	40100
Vanadium	NLE	ug/l	1.56	2.32	ND	0.967	0.859	ND	ND	ND	ND	ND	2.61	0.87	ND	ND
Zinc	5000	ug/l	11.1	18.3	41.5	14	29.2	8.45	10.7	43.1	22.8	ND	32.1	16.7	8.94	10

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons;  
 PCBs = polychlorinated biphenyls; MDL = Method Detection Limit; ND = Not Detected;  
 ug/L = micrograms per liter, equivalent to parts per billion (ppb); mg/kg = milligrams per kilogram, equivalent to parts per million; NA = Not Analyzed/Not Applicable;  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion;

Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Tuesday, January 10, 2006

Sample Group # 0  
Page 2 of 2

Table 4-8  
Groundwater Monitoring Well Sampling Results  
886  
Fort Monmouth, New Jersey

WELL ID			Dup (3006603)
Date Collected			2/12/2003
ANALYTE / Lab ID	Criterion	Units	3006603

**VOCs**

1,1,2,2-Tetrachloroethane	* 1	ug/L	ND
1,2-Dichlorobenzene	600	ug/L	ND
1,3-Dichlorobenzene	600	ug/L	ND
1,4-Dichlorobenzene	75	ug/L	ND
Acetone	700	ug/L	3.95
Benzene	1	ug/L	0.63
Chloroform	6	ug/L	ND
Dibromochloromethane	10	ug/L	ND
Ethylbenzene	700	ug/L	ND
Methyl ethyl ketone (2-Butanone)	300	ug/L	1.03
Methyl tertiary butyl ether (MTBE)	* 70	ug/L	ND
Styrene	100	ug/L	ND
Tetrachloroethylene	1	ug/L	ND
Toluene	1000	ug/L	ND
Xylenes (Total)	* 1000	ug/L	ND

**TPH**

Total Petroleum Hydrocarbons	NLE	mg/L	2
------------------------------	-----	------	---

**SVOCs**

1,2-Dichlorobenzene	600	ug/l	ND
1,3-Dichlorobenzene	600	ug/l	ND
1,4-Dichlorobenzene	75	ug/l	ND
2-Methylnaphthalene	* 100	ug/l	1.68
Acenaphthene	400	ug/l	2.73
Acenaphthylene	* 100	ug/l	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	1.64
Dibenzofuran	* 100	ug/l	ND
Diethylphthalate	5000	ug/l	1.36
Fluorene	300	ug/l	2.63
Naphthalene	* 300	ug/l	ND
N-Nitrosodiphenylamine	20	ug/l	ND
Phenanthrene	* 100	ug/l	1.05
Pyrene	200	ug/l	ND

**Pest/PCBs**

4,4'-DDE	.1	ug/l	ND
delta-BHC	* 100	ug/l	ND
gamma-BHC	.2	ug/l	ND

**Metals**

Aluminum	200	ug/l	205
Arsenic	8	ug/l	4.83
Barium	2000	ug/l	15.2
Beryllium	20	ug/l	ND
Cadmium	4	ug/l	1.56
Calcium	NLE	ug/l	15000
Chromium III	NLE	ug/l	3.26
Cobalt	* 100	ug/l	0.589
Copper	1000	ug/l	ND
Iron	300	ug/l	67500

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons;  
PCBs = polychlorinated biphenyls; MDL = Method Detection Limit; ND = Not Detected;  
ug/L = micrograms per liter, equivalent to parts per billion (ppb); mg/kg = milligrams per kilogram, equivalent to parts per million; NA = Not Analyzed/Not Applicable;  
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion;

Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Tuesday, January 10, 2006

Sample Group # 1  
Page 1 of 2

Table 4-8  
Groundwater Monitoring Well Sampling Results  
886  
Fort Monmouth, New Jersey

WELL ID			Dup (3006603)
Date Collected			2/12/2003
ANALYTE / Lab ID	Criterion	Units	3006603

**Metals**

Lead	10	ug/l	2.1
Magnesium	NLE	ug/l	7480
Manganese	50	ug/l	901
Nickel	100	ug/l	ND
Potassium	NLE	ug/l	1620
Selenium	50	ug/l	ND
Silver	* 30	ug/l	4.15
Sodium	50000	ug/l	19600
Vanadium	NLE	ug/l	1.43

Zinc	5000	ug/l	12
------	------	------	----

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons;  
PCBs = polychlorinated biphenyls; MDL = Method Detection Limit; ND = Not Detected;  
ug/L = micrograms per liter, equivalent to parts per billion (ppb); mg/kg = milligrams per kilogram, equivalent to parts per million; NA = Not Analyzed/Not Applicable;  
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion;

Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

*Tuesday, January 10, 2006*

*Sample Group # 1  
Page 2 of 2*

Table 4-8  
 Groundwater Monitoring Well Sampling Results  
 886  
 Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units
<b>VOCs</b>							
Benzene	1	886RW02		2/5/2003	3006107	Maximum Result: 2.16	ug/L
						2.16	ug/L
		886RW05		2/5/2003	3006106	Maximum Result: 1.23	ug/L
						1.23	ug/L
		886RW07		2/12/2003	3006604	Maximum Result: 1.17	ug/L
1.17	ug/L						
Dup (3006103)		2/5/2003	3006103	Maximum Result: 1.09	ug/L	1.09	ug/L
Methyl ethyl ketone (2-Butanone)	300	886RW01		2/5/2003	3006108	Maximum Result: 30039.7	ug/L
						30039.7	ug/L
		886RW08		2/5/2003	3006109	Maximum Result: 29510.7	ug/L
<b>SVOCs</b>							
N-Nitrosodiphenylamine	20	886MW03		2/12/2003	3006606	Maximum Result: 38.99	ug/l
						38.99	ug/l
<b>Metals</b>							
Aluminum	200	886MW01		2/12/2003	3006607	Maximum Result: 212	ug/l
						212	ug/l
		886MW02		2/12/2003	3006608	Maximum Result: 240	ug/l
						240	ug/l
		886MW03		2/12/2003	3006606	Maximum Result: 1250	ug/l
						1250	ug/l
		886MW04		2/12/2003	3006610	Maximum Result: 288	ug/l
						288	ug/l
		886MW05		2/12/2003	3006609	Maximum Result: 458	ug/l
						458	ug/l
886RW06		2/12/2003	3006605	Maximum Result: 269	ug/l		
				269	ug/l		
Dup (3006603)		2/12/2003	3006603	Maximum Result: 205	ug/l	205	ug/l
Arsenic	8	886MW02		2/12/2003	3006608	Maximum Result: 12.2	ug/l
						12.2	ug/l
Iron	300	886MW01		2/12/2003	3006607	Maximum Result: 67300	ug/l
						67300	ug/l
		886MW02		2/12/2003	3006608	Maximum Result: 97500	ug/l
						97500	ug/l
		886MW03		2/12/2003	3006606	Maximum Result: 6070	ug/l
6070	ug/l						
886MW04		2/12/2003	3006610	Maximum Result: 15500	ug/l	15500	ug/l
886MW05				Maximum Result: 307	ug/l		ug/l

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons; MDL = Method Detection Limit; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

Table 4-8  
 Groundwater Monitoring Well Sampling Results  
 886  
 Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units	
Manganese	50			2/12/2003	3006609	307	ug/l	
		886RW01				Maximum Result: 6800	ug/l	
				2/5/2003	3006108	6800	ug/l	
		886RW02				Maximum Result: 14800	ug/l	
				2/5/2003	3006107	14800	ug/l	
		886RW03				Maximum Result: 19000	ug/l	
				2/5/2003	3006104	19000	ug/l	
		886RW04				Maximum Result: 1930	ug/l	
				2/5/2003	3006105	1930	ug/l	
		886RW05				Maximum Result: 22300	ug/l	
				2/5/2003	3006106	22300	ug/l	
		886RW06				Maximum Result: 14200	ug/l	
				2/12/2003	3006605	14200	ug/l	
		886RW07				Maximum Result: 14100	ug/l	
				2/12/2003	3006604	14100	ug/l	
		886RW08				Maximum Result: 3590	ug/l	
				2/5/2003	3006109	3590	ug/l	
		Dup (3006103)				Maximum Result: 21800	ug/l	
				2/5/2003	3006103	21800	ug/l	
		Dup (3006603)				Maximum Result: 67500	ug/l	
				2/12/2003	3006603	67500	ug/l	
							Maximum Result: 900	ug/l
		886MW01			2/12/2003	3006607	900	ug/l
							Maximum Result: 3000	ug/l
886MW02			2/12/2003	3006608	3000	ug/l		
					Maximum Result: 400	ug/l		
886MW03			2/12/2003	3006606	400	ug/l		
					Maximum Result: 203	ug/l		
886MW04			2/12/2003	3006610	203	ug/l		
					Maximum Result: 54.7	ug/l		
886MW05			2/12/2003	3006609	54.7	ug/l		
					Maximum Result: 495	ug/l		
886RW01			2/5/2003	3006108	495	ug/l		
					Maximum Result: 635	ug/l		
886RW02			2/5/2003	3006107	635	ug/l		
					Maximum Result: 827	ug/l		
886RW03			2/5/2003	3006104	827	ug/l		
					Maximum Result: 276	ug/l		
886RW04			2/5/2003	3006105	276	ug/l		
					Maximum Result: 529	ug/l		
886RW05			2/5/2003	3006106	529	ug/l		
					Maximum Result: 773	ug/l		
886RW06			2/12/2003	3006605	773	ug/l		
					Maximum Result: 620	ug/l		
886RW07			2/12/2003	3006604	620	ug/l		
					Maximum Result: 1880	ug/l		
886RW08								

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons; MDL = Method Detection Limit;  
 ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;  
 Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

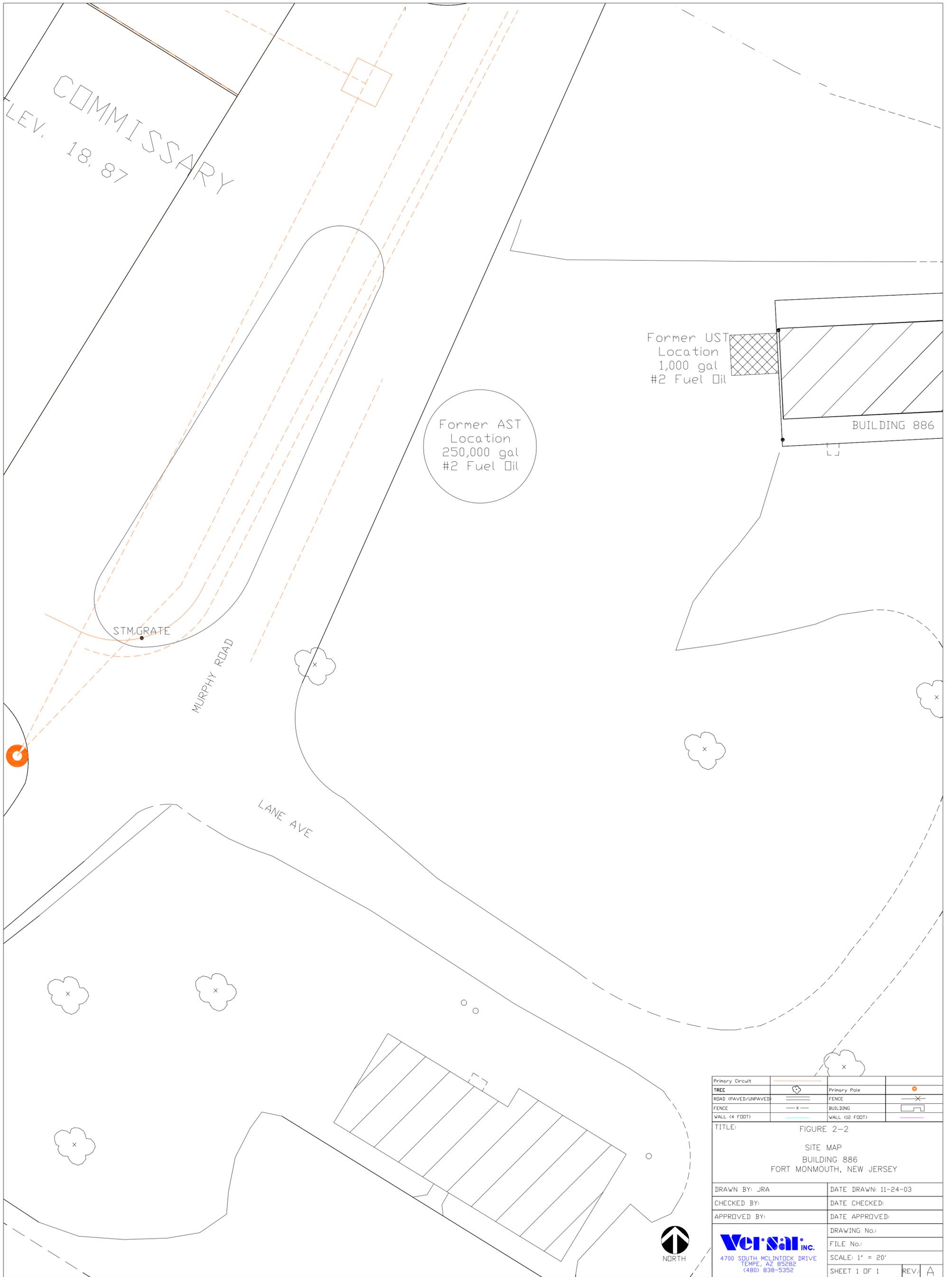
Table 4-8  
 Groundwater Monitoring Well Sampling Results  
 886  
 Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units		
Sodium	50000	Dup (3006103)		2/5/2003	3006109	1880	ug/l		
								<b>Maximum Result: 524</b>	ug/l
		Dup (3006603)		2/5/2003	3006103	524	ug/l		
								<b>Maximum Result: 901</b>	ug/l
					2/12/2003	3006603	901	ug/l	
				886RW03					
				2/5/2003	3006104	61800	ug/l		

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; TPH = Total Petroleum Hydrocarbons; MDL = Method Detection Limit;  
 ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;  
 Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6  
 Shaded block identifies sample and associated constituent concentration that exceeds the criterion. \* = Interim Criterion.

**FIGURES**

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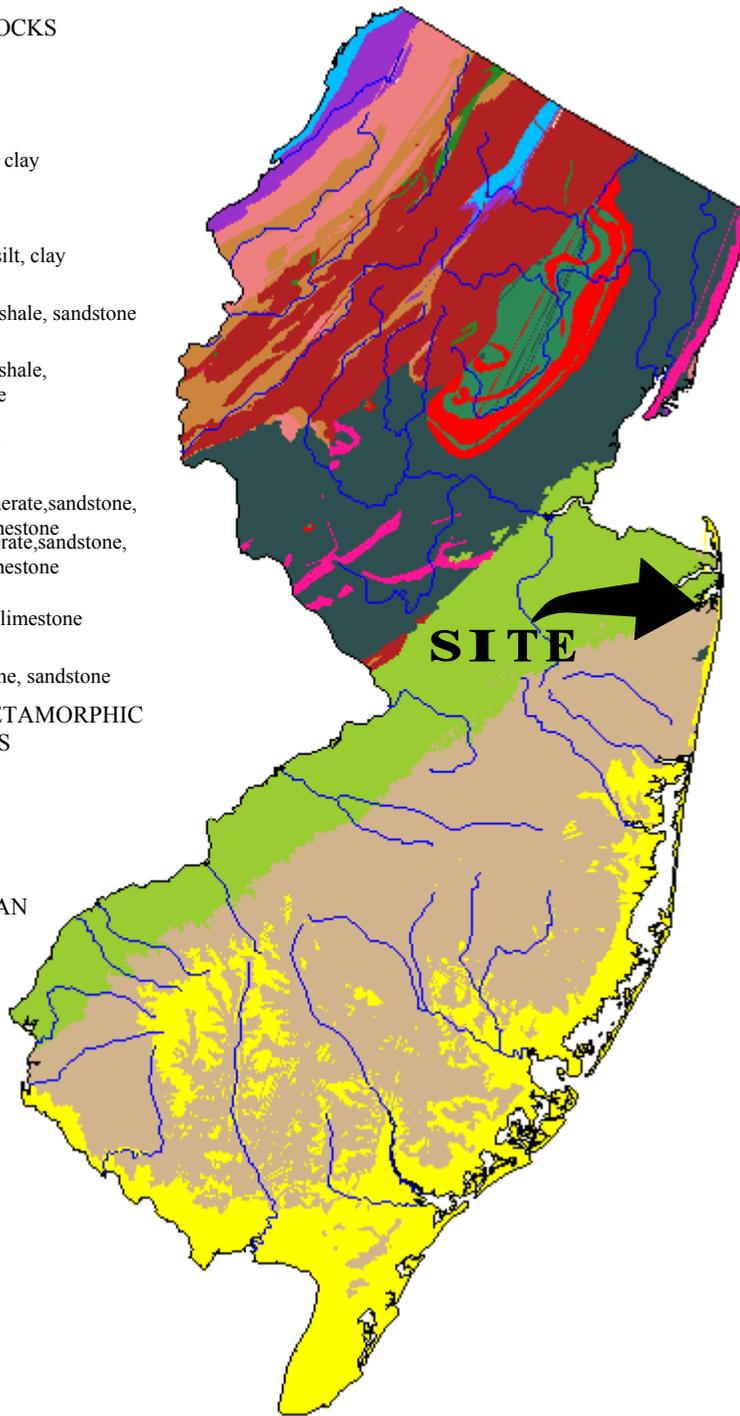
Primary Circuit		Primary Pole	
TREE		FENCE	
ROAD (PAVED/UNPAVED)		BUILDING	
FENCE		WALL (4 FOOT)	
WALL (4 FOOT)		WALL (12 FOOT)	

TITLE: FIGURE 2-2	
SITE MAP	
BUILDING 886	
FORT MONMOUTH, NEW JERSEY	
DRAWN BY: JRA	DATE DRAWN: 11-24-03
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
DRAWING No.:	
FILE No.:	
SCALE: 1" = 20'	
SHEET 1 OF 1	REV.: A

**Versar** inc.  
4700 SOUTH MCJINTOCK DRIVE  
TEMPE, AZ 85282  
(480) 838-5352

# Geologic Map of New Jersey

- SEDIMENTARY ROCKS**
- CENOZOIC**
- Holocene: sand
  - Tertiary: sand, silt, clay
- MESOZOIC**
- Cretaceous: sand, silt, clay
  - Jurassic: siltstone, shale, sandstone
  - Triassic: siltstone, shale, sandstone
- PALEOZOIC**
- Devonian: conglomerate, sandstone, shale, limestone
  - Silurian: conglomerate, sandstone, shale, limestone
  - Ordovician: shale, limestone
  - Cambrian: limestone, sandstone
- IGNEOUS AND METAMORPHIC ROCKS**
- MESOZOIC**
- Jurassic: basalt
  - Jurassic: diabase
- PRECAMBRIAN**
- marble
  - gneiss, granite



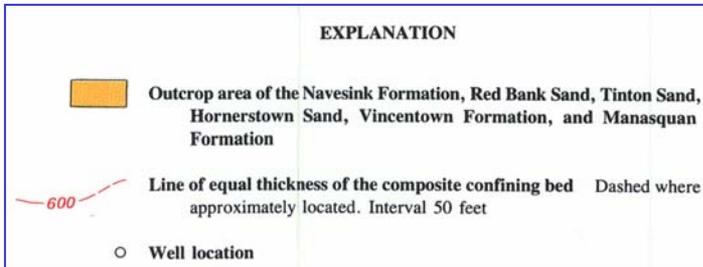
**FIGURE 2-3**  
 Geologic Map of New Jersey  
 Building 886 – Main Post  
 Fort Monmouth, New Jersey

**Versar** INC. 201 Gibraltar Road, Suite 100  
 Horsham, Pennsylvania, 19044  
 (215)-957-0955

Source: New Jersey Geologic Survey, 1994, *Geologic Map of New Jersey*.



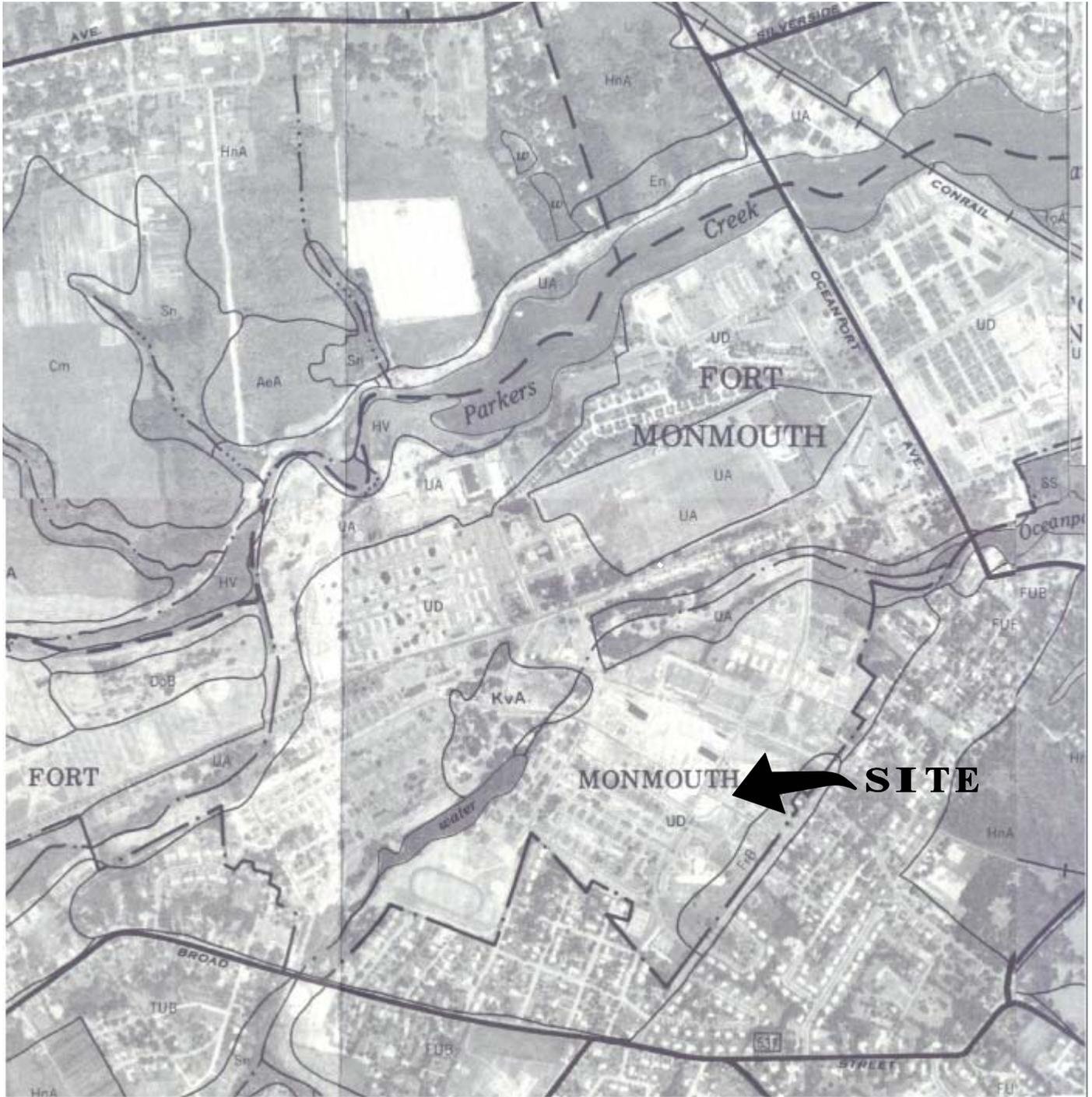
Fort Monmouth  
125 feet in thickness  
at Fort Monmouth



**FIGURE 2-4**  
**Outcrop and Thickness of Composite Confining Unit Building 886 – Main Post Fort Monmouth, New Jersey**

**Versar** INC. 201 Gibraltar Road, Suite 100  
Horsham, PA 19044  
(215) 957-0955

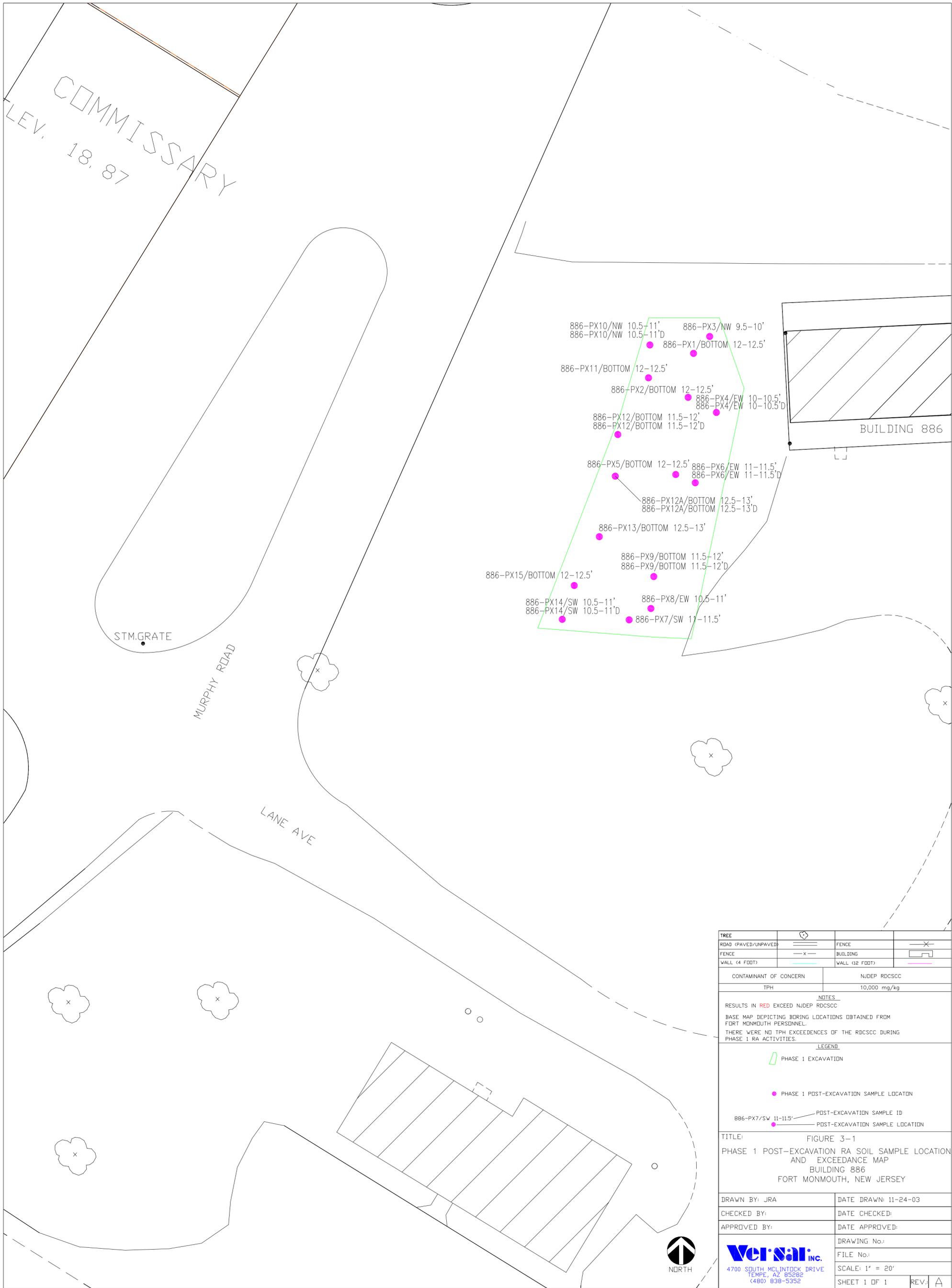
Source: Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain*. USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.



US Department of Agriculture  
 Soil Conservation Service  
 Soil Survey of Monmouth County, NJ  
 April 1989

**Figure 2-5**  
**Soil Map of Monmouth County**  
**Building 886**  
**Fort Monmouth, New Jersey**

**Versar** INC. 201 Gibraltar Road, Suite 100  
 Horsham, PA 19044  
 (215) 957-0955



COMMISSARY  
LEV. 18.87

STM.GRATE

MURPHY ROAD

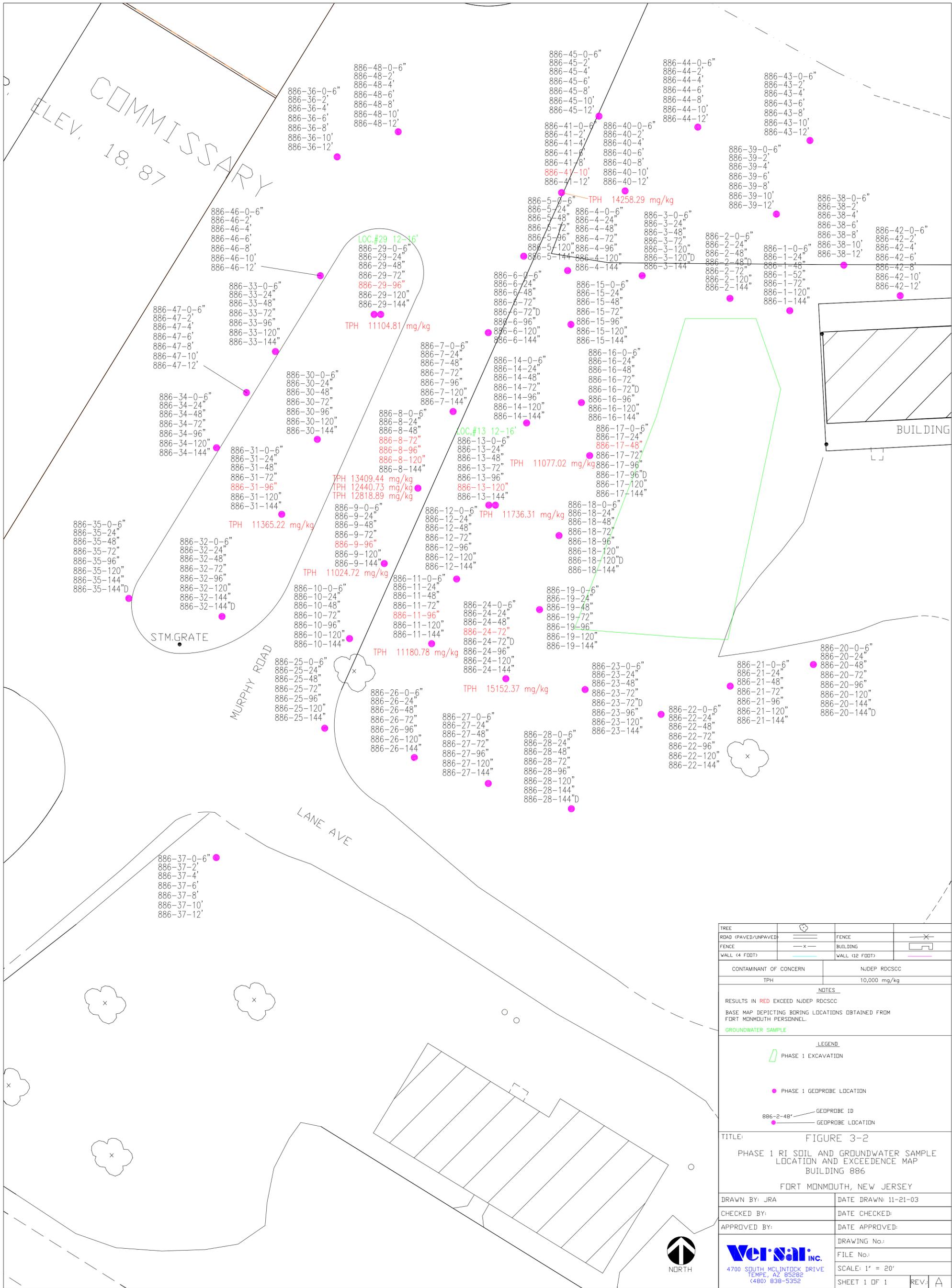
LANE AVE

BUILDING 886

- 886-PX10/NW 10.5-11'
- 886-PX10/NW 10.5-11'D
- 886-PX11/BOTTOM 12-12.5'
- 886-PX2/BOTTOM 12-12.5'
- 886-PX12/BOTTOM 11.5-12'
- 886-PX12/BOTTOM 11.5-12'D
- 886-PX5/BOTTOM 12-12.5'
- 886-PX12A/BOTTOM 12.5-13'
- 886-PX12A/BOTTOM 12.5-13'D
- 886-PX13/BOTTOM 12.5-13'
- 886-PX9/BOTTOM 11.5-12'
- 886-PX9/BOTTOM 11.5-12'D
- 886-PX15/BOTTOM 12-12.5'
- 886-PX14/SW 10.5-11'
- 886-PX14/SW 10.5-11'D
- 886-PX8/EW 10.5-11'
- 886-PX7/SW 11-11.5'
- 886-PX3/NW 9.5-10'
- 886-PX1/BOTTOM 12-12.5'
- 886-PX4/EW 10-10.5'
- 886-PX4/EW 10-10.5'D
- 886-PX6/EW 11-11.5'
- 886-PX6/EW 11-11.5'D

TREE		FENCE	
ROAD (PAVED/UNPAVED)		BUILDING	
FENCE		WALL (4 FOOT)	
WALL (4 FOOT)		WALL (12 FOOT)	
CONTAMINANT OF CONCERN		NJDEP RDCSCC	
TPH		10,000 mg/kg	
NOTES			
RESULTS IN RED EXCEED NJDEP RDCSCC			
BASE MAP DEPICTING BORING LOCATIONS OBTAINED FROM FORT MONMOUTH PERSONNEL.			
THERE WERE NO TPH EXCEEDENCES OF THE RDCSCC DURING PHASE 1 RA ACTIVITIES.			
LEGEND			
PHASE 1 EXCAVATION			
PHASE 1 POST-EXCAVATION SAMPLE LOCATION			
886-PX7/SW 11-11.5'			
POST-EXCAVATION SAMPLE ID			
POST-EXCAVATION SAMPLE LOCATION			
TITLE: FIGURE 3-1			
PHASE 1 POST-EXCAVATION RA SOIL SAMPLE LOCATION AND EXCEEDANCE MAP			
BUILDING 886			
FORT MONMOUTH, NEW JERSEY			
DRAWN BY: JRA	DATE DRAWN: 11-24-03		
CHECKED BY:	DATE CHECKED:		
APPROVED BY:	DATE APPROVED:		
 <b>Versar</b> inc. 4700 SOUTH MCINTOCK DRIVE TEMPE, AZ 85282 (480) 838-5352		DRAWING No.:	
		FILE No.:	
		SCALE: 1" = 20'	
		SHEET 1 OF 1	REV: A





TREE		FENCE	
ROAD (PAVED/UNPAVED)		BUILDING	
FENCE (4 FOOT)		WALL (12 FOOT)	
CONTAMINANT OF CONCERN		NJDEP RDSCCC	
TPH		10,000 mg/kg	
NOTES			
RESULTS IN RED EXCEED NJDEP RDSCCC			
BASE MAP DEPICTING BORING LOCATIONS OBTAINED FROM FORT MONMOUTH PERSONNEL.			
GROUNDWATER SAMPLE			
LEGEND			
PHASE 1 EXCAVATION			
PHASE 1 GEOPROBE LOCATION			
886-2-48" ——— GEOPROBE ID			
GEOPROBE LOCATION			
TITLE: <b>FIGURE 3-2</b>			
PHASE 1 RI SOIL AND GROUNDWATER SAMPLE LOCATION AND EXCEEDENCE MAP BUILDING 886			
FORT MONMOUTH, NEW JERSEY			
DRAWN BY: JRA		DATE DRAWN: 11-21-03	
CHECKED BY:		DATE CHECKED:	
APPROVED BY:		DATE APPROVED:	
		DRAWING No.:	
VERSAR INC.		FILE No.:	
4700 SOUTH MCINTOCK DRIVE		SCALE: 1" = 20'	
TEMPLE, AZ 85282		SHEET 1 OF 1	
(480) 838-5352		REV: A	

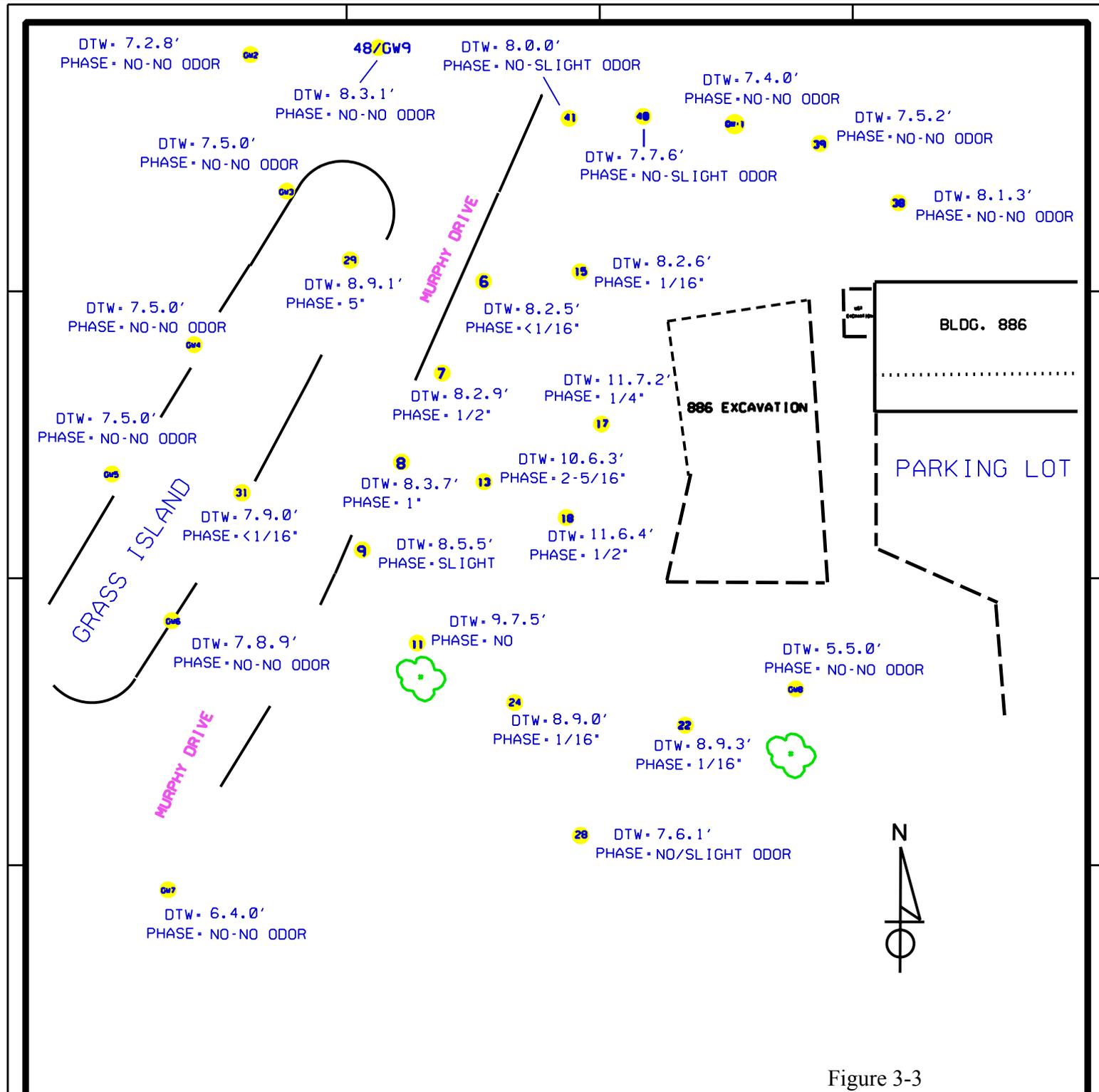
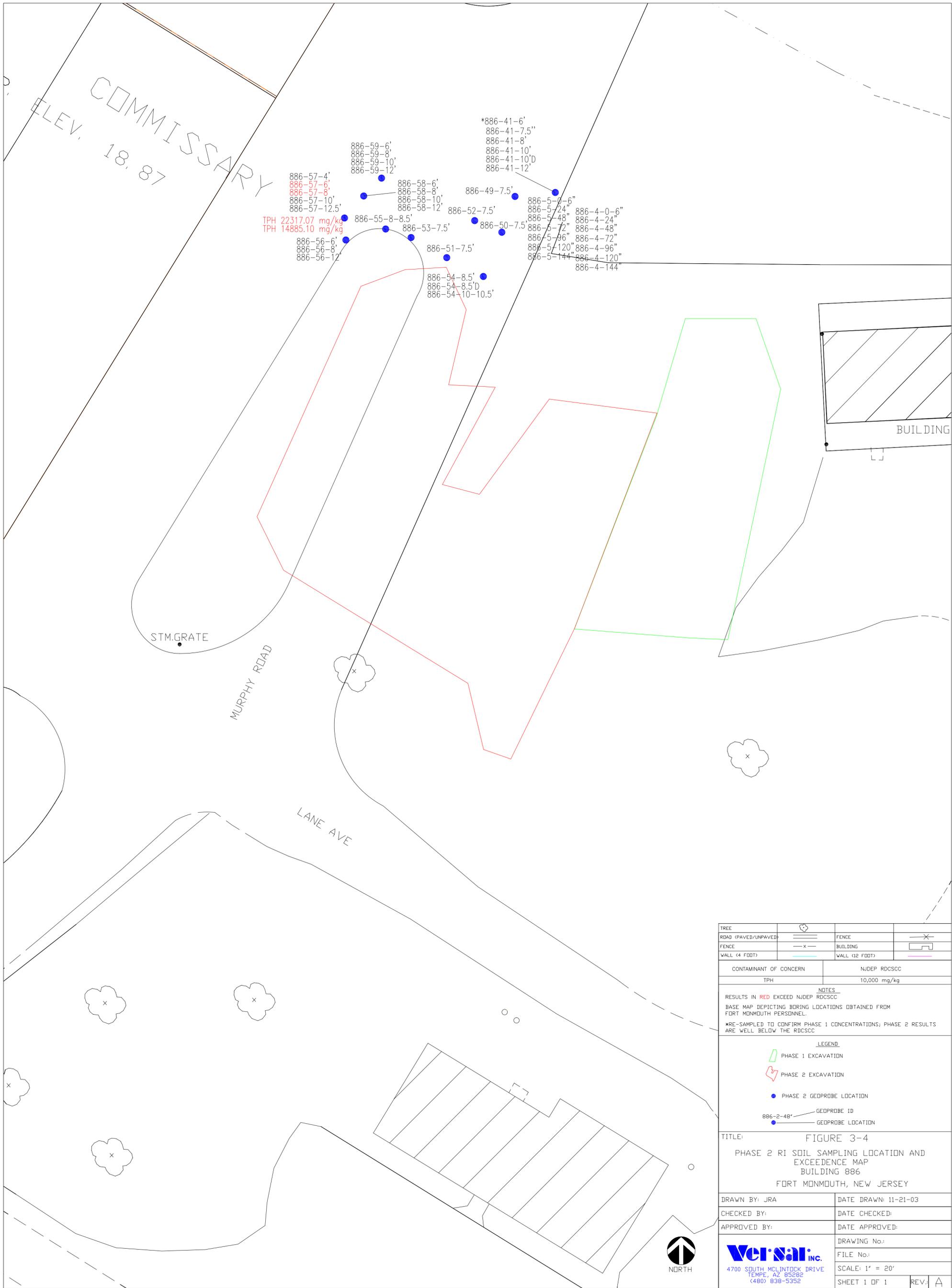


Figure 3-3

<h1>KEY</h1>	
●	• GEOPROBE LOCATIONS
DTW • DEPTH TO WATER	
PHASE • AMOUNT OF OIL ON WATER	

RI Geoprobe GW Boring Location & <input type="checkbox"/> Phase Measurement Map <input type="checkbox"/> Building 886 <input type="checkbox"/> Fort Monmouth, New Jersey	
<b>FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY</b>	
SCALE: 1" = 45'	DATE: 8/14/02

MARK LAURA - CTSC/TVS 7/1/02



COMMISSARY  
ELEV. 18.87

886-57-4'  
886-57-6'  
886-57-8'  
886-57-10'  
886-57-12.5'  
TPH 22317.07 mg/kg  
TPH 14885.10 mg/kg

886-59-6'  
886-59-8'  
886-59-10'  
886-59-12'

886-58-6'  
886-58-8'  
886-58-10'  
886-58-12'

886-49-7.5'

\*886-41-6"  
886-41-7.5"  
886-41-8'  
886-41-10'  
886-41-10'D  
886-41-12'

886-56-6'  
886-56-8'  
886-56-12'

886-55-8-8.5'

886-53-7.5'

886-51-7.5'

886-54-8.5'  
886-54-8.5'D  
886-54-10-10.5'

886-52-7.5'

886-50-7.5'

886-5-0-6"  
886-5-24"  
886-5-48"  
886-5-72"  
886-5-96"  
886-5-120"  
886-5-144"

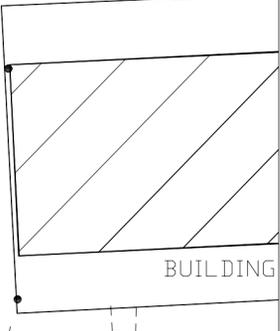
886-4-0-6"  
886-4-24"  
886-4-48"  
886-4-72"  
886-4-96"  
886-4-120"

886-4-144"

STM.GRATE

MURPHY ROAD

LANE AVE



TREE		FENCE	
ROAD (PAVED/UNPAVED)		BUILDING	
FENCE		WALL (4 FOOT)	
WALL (4 FOOT)		WALL (12 FOOT)	

CONTAMINANT OF CONCERN	NJDEP RDCSCC
TPH	10,000 mg/kg

NOTES  
RESULTS IN RED EXCEED NJDEP RDCSCC  
BASE MAP DEPICTING BORING LOCATIONS OBTAINED FROM FORT MONMOUTH PERSONNEL.  
\*RE-SAMPLED TO CONFIRM PHASE 1 CONCENTRATIONS; PHASE 2 RESULTS ARE WELL BELOW THE RDCSCC

	PHASE 1 EXCAVATION
	PHASE 2 EXCAVATION
	PHASE 2 GEOPROBE LOCATION
	GEOPROBE ID
	GEOPROBE LOCATION

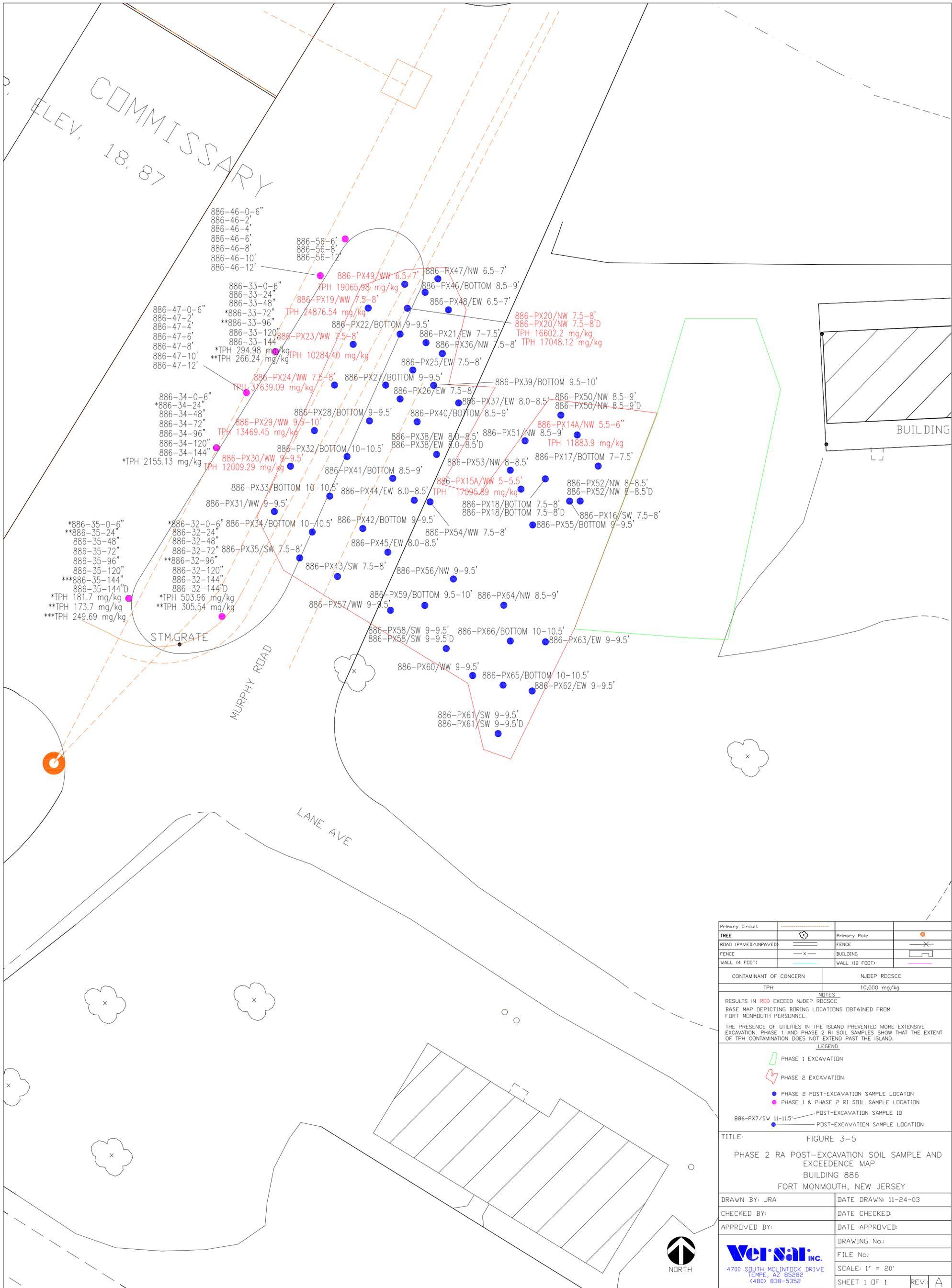
TITLE: FIGURE 3-4  
PHASE 2 RI SOIL SAMPLING LOCATION AND EXCEEDENCE MAP  
BUILDING 886  
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JRA	DATE DRAWN: 11-21-03
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:

 4700 SOUTH MCINTOCK DRIVE TEMPE, AZ 85282 (480) 838-5352	DRAWING No.:
	FILE No.:
	SCALE: 1" = 20'
	SHEET 1 OF 1

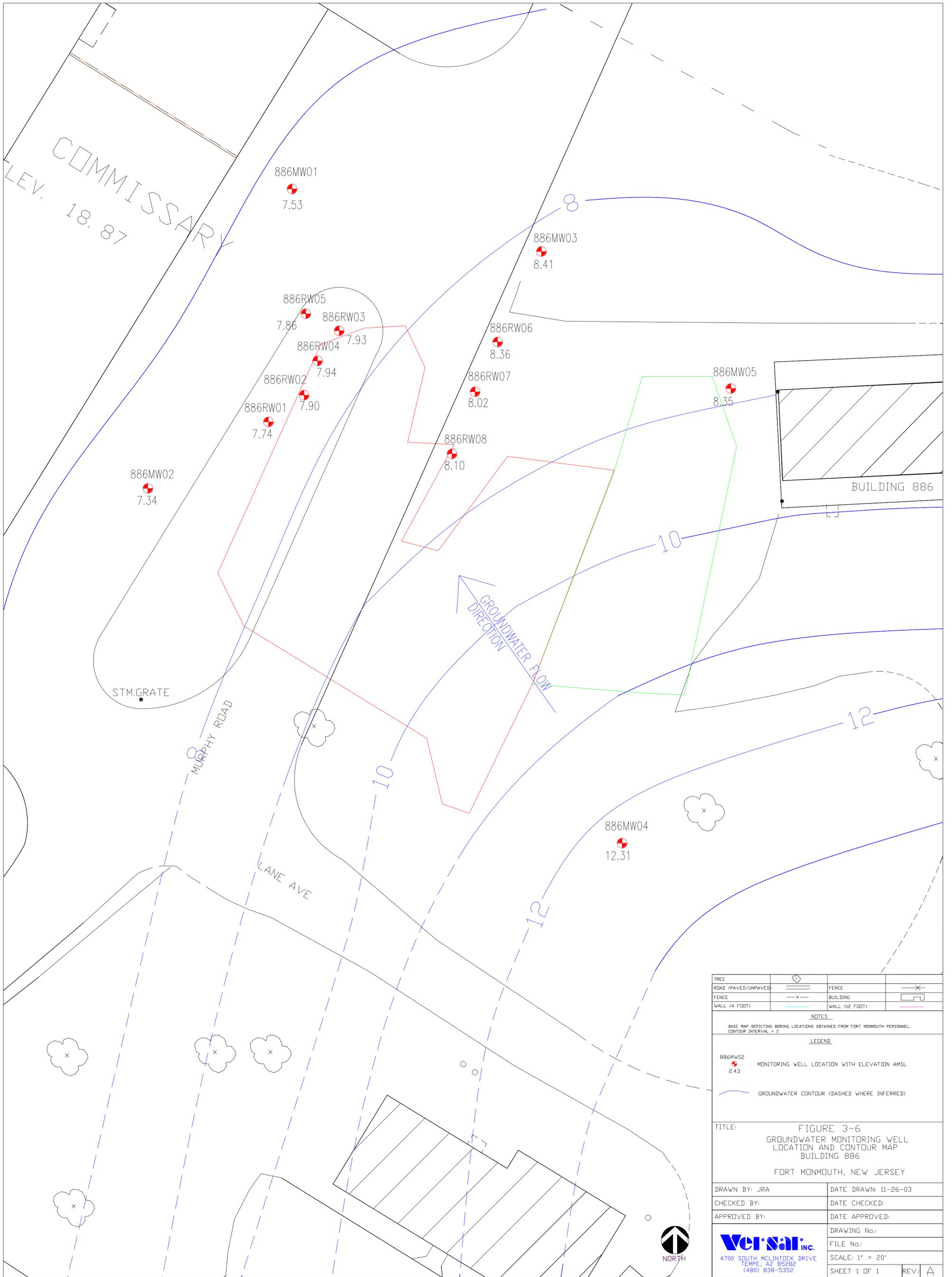


REV: A



Primary Circuit	---	Primary Pole	○
TREE	⊗	FENCE	—x—
ROAD (PAVED/UNPAVED)	==	BUILDING	▭
FENCE	—x—	WALL (4 FOOT)	---
WALL (4 FOOT)	---	WALL (12 FOOT)	---
CONTAMINANT OF CONCERN		NJDEP RDCSCC	
TPH		10,000 mg/kg	
NOTES			
RESULTS IN RED EXCEED NJDEP RDCSCC			
BASE MAP DEPICTING BORING LOCATIONS OBTAINED FROM FORT MONMOUTH PERSONNEL.			
THE PRESENCE OF UTILITIES IN THE ISLAND PREVENTED MORE EXTENSIVE EXCAVATION. PHASE 1 AND PHASE 2 RI SOIL SAMPLES SHOW THAT THE EXTENT OF TPH CONTAMINATION DOES NOT EXTEND PAST THE ISLAND.			
LEGEND			
<ul style="list-style-type: none"> <li><span style="color: green;">▭</span> PHASE 1 EXCAVATION</li> <li><span style="color: red;">▭</span> PHASE 2 EXCAVATION</li> <li><span style="color: blue;">●</span> PHASE 2 POST-EXCAVATION SAMPLE LOCATION</li> <li><span style="color: pink;">●</span> PHASE 1 &amp; PHASE 2 RI SOIL SAMPLE LOCATION</li> <li>886-PX7/SW 11-11.5' — POST-EXCAVATION SAMPLE ID</li> <li><span style="color: blue;">●</span> — POST-EXCAVATION SAMPLE LOCATION</li> </ul>			
TITLE: FIGURE 3-5			
PHASE 2 RA POST-EXCAVATION SOIL SAMPLE AND EXCEEDENCE MAP			
BUILDING 886			
FORT MONMOUTH, NEW JERSEY			
DRAWN BY: JRA		DATE DRAWN: 11-24-03	
CHECKED BY:		DATE CHECKED:	
APPROVED BY:		DATE APPROVED:	
		DRAWING No.:	
4700 SOUTH MCINTOCK DRIVE TEMPE, AZ 85282 (480) 838-5352		FILE No.:	
		SCALE: 1" = 20'	
		SHEET 1 OF 1	
		REV: A	





TREE			
ROAD (PAVED/UNPAVED)		FENCE	
FENCE		BUILDING	
WALL (4 FOOT)		WALL (12 FOOT)	

NOTES

BASE MAP DEPICTING BORING LOCATIONS OBTAINED FROM FORT MONMOUTH PERSONNEL.  
CONTOUR INTERVAL = 1'

LEGEND

886MW02  
2.43

MONITORING WELL LOCATION WITH ELEVATION AMSL

GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

TITLE: FIGURE 3-6  
GROUNDWATER MONITORING WELL  
LOCATION AND CONTOUR MAP  
BUILDING 886  
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JRA	DATE DRAWN: 11-26-03
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:

DRAWING No.:

FILE No.:

SCALE: 1" = 20'

SHEET 1 OF 1

REV: A

**Versar** INC.  
4700 SOUTH MCCLINTOCK DRIVE  
TEMPE, AZ 85282  
(480) 838-5352

FIN. FLR. ELEV. 18.87  
COMMISSARY

886MW01  
Benzene ND  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

886MW03  
Benzene ND  
Methyl ethyl ketone ND  
N-Nitrosodiphenylamine 38.99 ug/l

Benzene 1.23 ug/l  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

886RW05  
Benzene ND  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

886RW06  
Benzene ND  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

Benzene ND  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

886RW03  
Benzene ND  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

886RW04  
Benzene ND  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

886RW07  
Benzene 1.17 ug/l  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

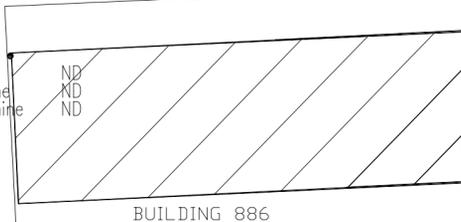
886MW05  
Benzene ND  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

886RW02  
Benzene 2.1 ug/l  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

886RW01  
Benzene ND  
Methyl ethyl ketone 30039.7 ug/l  
N-Nitrodiphenylamine ND

886MW02  
Benzene ND  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

886RW08  
Benzene ND  
Methyl ethyl ketone 29510.7 ug/l  
N-Nitrodiphenylamine ND



BUILDING 886

STM.GRATE

MURPHY ROAD

LANE AVE

886MW04  
Benzene ND  
Methyl ethyl ketone ND  
N-Nitrodiphenylamine ND

TREE		FENCE	
ROAD (PAVED/UNPAVED)		BUILDING	
FENCE		WALL (4 FOOT)	
WALL (4 FOOT)		WALL (12 FOOT)	

CONTAMINANT OF CONCERN	NJDEP GWQC
BENZENE	1.0 ug/L
METHYL ETHYL KETONE (2-BUTANONE)	300 ug/L
N-NITROSODIPHENYLAMINE	20 ug/L

NOTES  
RESULTS IN RED EXCEED NJDEP GWQC  
BASE MAP DEPICTING BORING LOCATIONS OBTAINED FROM FORT MONMOUTH PERSONNEL.  
ND = NOT DETECTED

LEGEND

886MW01 — MONITORING WELL ID  
 — MONITORING WELL LOCATION

TITLE: FIGURE 4-1  
GROUNDWATER MONITORING WELL COC EXCEEDANCES  
BUILDING 886  
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JRA	DATE DRAWN: 11-24-03
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
DRAWING No.:	
FILE No.:	
SCALE: 1" = 20'	
SHEET 1 OF 1	REV: A



**Versar** INC.  
4700 SOUTH MCINTOCK DRIVE  
TEMPE, AZ 85282  
(480) 838-5352

**APPENDICES**

**APPENDIX A**

**Monitoring Well Construction Logs, Permits and Survey Records,  
Groundwater Treatment System O&M Manual and As-Built Site Plan**



September 8, 2003

Mr. Douglas C. Guenther  
Environmental Protection Specialist  
U.S. Army, Directorate of Public Works  
Attn: SELFM-PW-EV, Bldg. 173  
Fort Monmouth, NJ 07703

**RE: Product Recovery System  
Building 886  
Fort Monmouth, NJ**

Dear Mr. Guenther,

Please find the attached O&M sheets for the installation of the product recovery system located at building 886. A description of the work that was performed each day is summarized on each sheet. Please contact me at 732-536-8667 ext. 337 with any questions you may have.

Sincerely,

Fred M. Howlett  
Associate Project Manager

Enclosure(s)

Cc: Handex – File Copy

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29-47835

Atlas Sheet Coordinates 29 13 669

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

TYPE OF WELL (as per Well Permit Categories) MONITORING DATE WELL STARTED 1/8/03  
Regulatory Program Requiring Well \_\_\_\_\_ DATE WELL COMPLETED 1/8/03  
Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 932/536-1376

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.

Borehole diameter:  
Top 10 in.  
Bottom 10 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface \_\_\_\_\_ ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling 6 ft.

Water level was measured using probe

Well was developed for 1/2 hours  
at 1 gpm

Method of development pump + surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity \_\_\_\_\_ gpm

Pump type: \_\_\_\_\_

Drilling Fluid \_\_\_\_\_ Type of Rig B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

*I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.*

Drilling Company HANDEX CORP./CHRIS O'SHAUGHNES

Well Driller (Print) Jeffrey Marchesi

Driller's Signature Jeff Marchesi

Registration No. MD1512 Date 1/8/03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2	4	PVC	SCH 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	2	17	4	PVC	.010 Slot
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	2	17	10	Sand	#1
Grout	0	2	10	Neat Cement Bentonite	97 lbs. 5 lbs.

Grouting Method Pressure  
Drilling Method Hollow Stem Augers

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>0-17' Brown fine to coarse Sand, little silt</u>	

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)	
NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
LATITUDE: _____	OR LONGITUDE: _____

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29 47837

Atlas Sheet Coordinates 29 13 669

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-3  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

DATE WELL STARTED 1/8/03  
DATE WELL COMPLETED 1/8/03  
TYPE OF WELL (as per Well Permit Categories) MONITORING  
Regulatory Program Requiring Well \_\_\_\_\_ Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 732/536-1376

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.

Borehole diameter:  
Top 10 in.  
Bottom 10 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface 13 ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling 6 ft.

Water level was measured using probe

Well was developed for 1/2 hours  
at \_\_\_\_\_ gpm

Method of development pump + surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity \_\_\_\_\_ gpm

Pump type: \_\_\_\_\_

Drilling Fluid \_\_\_\_\_ Type of Rig B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company HANDEX CORP./CHRIS O'SHAUGHNES

Well Driller (Print) Jeffrey Marchesi

Driller's Signature Jeff Marchesi

Registration No. M01512 Date 1/18/03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	<u>13</u>	<u>2</u>	<u>4</u>	<u>Pvc</u>	<u>sch 40</u>
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	<u>2</u>	<u>17</u>	<u>4</u>	<u>PVC</u>	<u>.010 Slt</u>
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	<u>2</u>	<u>17</u>	<u>10</u>	<u>Sand</u>	<u># 1</u>
Grout	<u>0</u>	<u>2</u>	<u>10</u>	<u>Neat Cement Bentonite</u>	<u>97 lbs. 5 lbs.</u>

Grouting Method Pressure  
Drilling Method Hollow Stem Augers

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>0-17'</u>	<u>Brown fine to coarse sand, little silt.</u>

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)	
NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
OR	
LATITUDE: _____	LONGITUDE: _____

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29 47838

Atlas Sheet Coordinates 29 : 13 : 669

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-4  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

DATE WELL STARTED 1/8/03  
DATE WELL COMPLETED 1/8/03  
TYPE OF WELL (as per Well Permit Categories) MONITORING  
Regulatory Program Requiring Well \_\_\_\_\_ Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 732/536-13

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.

Borehole diameter:  
Top 10 in.  
Bottom 10 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface 13 ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling 6 ft.

Water level was measured using probe

Well was developed for 1/2 hours  
at 1 gpm

Method of development pump + surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity \_\_\_\_\_ gpm

Pump type: \_\_\_\_\_

Drilling Fluid \_\_\_\_\_ Type of Rig B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company HANDEX CORP./CHRIS O'SHAUGHNES

Well Driller (Print) Jeffrey Marchesi

Driller's Signature Jeffrey Marchesi

Registration No. MD1512 Date 1/8/03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	<u>13</u>	<u>2</u>	<u>4</u>	<u>PVC</u>	<u>SCH 40</u>
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	<u>2</u>	<u>17</u>	<u>4</u>	<u>PVC</u>	<u>.010 Slot</u>
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	<u>2</u>	<u>17</u>	<u>10</u>	<u>Sand</u>	<u>#1</u>
Grout	<u>0</u>	<u>2</u>	<u>10</u>	Neat Cement Bentonite	<u>97</u> lbs. <u>5</u> lbs.

Grouting Method Pressure  
Drilling Method Hollow Stem Auger

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>0-17'</u>	<u>Brown fine to coarse sand, little silt.</u>

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM) NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
LATITUDE: _____	OR LONGITUDE: _____

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29 47839

Atlas Sheet Coordinates 29 : 13 : 669

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-5  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

DATE WELL STARTED 1, 8, 03  
DATE WELL COMPLETED 1, 8, 03  
TYPE OF WELL (as per Well Permit Categories) MONITORING  
Regulatory Program Requiring Well \_\_\_\_\_ Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 732/536-137

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.

Borehole diameter:  
Top 10 in.  
Bottom 10 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface +3 ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling 6 ft.

Water level was measured using probe

Well was developed for 1/2 hours  
at 1 gpm

Method of development pump + surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity \_\_\_\_\_ gpm

Pump type: \_\_\_\_\_

Drilling Fluid \_\_\_\_\_ Type of Rig B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company HANDEX CORP./CHRIS O'SHAUGHNES

Well Driller (Print) Jeffrey Marchesi

Driller's Signature Jeffrey Marchesi

Registration No. MB1512 Date 1, 8, 03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	+3	2	4	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	2	17	4	PVC	.40 Slot
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	2	17	10	Sand	#1
Grout	0	2	10	Neat Cement Bentonite	97 lbs. 5 lbs.

Grouting Method Pressure  
Drilling Method Hollow Stem Auger

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>0-17' Brown fine to coarse sand, little silt.</u>	

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)	
NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
OR	
LATITUDE: _____	LONGITUDE: _____

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No.          -29 47840

Atlas Sheet Coordinates          29 13 66

OWNER IDENTIFICATION - Owner          US ARMY FORT MONMOUTH DPW  
Address          BUILDING 173  
City          FORT MONMOUTH State          NJ Zip Code         

WELL LOCATION - If not the same as owner please give address. Owner's Well No.          RW - 1  
County          MONMOUTH Municipality          OCEANPORT BORO Lot No.          N/A Block No.          N/A  
Address          BUILDING 886 MURPHY DR

TYPE OF WELL (as per Well Permit Categories)          RECOVERY DATE WELL STARTED          1, 78, 03  
Regulatory Program Requiring Well          DATE WELL COMPLETED          1, 78, 03  
Case I.D.#         

CONSULTING FIRM/FIELD SUPERVISOR (if applicable)          Handex Tele. #          732/536-1376

**WELL CONSTRUCTION**

Total depth drilled          17 ft.  
Well finished to          17 ft.

Borehole diameter:  
Top          14 in.  
Bottom          14 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface          ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling          6 ft.

Water level was measured using          probe

Well was developed for          1 hours  
at          1 gpm

Method of development          pump + surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity          gpm

Pump type:         

Drilling Fluid          Type of Rig          B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company          HANDEX CORP. / CHRIS O'SHAUGHNES

Well Driller (Print)          Jeffrey Marchesi

Driller's Signature          [Signature]

Registration No.          MDIS12 Date          1, 18, 03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2	6	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	2	17	6	PVC	.010 Slot
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	1	17	14	sand	#1
Grout	0	1	14	Neat Cement Bentonite	94 lbs. 5 lbs.

Grouting Method          Gravity Displacement  
Drilling Method          Hollow Stem Augers

**GEOLOGIC LOG**

Note each depth where water was encountered in consolidated formations.

         0-17' Brown fine to coarse sand, little silt, trace clay.

**AS-BUILT WELL LOCATION  
(NAD 83 HORIZONTAL DATUM)**

**NJ STATE PLANE COORDINATE IN US SURVEY FEET**

NORTHING:          EASTING:         

LATITUDE:          ° ' " OR LONGITUDE:          ° ' " "

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29 47841

Atlas Sheet Coordinates 29 13 66

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_

WELL LOCATION - If not the same as owner please give address. Owner's Well No. RW-2  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

DATE WELL STARTED 1/18/03  
DATE WELL COMPLETED 1/18/03  
TYPE OF WELL (as per Well Permit Categories) RECOVERY  
Regulatory Program Requiring Well \_\_\_\_\_ Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 732/536-1376

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.

Borehole diameter:  
Top 14 in.  
Bottom 14 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface \_\_\_\_\_ ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling 6 ft.

Water level was measured using probe

Well was developed for 1 hours  
at \_\_\_\_\_ gpm

Method of development pump & surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity \_\_\_\_\_ gpm

Pump type: \_\_\_\_\_

Drilling Fluid \_\_\_\_\_ Type of Rig B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

*I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.*

Drilling Company HANDEX CORP./CHRIS O'SHAUGHNES

Well Driller (Print) Jeffrey Marchesi

Driller's Signature Jeffy Marchesi

Registration No. MD1512 Date 1/18/03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2	6	PVC	SCH 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	2	17	6	PVC	.010 Slot
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	1	17	14	sand	#1
Grout	0	1	14	Neat Cement Bentonite	94 lbs. 5 lbs.

Grouting Method Gravity Displacement  
Drilling Method Hollow Stem Auger

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>0-17' Brown fine to coarse sand, little silt, trace clay</u>	

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)	
NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
LATITUDE: _____	OR " LONGITUDE: _____

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29 47842

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_  
Atlas Sheet Coordinates 29 13 66

WELL LOCATION - If not the same as owner please give address. Owner's Well No. RW-3  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

TYPE OF WELL (as per Well Permit Categories) RECOVERY DATE WELL STARTED 1/18/03  
Regulatory Program Requiring Well \_\_\_\_\_ DATE WELL COMPLETED 1/17/03  
Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 732/536-1376

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.  
Borehole diameter:  
Top 14 in.  
Bottom 14 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface \_\_\_\_\_ ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling 6 ft.

Water level was measured using probe

Well was developed for 1 hours at 1 gpm

Method of development pump & surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity \_\_\_\_\_ gpm

Pump type: \_\_\_\_\_

Drilling Fluid \_\_\_\_\_ Type of Rig B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company HANDEX CORP. / CHRIS O'SHAUGHNES

Well Driller (Print) Jeffrey Marchesi

Driller's Signature Jeff Marchesi

Registration No. MD512 Date 1/8/03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2	6	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	2	17	6	PVC	.010 Slot
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	1	17	14	sand	#1
Grout	0	1	14	Neat Cement Bentonite	92 lbs. / 5 lbs.

Grouting Method Gravity Displacement  
Drilling Method Hollow Stem Augers

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
<u>0-17' Brown fine to coarse sand, little silt, trace clay</u>	

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)	
NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
OR	
LATITUDE: _____	LONGITUDE: _____

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29 47843

Atlas Sheet Coordinates 29 13 669

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_

WELL LOCATION - If not the same as owner please give address. Owner's Well No. RW-4  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

DATE WELL STARTED 1/8/03  
DATE WELL COMPLETED 1/8/03  
TYPE OF WELL (as per Well Permit Categories) RECOVERY  
Regulatory Program Requiring Well \_\_\_\_\_ Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 232/536-1376

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.

Borehole diameter:  
Top 14 in.  
Bottom 14 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface \_\_\_\_\_ ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling 6 ft.

Water level was measured using probe

Well was developed for 1 hours  
at \_\_\_\_\_ gpm

Method of development pump + surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity \_\_\_\_\_ gpm

Pump type: \_\_\_\_\_

Drilling Fluid \_\_\_\_\_ Type of Rig B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company HANDEX CORP./CHRIS O'SHAUGHNES

Well Driller (Print) Jeffrey Marchesi

Driller's Signature Jeff Marchesi

Registration No. AD1512 Date 1/8/03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2	6	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	2	17	6	PVC	.010 Slot
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	1	17	14	sand	#1
Grout	0	1	14	Neat Cement Bentonite	94 lbs. 5 lbs.

Grouting Method Gravity Displacement  
Drilling Method Hollow Stem Augers

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
0-17'	Brown fine to coarse sand, little silt, trace clay.

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)	
NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
OR	
LATITUDE: _____	LONGITUDE: _____

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29 47844

Atlas Sheet Coordinates 29 13 66

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_

WELL LOCATION - If not the same as owner please give address. Owner's Well No. RW-5  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

TYPE OF WELL (as per Well Permit Categories) RECOVERY DATE WELL STARTED 1/9/03  
Regulatory Program Requiring Well \_\_\_\_\_ DATE WELL COMPLETED 1/10/03  
Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 732/536-1376

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.

Borehole diameter:  
Top 14 in.  
Bottom 14 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface \_\_\_\_\_ ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling 6 ft.

Water level was measured using probe

Well was developed for 1 hours  
at \_\_\_\_\_ gpm

Method of development pump + surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity \_\_\_\_\_ gpm

Pump type: \_\_\_\_\_

Drilling Fluid \_\_\_\_\_ Type of Rig B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company HANDEX CORP./CHRIS O'SHAUGHNES

Well Driller (Print) Jeffrey Marchesi

Driller's Signature Jeffrey Marchesi

Registration No. MD1512 Date 1, 8, 03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2	6	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	2	17	6	PVC	00 Slot
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	1	17	14	sand	#1
Grout	0	1	14	Neat Cement Bentonite	97 lbs. / 5 lbs.

Grouting Method Gravity Displacement  
Drilling Method Hollow Stem Augers

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
0-17'	Brown fine to coarse sand, little silt, trace clay

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)	
NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
OR	
LATITUDE: _____	LONGITUDE: _____

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29 47845

Atlas Sheet Coordinates 29 13 669

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_

WELL LOCATION - If not the same as owner please give address. Owner's Well No. RW-6  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

TYPE OF WELL (as per Well Permit Categories) RECOVERY DATE WELL STARTED 1/98/03  
Regulatory Program Requiring Well \_\_\_\_\_ DATE WELL COMPLETED 1/98/03  
Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 732/536-1376

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.  
Borehole diameter:  
Top 14 in.  
Bottom 14 in.  
Well was finished:  above grade  
 flush mounted  
If finished above grade, casing height (stick up) above land surface \_\_\_\_\_ ft.  
Was steel protective casing installed?  
 Yes  No  
Static water level after drilling 6 ft.  
Water level was measured using probe  
Well was developed for 1 hours at 1 gpm

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2	6	PVC	sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	2	17	6	PVC	.010 slot
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	1	17	14	sand	#1
Grout	0	1	14	Neat Cement Bentonite	94 lbs. 5 lbs.

Method of development pump + surge  
Was permanent pumping equipment installed?  Yes  No  
Pump capacity \_\_\_\_\_ gpm  
Pump type: \_\_\_\_\_  
Drilling Fluid \_\_\_\_\_ Type of Rig B-59  
Health and Safety Plan submitted?  Yes  No  
Level of Protection used on site (circle one) None (D) C B A

Grouting Method Gravity Displacement  
Drilling Method Hollow Stem Augers

**GEOLOGIC LOG**

Note each depth where water was encountered in consolidated formations.

0-17' Brown fine to coarse sand, little silt, trace clay

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company HANDEX CORP./CHRIS O'SHAUGHNES  
Well Driller (Print) Jeffrey Marchesi  
Driller's Signature Jeffrey Marchesi  
Registration No. MD1512 Date 1/8/03

Empty geologic log table with header 'GEOLOGIC LOG' and instructions.

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)  
NJ STATE PLANE COORDINATE IN US SURVEY FEET  
NORTHING: \_\_\_\_\_ EASTING: \_\_\_\_\_  
LATITUDE: \_\_\_\_\_ OR \_\_\_\_\_ LONGITUDE: \_\_\_\_\_

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29 47846

Atlas Sheet Coordinates 29 13 6

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_

WELL LOCATION - If not the same as owner please give address. Owner's Well No. RW-7  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

DATE WELL STARTED 1/8/03  
DATE WELL COMPLETED 1/8/03  
TYPE OF WELL (as per Well Permit Categories) RECOVERY  
Regulatory Program Requiring Well \_\_\_\_\_ Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 732/536-737

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.

Borehole diameter: 14 in.  
Top \_\_\_\_\_ in.  
Bottom 14 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface \_\_\_\_\_ ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling 6 ft.

Water level was measured using probe

Well was developed for 1 hours at 1 gpm

Method of development pump + surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity \_\_\_\_\_ gpm

Pump type: \_\_\_\_\_

Drilling Fluid \_\_\_\_\_ Type of Rig B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company HANDEX CORP. / CHRIS O'SHAUGHNESS

Well Driller (Print) Jeffrey Marchesi

Driller's Signature Jeff Marchesi

Registration No. AD1512 Date 1/8/03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2	6	PVC	Sch 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	2	17	6	PVC	.010 Slot
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	1	17	14	sand	#1
Grout	0	1	14	Neat Cement Bentonite	94 lbs. 5 lbs.

Grouting Method Gravity Displacement  
Drilling Method Hollow Stem Augers

GEOLOGIC LOG
Note each depth where water was encountered in consolidated formations.
<u>0-17' Brown fine to coarse sand, little silt, trace clay.</u>

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET
NORTHING: _____ EASTING: _____
LATITUDE: _____ OR _____ LONGITUDE: _____

New Jersey Department of Environmental Protection  
Bureau of Water Allocation  
**MONITORING WELL RECORD**

Well Permit No. 29-47847

Atlas Sheet Coordinates 29 13 669

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH DPW  
Address BUILDING 173  
City FORT MONMOUTH State NJ Zip Code \_\_\_\_\_

WELL LOCATION - If not the same as owner please give address. Owner's Well No. RW-8  
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A  
Address BUILDING 886 MURPHY DR

TYPE OF WELL (as per Well Permit Categories) RECOVERY DATE WELL STARTED 1/08/03  
Regulatory Program Requiring Well \_\_\_\_\_ DATE WELL COMPLETED 1/10/03  
Case I.D.# \_\_\_\_\_

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 732/536-1326

**WELL CONSTRUCTION**

Total depth drilled 17 ft.  
Well finished to 17 ft.

Borehole diameter:  
Top 14 in.  
Bottom 14 in.

Well was finished:  above grade  
 flush mounted

If finished above grade, casing height (stick up) above land surface \_\_\_\_\_ ft.

Was steel protective casing installed?  
 Yes  No

Static water level after drilling 6 ft.

Water level was measured using probe

Well was developed for 1 hours  
at 1 gpm

Method of development pump & surge

Was permanent pumping equipment installed?  Yes  No

Pump capacity \_\_\_\_\_ gpm

Pump type: \_\_\_\_\_

Drilling Fluid \_\_\_\_\_ Type of Rig B-59

Health and Safety Plan submitted?  Yes  No

Level of Protection used on site (circle one) None (D) C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company HANDEX CORP./CHRIS O'SHAUGHNES

Well Driller (Print) Jeffrey Marchesi

Driller's Signature Jeff Marchesi

Registration No. MD1512 Date 1/8/03

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0	2	6	PVC	SCH 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used )	2	17	6	PVC	.010 Slot
Blank Casings (No. Used )					
Tail Piece					
Gravel Pack	1	17	14	sand	#1
Grout	0	1	14	Neat Cement Bentonite	99 lbs. 5 lbs.

Grouting Method Gravity Displacement  
Drilling Method Hollow Stem Augers

GEOLOGIC LOG	
Note each depth where water was encountered in consolidated formations.	
0-17'	Brown fine to coarse sand little silt, trace clay

AS-BUILT WELL LOCATION (NAD 83 HORIZONTAL DATUM)	
NJ STATE PLANE COORDINATE IN US SURVEY FEET	
NORTHING: _____	EASTING: _____
LATITUDE: _____	OR " LONGITUDE: _____

STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
TRENTON, NJ

2947835  
THRU  
2947839

MONITORING WELL PERMIT

Permit No. \_\_\_\_\_

VALID ONLY AFTER APPROVAL BY THE D.E.P.

Mail To:

NJDEP  
BUREAU OF WATER ALLOCATION  
PO BOX 426  
TRENTON, NJ 08625-0426

COORD #: 29.13.669

Owner US Army Fort Monmouth, DPW  
Address Building 173  
Fort Monmouth, NJ 07703

Driller Handex of New Jersey  
Address 703 Ginesi Drive  
Morganville, NJ 07751

Name of Facility US Army Fort Monmouth  
Address Building 586 Murphy Drive  
Fort Monmouth, NJ 07702

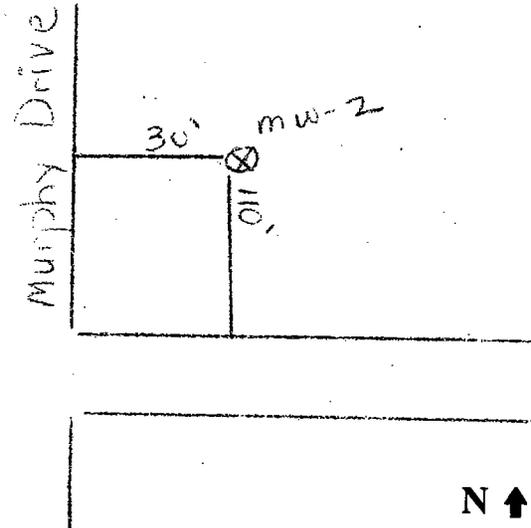
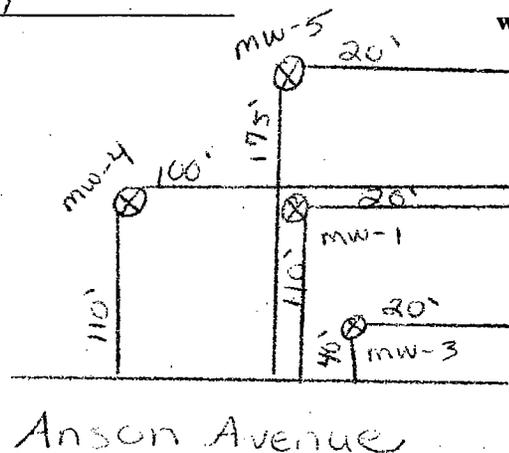
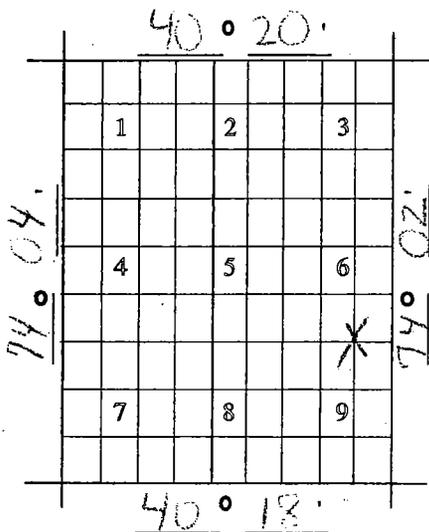
Diameter of Well(s) <u>4</u> Inches	Proposed Depth of Well(s) <u>20</u> Feet
# of Wells Applied for (max. 10) <u>5</u>	Will pumping equipment be utilized? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Type of Well (see reverse) <u>Monitoring</u>	If Yes, give pump capacity _____ cumulative GPM

LOCATION OF WELL(S)

Lot # <u>N/A</u>	Block # <u>N/A</u>	Municipality <u>Fort Monmouth</u>	County <u>Monmouth</u>
------------------	--------------------	-----------------------------------	------------------------

State Atlas Map No. 29

Draw sketch of well(s) nearest roads, buildings, etc. with marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch.

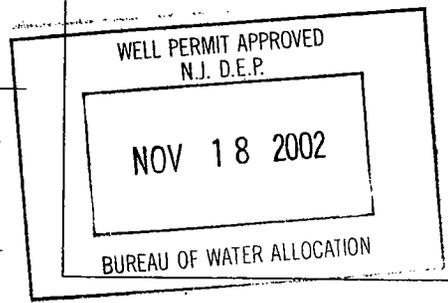


FOR MONITORING WELLS, RECOVERY WELLS, OR PIEZOMETERS, THE FOLLOWING MUST BE COMPLETED BY THE APPLICANT. PLEASE INDICATE WHY THE WELLS ARE BEING INSTALLED:

- Spill Site
- ISRA Site
- CERCLA (Superfund) Site
- RCRA Site
- Underground Storage Tank Site
- Operational Ground Water Permit Site
- Pretreatment and Residuals Site
- Water and Hazardous Waste Enforcement Case
- Water Supply Aquifer Test Observation Well
- Other (explain) \_\_\_\_\_

CASE I.D. Number \_\_\_\_\_

This Space for Approval Stamp



FOR D.E.P. USE  Issuance of this permit is subject to the conditions attached. (see next page)  
 For monitoring purposes only

The well(s) may not be completed with more than 25 feet of total screen or uncased borehole.

SEE REVERSE SIDE FOR IMPORTANT PROVISIONS PERTAINING TO THIS PERMIT.  
In compliance with N.J.S.A. 58:4A-14, application is made for a permit to drill a well as described above.

Date 11/1/02

Signature of Driller [Signature]

Registration No. 2947839

Signature of Property Owner [Signature]

STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
TRENTON, NJ

2947840  
Thru  
2947841

MONITORING WELL PERMIT

Permit No. \_\_\_\_\_

Mail To:

NJDEP  
BUREAU OF WATER ALLOCATION  
PO BOX 426  
TRENTON, NJ 08625-0426

VALID ONLY AFTER APPROVAL BY THE D.E.P.

COORD #: 29.13.669

Owner US Army Fort Monmouth DPW

Driller Hander of New Jersey

Address Building 173  
Fort Monmouth, NJ 07703

Address 703 Ginesi Drive  
Morganville, NJ 07751

Name of Facility U.S. Army Fort Monmouth

Diameter of Well(s)	6	Inches	Proposed Depth of Well(s)	20	Feet
# of Wells	8		Will pumping equipment be utilized?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Applied for (max. 10)	8		If Yes, give pump capacity	< 1	cumulative GPM
Type of Well (see reverse)	Recovery				

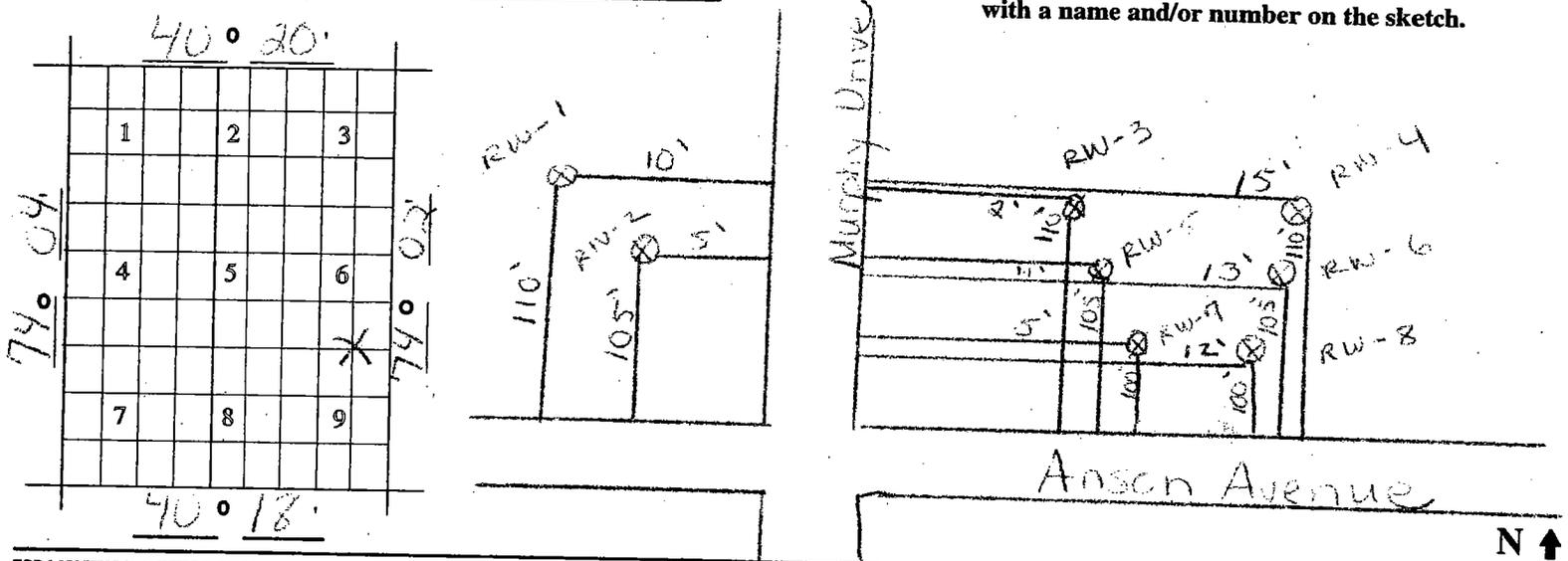
Address Building 816 Murphy Drive  
Fort Monmouth, NJ 07703

LOCATION OF WELL(S)

Lot #	Block #	Municipality	County
N/A	N/A	Fort Monmouth	Monmouth

State Atlas Map No. 29

Draw sketch of well(s) nearest roads, buildings, etc. with marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch.



FOR MONITORING WELLS, RECOVERY WELLS, OR PIEZOMETERS, THE FOLLOWING MUST BE COMPLETED BY THE APPLICANT. PLEASE INDICATE WHY THE WELLS ARE BEING INSTALLED:

- Spill Site
- ISRA Site
- CERCLA (Superfund) Site
- RCRA Site
- Underground Storage Tank Site
- Operational Ground Water Permit Site
- Pretreatment and Residuals Site
- Water and Hazardous Waste Enforcement Case
- Water Supply Aquifer Test Observation Well
- Other (explain) \_\_\_\_\_

CASE ID. Number \_\_\_\_\_

This Space for Approval Stamp

WELL PERMIT APPROVED  
N.J. D.E.P.  
NOV 18 2002  
BUREAU OF WATER ALLOCATION

FOR D.E.P. USE  Issuance of this permit is subject to the conditions attached. (see next page)  
 For monitoring purposes only

The well(s) may not be completed with more than 25 feet of total screen or uncased borehole.

SEE REVERSE SIDE FOR IMPORTANT PROVISIONS PERTAINING TO THIS PERMIT. In compliance with N.J.S.A. 58:4A-14, application is made for a permit to drill a well as described above.

Date 11/1/02

Signature of Driller \_\_\_\_\_

Registration No. 3019

Signature of Property Owner \_\_\_\_\_







**DRILLING/MASON**

Work Date: 1-7-03 YR      ORG      # 59028

Work Day: Tue

# of per ft. sheets attached [      ]

Contract 89450  
 Handex Task Code 000  
 Client Code U3075  
900

Client: FT. MONMOUTH

Coded By: [Signature]

Address: RT. 35

Entered By: [Signature]

Mileage:      Town: FORT MONMOUTH State: N.J.

Full Name (Last Name First) Initial	Emp. Code	Bill Code	Labor Class	AM Prep Time	PM												Travel Time	Total Hours							
					6	7	8	9	10	11	12	1	2	3	4	5			6	7	8	9			
O'SHEA, W	10175		D	2			X					L			X								1	10.5	
MARICCHI	10679		D	2			X					L				X								1	10.5
BROPHY	10689		H	2			X					L				X								1	10.5
BARICCHI	1206		H	2			X					L				X								1	10.5
RASTULLA	1234		H	2			X					L				X								1	10.5

Item	Item#	Hours
Multipurpose Rig	EV74050	
Heavy Duty Auger	EV74059	8.5
Light Duty Auger	EV74040	
Portable Drill Equip.	EQ74070	
Support Truck (Single Ax)	EV78050	
Support Truck (Tandem)	EV78060	8.5
Pickup Truck	EV78040	
Pressure Washer	EQ74019	
Grout Mixer	EQ74087	
Jackhammer	EQ72180	
Air Compressor 185 CFM	EQ72061	
Generator 5K	EQ50393	

**Geoprobe**

Geo/Earth probe, w/tools & supplies (HR)	EV74056	
Geo/Earth probe, w/tools & supplies (DY)	EV74051	
Geo/Earth probe, >50 miles, Mob/Demob (Mi)	EV81373	

Other Equipment & Materials:     

Drilling Materials	Item#	Quantity	U.O.M.
PVC 3/4" x 5' Casing (Th)	DR1840075		Ea.
PVC 2" x 10' Casing (Th)	DR1740200		Ea.
PVC 4" x 10' Casing (Th)	DR1740400		Ea.
PVC 6" x 10' Casing (Th)	DR1740600		Ea.
PVC 3/4" x 5' Screen (Th)	DR7240075		Ea.
PVC 2" x 10' Screen (Th)	DR7140200		Ea.
PVC 4" x 10' Screen (Th)	DR7140400		Ea.
PVC 2" x 5' Screen (Th)	DR7240200		Ea.
PVC 4" x 5' Screen (Th)	DR7240400		Ea.
PVC Gloves	AL3940000		Pr.
3/4" Cap (Slip)	PL1340075		Ea.
2" Gripper Plug (locking)	AL4040200		Ea.
2" Gripper Plug (non-locking)	AL4140200		Ea.
4" Gripper Plug (locking)	AL4140400		Ea.
4" Gripper Plug (non-locking)	AL4140400		Ea.
2" Well Bottom/Cone	DR9440200		Slip
2" Well Bottom/Cone	DR9440400		Slip
Padlock	DR4331003		Ea.
Well Gravel	DR2850000	59	Bag
Plastic Sheeting (6ml)	AL4337000		Roll
Bentonite, Hole plug (bag)	DR2811000		Bag
Manhole 10" Bolted	DR5118M10		Ea.
Manhole 10" Plain	DR5016M10		Ea.
Manhole 9" Bolted	DR5116M09		Ea.
Cement (Portland)	DR2838000		Bag
Cement (Sulphate)	CN2819000		Bag
Blacktop	AL2813000		Bag
Safety Cone	AL7040000	3	Ea.

**Work Descriptions:**  
 Drilled and installed 3 Recovery/Monitoring Wells  
 Drilled and sampled      Soil/Test Borings  
 Drilling Complete: Yes/No Yes Split Spoons: NO  
 Manholes Complete: Yes/No NO  
 Method of Drilling: 10 1/4" HSA

Cuttings left on site for Disposal: Yes/No      Cubic Yds.  
 Per Diem Charges: Yes/No NO # of Employees (98000)  
 Subcontractors Used: Yes/No NO Name:     

**Detailed Descriptions:**  
Clear 5 Holes with UAC-A-Dig for Per. Dam Protocol  
Drill 3 6" PVC Recovery Wells to 17'

**BILLING INFORMATION**

UP Task Name	U.O.M.	Quant.	Bill Code	UP Task Name	U.O.M.	Quant.	Bill code
Mob/Demob	ea	1	9999	Well Abandonment 2" Dia Well	ft.	1	91143



**BILLING/MASON**

# 59029

Contract # 043075900  
 Handex Task Code  
 Client Code

Work Date: 1/8/03  
 Work Day: WEDNESDAY  
 Client: FORT MONMOUTH  
 Address: RT 35  
 Town: EATONTOWN State: NJ

YR \_\_\_\_\_ ORG \_\_\_\_\_ # \_\_\_\_\_  
 # of per ft. sheets attached [ ]  
 Coded By: \_\_\_\_\_  
 Entered By: \_\_\_\_\_

Emp. Name (Last Name First) Initial	Emp. Code	Bill Code	Labor Class	AM Prep Time	Date												Travel Time	Total Hours				
					6	7	8	9	10	11	12	1	2	3	4	5			6	7	8	9
MARCHESI J			D	1/2		X															1	10 1/2
BROPHY S			L	1/2		X															1	10 1/2
BAKASZI J			L	1/2		X															1	10 1/2
PARTILO E			L			X															1	10

Item	Item#	Hours
Multipurpose Rig	EV74050	
Heavy Duty Auger	EV74059	<u>10</u>
Light Duty Auger	EV74040	
Portable Drill Equip.	EQ74070	
Support Truck (Single Ax)	EV78050	<u>10</u>
Support Truck (Tandem)	EV78060	
Pickup Truck	EV78040	
Pressure Washer	EQ74019	
Grout Mixer	EQ74087	
Jackhammer	EQ72180	
Air Compressor 185 CFM	EQ72061	
Generator 5K	EQ50393	

Drilling Materials	Item#	Quantity	U.O.M.
PVC 3/4" x 5' Casing (Th)	DR1840075		Ea.
PVC 2" x 10' Casing (Th)	DR1740200		Ea.
PVC 4" x 10' Casing (Th)	DR1740400	<u>5</u> ✓	Ea.
PVC 6" x 10' Casing (Th)	DR1740600		Ea.
PVC 3/4" x 5' Screen (Th)	DR7240075		Ea.
PVC 2" x 10' Screen (Th)	DR7140200		Ea.
PVC 4" x 10' Screen (Th)	DR7140400	<u>5</u> ✓	Ea.
PVC 2" x 5' Screen (Th)	DR7240200		Ea.
PVC 4" x 5' Screen (Th)	DR7240400	<u>5</u> ✓	Ea.
PVC Gloves	AL3940000		Pr.
3/4" Cap (Slip)	PL1340075		Ea.
2" Gripper Plug (locking)	AL4040200		Ea.
2" Gripper Plug (non-locking)	AL4140200		Ea.
4" Gripper Plug (locking)	AL4140400	<u>5</u> ✓	Ea.
4" Gripper Plug (non-locking)	AL4140400		Ea.
2" Well Bottom/Cone	DR9440200		Slip
4" Well Bottom/Cone	DR9440400	<u>5</u> ✓	Slip
Padlock	DR4331003		Ea.
Well Gravel	DR2850000	<u>60</u> ✓	Bag
Plastic Sheeting (6ml)	AL4337000		Roll
Bentonite, Hole plug (bag)	DR2811000	<u>5</u> ✓	Bag
Manhole 10" Bolted	DR5118M10		Ea.
Manhole 10" Plain	DR5016M10		Ea.
Manhole 9" Bolted	DR5116M09	<u>1</u> ✓	Ea.
Cement (Portland)	DR2838000		Bag
Cement (Sakrete)	CN2819000	<u>2</u> ✓	Bag
Blacktop	AL2813000		Bag
Safety Cone	AL7040000		Ea.

**Geoprobe**  
 Geo/Earth probe, w/tools & supplies (HR) EV74056 \_\_\_\_\_  
 Geo/Earth probe, w/tools & supplies (DY) EV74051 \_\_\_\_\_  
 Geo/Earth probe, >50 miles, Mob/Demob (MI) EV81373 \_\_\_\_\_

**Other Equipment & Materials:** VAC & DIG 10HRS

**Work Descriptions:**  
 Drilled and installed 5 Recovery/Monitoring Wells  
 Drilled and sampled 0 Soil/Test Borings  
 Drilling Complete: Yes/No Split Spoons: 0  
 Manholes Complete: Yes/No  
 Method of Drilling: Howell stem AUGER

Cuttings left on site for Disposal: Yes/No 5 Cubic Yds.  
 Per Diem Charges: Yes/No # of Employees (98000)  
 Subcontractors Used: Yes/No Name: \_\_\_\_\_

Level of Protection: C Employee No. Hours  
 \_\_\_\_\_  
 \_\_\_\_\_

Detailed Descriptions:  
DRILLED & INSTALLED 5 (4") MONITOR WELLS NO SAMPLES - 1 MANHOLE -

**BILLING INFORMATION**

UP Task Name	U.O.M.	Quant.	Bill Code	UP Task Name	U.O.M.	Quant.	Bill code
Mob/Demob	ea.	<u>2</u>	90000	Well Abandonment 2" Dia Well	ft.	<u>2</u>	91143
Mileage	ml.	<u>-</u>	90010	Well Abandonment 4" Dia Well	ft.	<u>-</u>	91144
Drilling		<u>-</u>		Manholes Completed	ea	<u>1</u>	94000



















**TIME & MATERIAL - INSTALLATION**

Handex Project String

125100 000 UB075 9000

Loc Code: Contract Code: Handex Task Code: Client Code:

Mileage: 8945.1

Work Date: 12/3/03  
Work Day: Thursday

YR: \_\_\_\_\_ ORG: \_\_\_\_\_ # 145568

Client: Fort Monmouth  
Address: BUILDING 886  
TOWN: ERIE MONTGOMERY NJ  
State: NJ  
Hydro: CHUSS

ORDER: \_\_\_\_\_  
CODED BY: \_\_\_\_\_  
ENTERED BY: \_\_\_\_\_

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	AM Prep. Time	5 A M	6	7	8	9	10	11	12 P M	1	2	3	4	5	6	7	8	9	Travel	Total			
																								PM		
BARLAS 21 J	1306	F2309L	Oper	1.5																				1	10.5	
BARLAS 21 J	1234	F3314L	Tech	1.5																					1	10.5
D' DENENIC 1	1633	F3314L	Tech	.5																					1	10.5
		F1815L	Labor																							

"X" - Denotes Start/Finish Time on Job Site

"O" - Denotes Time and Return to Shop

Per Diem Charges: YES / NO - If YES, Number of Employees: \_\_\_\_\_ (98000)

Subcontractors Used: YES / NO (1) \_\_\_\_\_ (2) \_\_\_\_\_  
 • Bill From: TM/PO Work  
 • Attach receipts: \_\_\_\_\_ per ft.

Level of Protection: C D Hours: \_\_\_\_\_ ea. Empl. # \_\_\_\_\_  
 Accounting Bill Code \_\_\_\_\_ Empl. # \_\_\_\_\_  
 Resp. Cart. [MS703.100] ea. \_\_\_\_\_ Tyvek [AL7054000] ea. \_\_\_\_\_ Boots [ER705300] pr. \_\_\_\_\_ Gloves, Nitrile [AL3832000] pr. \_\_\_\_\_

Submit Equipment and Parts Sheets with FINAL Location T&M  
 Equipment Installed: YES / NO CONTROL NUMBER: \_\_\_\_\_  
 Part Sheet Completed: YES / NO CONTROL NUMBER: \_\_\_\_\_

Carbon Change: Chipping/Chemicals used \_\_\_\_\_ yes \_\_\_\_\_ no \_\_\_\_\_  
 Vessel Size (ea) Total Mileage (round trip) \_\_\_\_\_ / Excess of 50 ml \_\_\_\_\_ (91808)  
 Total Pounds of Carbon \_\_\_\_\_ Liquid/Vapor (circle one)

Work Performed: SET form WITH wire mesh - And level off. DEFROST SOIL FOR BACKFILL PARTIAL BACKFILL ISLAND SECTION. PAPER WORK

Dated: 1.24.03 Checked by \_\_\_\_\_

Handex Project String  
 Handex Task Code  
 Client Code  
 Contract Code  
 Loc Code  
 Mileage

Number	Operating Equipment Used Today	Hours Used	Item #
	Mobile (Box) Shop [EV72530]		
	Dump Truck 2 yd. [EV72500]		
	Dump Truck 5 yd. [EV72510]		
	Dump Truck 18 yd. (Tandem) [EV72520]	7:3	
	Pickup Truck [EV78040]		
	Boom Truck (mounted crane) [EV73030]	8:5	
	Back Hoe [EQ72120]		
	Trailer, Lowboy [EV72490]		
	Air Compressor (150/188 CFM) [EQ72070]		
	Concrete Cutting Saw [EQ72460]		
	Hand Held Cutting Saw [EQ72470]		
	Hand Held Cutting Saw Blades [EQ72450]		
	Jackhammer (Pavement Breaker) [EQ72180]		
	OVA Meter [EQ80320]		
	HNU/PID Meter [EQ80372]		
	Gas Chromatograph Meter (DY) [EQ80693]		

Full Description (Incl. Type of Mat.)







VW  
PW

6320

900

Work Date: 1-29-03 YR ORG #

Work Day: Wednesday

Coded By: [Signature]

Client: Fort Monmouth

Entered By: [Signature]

Address: Building 886

Town: Eatontown State: NJ

Org. I.D. Hydro:

1451  
UP: X Worksheet:

First	Emp. Code	Bill Code	Labor Class	Prep Time	AM										PM										Travel	Total	
					5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10					
AGUIRO T	10019	F0616L	Electr.	2				X	X																		
		F0616L	Electr.																								
		F3314L	Tech.																								
		F3314L	Tech.																								
		F1200L	Foreman																								

PLUMBING PARTS						ELECTRICAL PARTS					
1" Qty	Code	2" Qty	Code	3" Qty	Code	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
PVC Ball Valve	PL8540100		PL8540200		PL8540300	PVC 90° Sweep	EL7840075		EL7840100		EL7840200
Brass Ball Valve	PL8514100		PL8514200		PL8514300	PVC 45° Sweep	EL7740075		EL7740100		EL7740200
PVC Pipe (sch. 40)	PL5940100		PL5940200		PL5940300	PVC Male Term. Adapter	EL0340075		EL0340100		EL0340200
PVC 90° Elbow	PL3140100		PL3140200		PL3140300	PVC Fem. Term. Adapter	EL0240075		EL0240100		EL0240200
PVC Tee (sch. 40)	PL8140100		PL8140200		PL8140300	PVC Elec. Coupling	EL2440075		EL2440100		EL2440200
PVC Male Adapter	PL0340100		PL0340200		PL0340300	PVC LB Box	EL0740075		EL0740100		EL0740200
PVC Fem. Adapter	PL0240100		PL0240200		PL0240300	Sealing Y (EXP)	EL7343075		EL7343100		EL7343200
PVC Coupling	PL2440100		PL2440200		PL2440300	Elec. Adpt. Straight (LT)	EL0328075		EL0328100		EL0328200
PVC Union	PL8440150		PL844020S		PL8440300	Flex. Conduit (LT)	EL2328075		EL2328100		EL2328200

MISCELLANEOUS MATERIALS						PUMP PARTS					
Qty	Code		Qty	Code		Qty	Code		Qty	Code	
10-3 SO Cord. (ft.)	EL9720W31	Warrick Relay #27AIEO		EL6831005	CH&E Diaphragm		MS6231001				
12-3 SO Cord. (ft.)	EL9720W33	Warrick Relay #27BIEO		EL6831007	CH&E Flap		MS6231002				
14-3 SO Cord. (ft.)	EL9720W35	Warrick Relay #67 Series		EL6831008	Aro Pump O-ring Kit #637118C		MS6231004				
#16 Wire Thhn (ft.)	EL9820W16	Time Delay Relay ATC 339		EL6831004							
#14 Wire Thhn (ft.)	EL9820W14	Flip Flop Timer ATC 115V		EL4331004							

( )	( )	( )	( )	( )
( )	( )	( )	( )	( )
( )	( )	( )	( )	( )
( )	( )	( )	( )	( )
( )	( )	( )	( )	( )

Comments: Work on & prep parts for shed power.

Authorization: 44. KP Date: 1/31/03



















**ELECTRICAL (Northeast Form)**

02

PW

Contract: 0000000000  
 Handex Task Code: U3075  
 Client Code: 900  
 Unit Price Code: 89954  
 Bill: TM:      UP: X Worksheet:     

YR: 2-5-03 ORG:      # 6329  
 Work Date: 2-5-03  
 Work Day: Wednesday  
 Client: Fort Monmouth  
 Address: Building 886  
 Town: Eatontown State: NJ  
 Org. I.D.:      Hydro:     

Coded By: [Signature]  
 Entered By: [Signature]

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep Time	AM										PM										Travel	Total		
					5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10						
Y.S. AGUIROL	10019	F0616L	Electr.									X	L														1	5 1/2
Y.S. MAGLEY	1629	F0616L	Electr.	1 1/2								X	U														1	7
		F3314L	Tech.										N															
		F3314L	Tech.										C															
		F1200L	Foreman										H															

PLUMBING PARTS					ELECTRICAL PARTS						
1" Qty	Code	2" Qty	Code	3" Qty	Code	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
	PL8540100		PL8540200		PL8540300		EL7840075		EL7840100		EL7840200
	PL8514100		PL8514200		PL8514300		EL7740075		EL7740100		EL7740200
	PL5940100		PL5940200		PL5940300		EL0340075		EL0340100		EL0340200
	PL3140100		PL3140200		PL3140300		EL0240075		EL0240100		EL0240200
	PL8140100		PL8140200		PL8140300		EL2440075		EL2440100		EL2440200
	PL0340100		PL0340200		PL0340300		EL0740075		EL0740100		EL0740200
	PL0240100		PL0240200		PL0240300		EL7343075		EL7343100		EL7343200
	PL2440100		PL2440200		PL2440300		EL0328075		EL0328100		EL0328200
	PL8440150		PL844020S		PL8440300		EL2328075		EL2328100		EL2328200

MISCELLANEOUS MATERIALS				PUMP PARTS			
Qty	Code			Qty	Code		
	EL9720W31	Warrick Relay #27AIEO			EL6831005	CH&E Diaphragm	
	EL9720W33	Warrick Relay #27BIEO			EL6831007		MS6231001

Comments: Core through building, complete conduit, pull wires to sub panel, wire breaker in panel, attach wires in sub panel.

ELECTRICAL (Northeast Form)

02

Handex Task Code: 3075  
Client Code: 909

070

6341

YR \_\_\_\_\_ ORG \_\_\_\_\_ # \_\_\_\_\_  
 Work Date: 2-13-03  
 Work Day: THURSDAY  
 Client: Fort Monmouth  
 Address: Building 886  
 Town: Eatontown State: NJ  
 Org. I.D. \_\_\_\_\_ Hydro: \_\_\_\_\_

Coded By: [Signature]  
 Entered By: [Signature]

89454  
 UP: 2 Worksheet: \_\_\_\_\_

Name, First	Emp. Code	Bill Code	Labor Class	Prep Time	AM										PM										Travel	Total		
					5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10						
<u>AGUINA</u>	<u>10019</u>	F0616L	Electr.					X					U														1	8
		F0616L	Electr.										U															
		F3314L	Tech.										N															
		F3314L	Tech.										C															
		F1200L	Foreman										H															

PLUMBING PARTS

PLUMBING PARTS						ELECTRICAL PARTS					
1" Qty	Code	2" Qty	Code	3" Qty	Code	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
	PL8540100		PL8540200		PL8540300		PVC 90° Sweep		EL7840075		EL7840100
	PL8514200		PL8514200		PL8514300		PVC 45° Sweep		EL7740075		EL7740100
	PL5940100		PL5940200		PL5940300		PVC Male Term. Adapter		EL0340075		EL0340100
	PL3140100		PL3140200		PL3140300		PVC Fem. Term. Adapter		EL0240075		EL0240100
	PL8140100		PL8140200		PL8140300		PVC Elec. Coupling		EL2440075		EL2440100
	PL0340100		PL0340200		PL0340300		PVC LB Box		EL0740075		EL0740100
	PL0240100		PL0240200		PL0240300		Sealing Y (EXP)		EL7343075		EL7343100
	PL2440100		PL2440200		PL2440300		Elec. Adpt. Straight (LT)		EL0328075		EL0328100
	PL8440150		PL844020S		PL8440300		Flex. Conduit (LT)		EL2328075		EL2328100

MISCELLANEOUS MATERIALS

PUMP PARTS

Qty	Code		Qty	Code		Qty	Code
	EL9720W31	Warrick Relay #27AIEO		EL6831005			
	EL9720W33	Warrick Relay #27BIEO		EL6831007	CH&E Diaphragm		MS6231001
	EL9720W35	Warrick Relay #67 Series		EL6831008	CH&E Flap		MS6231002
	EL9820W16	Time Delay Relay ATC 339		EL6831004	Aro Pump O-ring Kit #637118C		MS6231004
	EL9820W14	Flip Flop Timer ATC 115V		EL4331004	Aro Pump Diaphragm #90533-2		MS6231000
	EL9820W12	220V Pole Relay (gen. Purp.)		EL6831001	Absorbent Pad (grade 100) (ea.)		ER0103000
	EL9820W10	8 Pin Octal Relay Base		EL6831002	Chico Seal (Sealing Comp.) (bg/bx)		EL7308000
	EL9820W08	Warrick Probe End #3W2		EL6831000			
	( )				( )		
	( )				( )		
	( )				( )		

Comments: Conduit work in shed

Authorization: \_\_\_\_\_ KP Date: 2/18/03

**ELECTRICAL (Northeast Form)**

*KW*

*(070)*

02

6342

Contract 03075 Handex Task Code 900 Client Code

YR. \_\_\_ ORG. #

Work Date: 2/14/03  
 Work Day: Friday  
 Client: Fort Monmouth  
 Address: Building #886  
 Town: Eaton State: NJ  
 Org. I.D. \_\_\_\_\_ Hydro: \_\_\_\_\_

Coded By: [Signature]  
 Entered By: [Signature]

Code: \_\_\_\_\_  
 e Code: 89454  
 UP:  Worksheet: \_\_\_\_\_

Name, First	Emp. Code	Bill Code	Labor Class	Prep Time	AM					PM					Travel	Total									
					5	6	7	8	9	10	11	12	1	2			3	4	5	6	7	-8	9	10	
		F0616L	Electr.									L													
<i>PTAGUNOT</i>	<i>10019</i>	F0616L	Electr.					X				<i>U</i>	<i>X</i>											1	6
<i>BARTASZI</i>	<i>1306</i>	F3314L	Tech.	<i>1 1/2</i>				X				<i>M</i>	<i>X</i>											1	7 1/2
		F3314L	Tech.									<i>C</i>													
		F1200L	Foreman									<i>H</i>													

**PLUMBING PARTS**

**ELECTRICAL PARTS**

	1" Qty	Code	2" Qty	Code	3" Qty	Code	3/4" Qty	Code	1" Qty	Code	2" Qty	Code	
PVC Ball Valve		PL8540100		PL8540200		PL8540300		PVC 90° Sweep		EL7840075		EL7840100	EL7840200
Brass Ball Valve		PL8514100		PL8514200		PL8514300		PVC 45° Sweep		EL7740075		EL7740100	EL7740200
PVC Pipe (sch. 40)		PL5940100		PL5940200		PL5940300		PVC Male Term. Adapter		EL0340075		EL0340100	EL0340200
PVC 90° Elbow		PL3140100		PL3140200		PL3140300		PVC Fem. Term. Adapter		EL0240075		EL0240100	EL0240200
PVC Tee (sch. 40)		PL8140100		PL8140200		PL8140300		PVC Elec. Coupling		EL2440075		EL2440100	EL2440200
PVC Male Adapter		PL0340100		PL0340200		PL0340300		PVC LB Box		EL0740075		EL0740100	EL0740200
PVC Fem. Adapter		PL0240100		PL0240200		PL0240300		Sealing Y (EXP)		EL7343075		EL7343100	EL7343200
PVC Coupling		PL2440100		PL2440200		PL2440300		Elec. Adpt. Straight (LT)		EL0328075		EL0328100	EL0328200
PVC Union		PL8440150		PL844020S		PL8440300		Flex. Conduit (LT)		EL2328075		EL2328100	EL2328200

**MISCELLANEOUS MATERIALS**

**PUMP PARTS**

Qty	Code		Qty	Code		Qty	Code
10-3 SO Cord. (ft.)	EL9720W31	Warrick Relay #27AIEO		EL6831005			
12-3 SO Cord. (ft.)	EL9720W33	Warrick Relay #27BIEO		EL6831007	CH&E Diaphragm		MS6231001
14-3 SO Cord. (ft.)	EL9720W35	Warrick Relay #67 Series		EL6831008	CH&E Flap		MS6231002
#16 Wire Thhn (ft.)	EL9820W16	Time Delay Relay ATC 339		EL6831004	Aro Pump O-ring Kit #637118C		MS6231004
#14 Wire Thhn (ft.)	EL9820W14	Flip Flop Timer ATC 115V		EL4331004	Aro Pump Diaphragm #90533-2		MS6231000
#12 Wire Thhn (ft.)	EL9820W12	220V Pole Relay (gen. Purp.)		EL6831001	Absorbent Pad (grade 100) (ea.)		
#10 Wire Thhn (ft.)	EL9820W10	8 Pin Octal Relay Base		EL6831002			
#8 Wire Thhn (ft.)							

Comments: System piping and wiring.





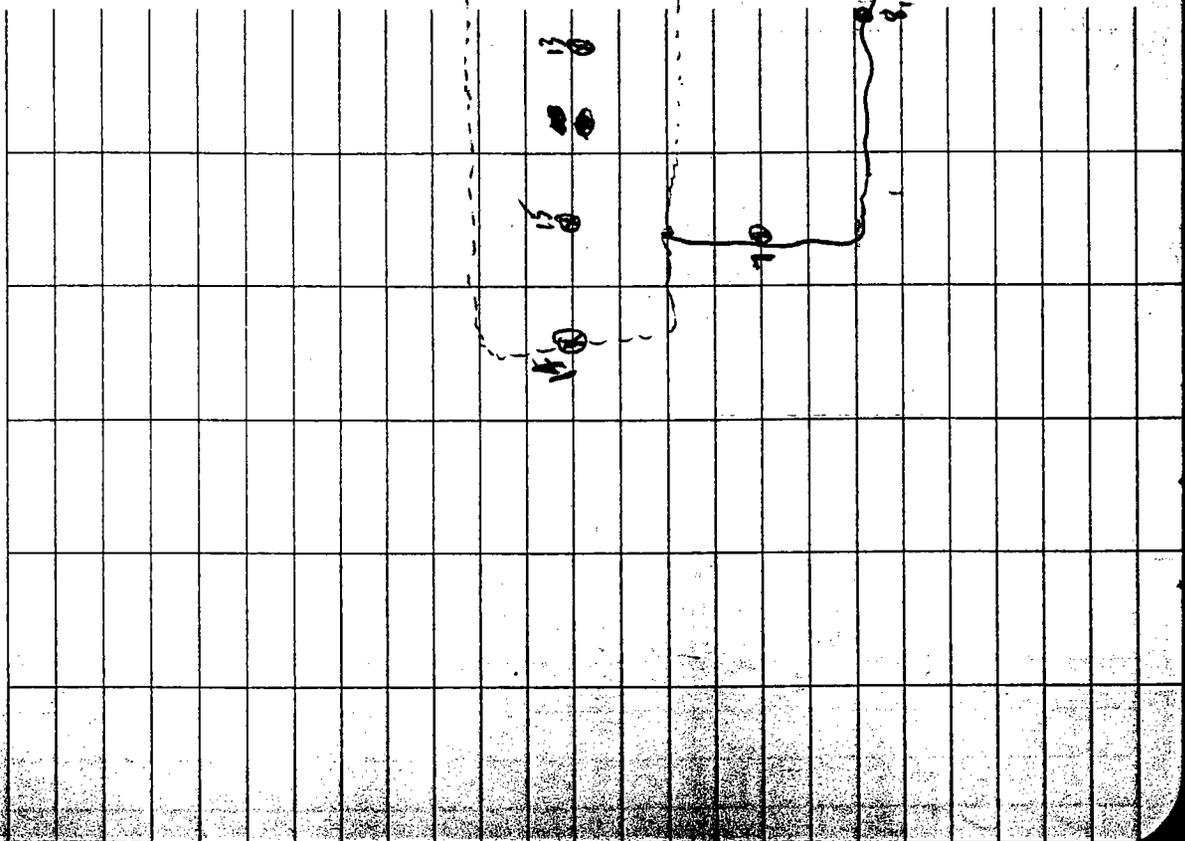




Location BLOK, 886 AS

Date \_\_\_\_\_

Project / Client \_\_\_\_\_

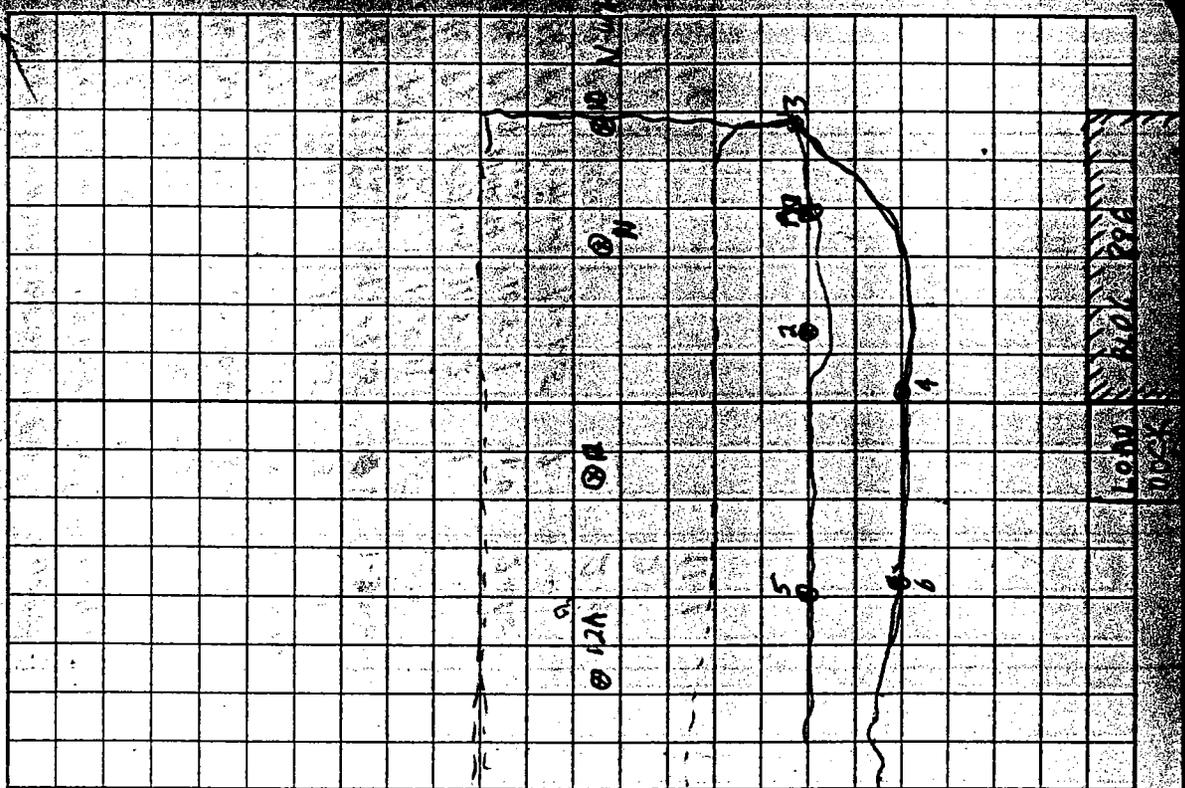


Location BLOK, 886 AS

Date \_\_\_\_\_

Project / Client \_\_\_\_\_

SCALE 1 IN = 20 FT.







**NAIK - PRASAD, Inc.**

Executive Plaza, 10 Parsonage Road, Suite 310 • Edison, NJ 08837 • 732/205-0540 • Fax 732/205-0544

**Date:** Monday, November 17, 2003

**To:** Christopher Snyder  
Versar, Inc.  
201 Gibraltar Road, Suite 100  
Horsham, Pa 19044

**Re:** Monitoring Well Location  
Fort Monmouth Military Base  
Eatontown, NJ

886

Survey

Documents

We are transmitting the following:

arate Cover

iger

:press

Copies	Description
13	Monitoring Well Certification Form B
1	Monitoring and Recovery Well Elevations

• **Comments:**

Thank you,  
**NAIK - PRASAD, Inc.**

Joseph A DiBuono, PLS

**MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION**

Name of Owner: U.S Army

Name of Facility: Fort Monmouth, Eatontown, NJ

Location: Site 886

Case Number(s): \_\_\_\_\_ (UST #, ISRA #, Incident #, or EPA #)

**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_  
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): MW-1

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 16.53" Latitude: North 40° 18' 37.50"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538324 East 620981

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.04

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

Station Eleven 2 (NAVD 88)

Significant observations and notes: Benchmark is located 66 feet west of the centerline of Ocean Avenue in Long Branch, 86 feet south of the southeast corner of the Coast Guard Station

**AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

  
SEAL  
\_\_\_\_\_  
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

11/13/03  
DATE

Joseph A. DiBuono, New Jersey License No. 36239  
PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER  
(Please print or type)

Naik-Prasad, Inc., 10 Parsonage Road, Edison, NJ 08837, 732-205-0540  
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

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**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_  
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): MW-2

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 17.22" Latitude: North 40° 18' 36.45"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538217 East 620928

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 13.99

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

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**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_  
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Owners Well Number (As shown on application or plans): MW-3

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 15.36" Latitude: North 40° 18' 37.28"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538302 East 621072

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.79

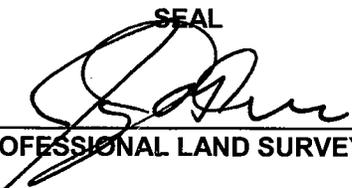
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**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_  
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): MW-4

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 15.00" Latitude: North 40° 18' 35.19"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538090 East 621100

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 19.31

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

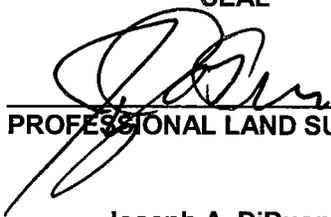
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Location: Site 886

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**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_

(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): MW-5

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 14.47" Latitude: North 40° 18' 36.79"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538253 East 621141

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 19.38

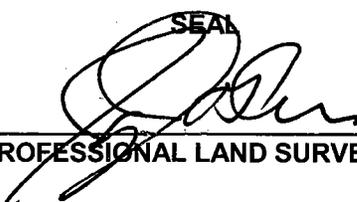
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Name of Owner: U.S Army

Name of Facility: Fort Monmouth, Eatontown, NJ

Location: Site 886

Case Number(s): \_\_\_\_\_ (UST #, ISRA #, Incident #, or EPA #)

**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_

(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): RW-1

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 16.65" Latitude: North 40° 18' 36.69"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538242 East 620972

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.71

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

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Name of Owner: U.S Army

Name of Facility: Fort Monmouth, Eatontown, NJ

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**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_  
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): RW-2

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 16.47" Latitude: North 40° 18' 36.78"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538251 East 620985

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.01

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

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**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_  
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Owners Well Number (As shown on application or plans): RW-3

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 16.31" Latitude: North 40° 18' 37.00"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538273 East 620998

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'):  
15.03

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)

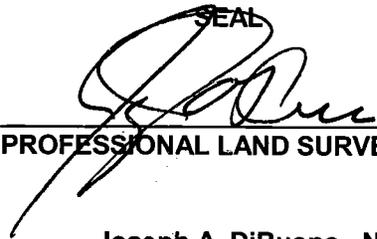
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**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_  
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): RW-4

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 16.41" Latitude: North 40° 18' 36.90"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538263 East 620990

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.89

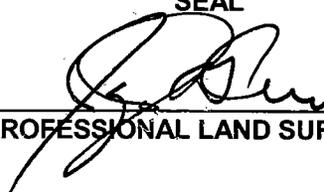
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**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_  
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): RW-5

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 16.47" Latitude: North 40° 18' 37.06"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538279 East 620985

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.80

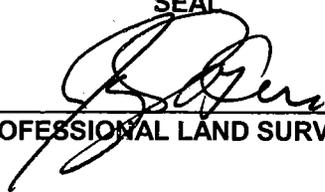
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**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_

(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): RW-6

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 15.57" Latitude: North 40° 18' 36.97"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538270 East 621055

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.25

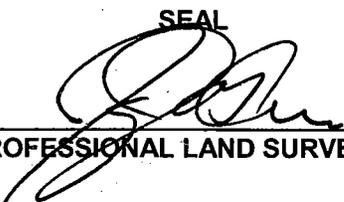
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Case Number(s): \_\_\_\_\_ (UST #, ISRA #, Incident #, or EPA #)

**LAND SURVEYOR'S CERTIFICATION**

Well Permit Number: \_\_\_\_\_  
(This number must be permanently affixed to the well casing.)

Owners Well Number (As shown on application or plans): RW-7

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 15.66" Latitude: North 40° 18' 36.79"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538252 East 621048

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.41

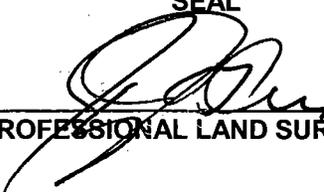
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Owners Well Number (As shown on application or plans): RW-8

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 15.78" Latitude: North 40° 18' 36.59"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 538231 East 621039

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.91

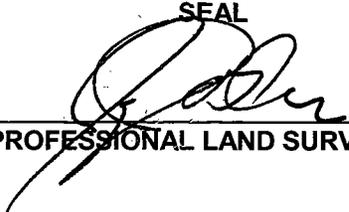
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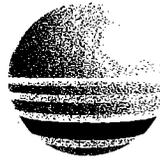
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PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER  
(Please print or type)

Naik-Prasad, Inc., 10 Parsonage Road, Edison, NJ 08837  
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

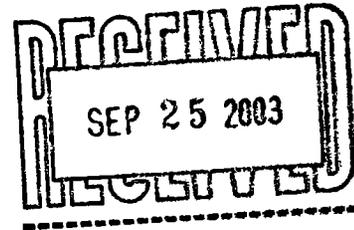


# HANDEX<sup>®</sup>

Practical Environmental Solutions

April 29, 2003

Mr. Douglas C. Guenther  
Environmental Protection Specialist  
U.S. Army, Directorate of Public Works  
Attn: SELFM-PW-EV, Bldg. 173  
Fort Monmouth, NJ 07703



RE: **Product Recovery System  
Building 886  
Fort Monmouth, NJ**

Dear Mr. Guenther,

Please find the attached O&M manual and as built site plan for the product recovery system located at building 886. Also included are the well records and well permits for the monitoring and recovery wells. Please contact me at 732-536-8667 ext. 337 with any questions you may have.

Sincerely,

Fred M. Howlett  
Associate Project Manager

Enclosure(s)

Cc: Handex – File Copy

**CEE** ◆**GNE/200/SOS****Down-well Controllerless Genie  
Product Only Recovery System****S P E C I F I C A T I O N S**

The GNE/200/SOS System is a controllerless Product Only Recovery System that removes free-floating hydrocarbon down to a sheen ( $\leq 0.01$  in.) from depths of 200 feet in wells as small as 2 inches in diameter. This system is upgradeable to include Tank-Full Shut-Off (see "System Options" for more information). The GNE/200/SOS System contains a Selective Oil Skimmer (SOS), a Genie controllerless, down-well, resilient bladder product pump (GNE), and a hose & hardware package.

**METHOD OF OPERATION**

The skimmer is located below the Genie Controllerless Pump. The skimmer has a floating intake head that follows the fluctuating water table.

Hydrocarbon first enters the Genie System through the floating intake's outer debris screen, then through an inner oleophilic hydrophobic screen, down through a flexible, yellow tube, up into the hollow guide tube, and into the Bladder Pump portion of the Genie.

The Genie Controllerless Pump draws product from the skimmer and pushes it to the surface. It cycles at a preset rate, introducing and releasing compressed air to the Bladder Pump portion of the Genie. When compressed air is introduced to the Bladder Pump, the bladder collapses. When the air is released, the bladder expands drawing in hydrocarbon from the skimmer of the Genie System. As compressed air is introduced again, the bladder collapses, pushing the hydrocarbon in the bladder up through the product hose and into a surface-mounted holding tank.

This process repeats itself automatically at a predetermined rate.

**SELECTIVE OIL SKIMMER (SOS)**

The SOS Skimmer consists of three main items: a Floating Intake Head, Guide Rod & Flexible Tube, and 2 Well Centering Disks.

**The Floating Intake Head:**

- Consists of an outer debris screen, a floatation collar, and an inner semi-permeable (selective) screen which repels water and allows liquid hydrocarbons to pass.
- Removes free-floating hydrocarbon to a sheen ( $\leq 0.01$  inches).
- Floats at the product-water interface in the well and automatically adjusts to any groundwater fluctuation within its travel range.
- Slides on a hollow, stainless steel guide tube which passes down through the center of the skimmer head.
- Is connected to the guide tube via a flexible (fuel rated) tube which hangs below the skimmer head and guide tube.

**The Well-Centering Disks:**

- Prevent the Skimmer Floating Intake Head from contacting the sides of the well casing.
- Reside on upper and lower ends of the skimmer.

**GNE/200/SOS (Cont'd)**

**SYSTEM REQUIREMENTS/PARAMETERS**

The Genie/200/SOS Product Only Recovery System:

- Uses less than 0.5 scfm of compressed air @ 80 psi for most applications.
- Has an operating pressure from 40 to 120 psi.
- Requires a Female NPT fitting on the product recovery tank (which is typical of 55 gallon drums) for the product discharge adapter (Male NPT).
- Functions up to a total pressure head of 200 feet.
- Includes SOS Skimmers that function best with light hydrocarbons having low viscosity such as gasoline, diesel, and jet fuels. More viscous hydrocarbons may require the use of CEE Specific Gravity (SPG) Skimmers described at the beginning of this section. Please refer to the white "Active Skimmers" tab of this section for additional details.
- Can pass wet, oily compressed air.

**SYSTEM OPTIONS**

The Genie/200/SOS Product Only Recovery System is fully expandable for multi-well applications and has several upgrade options. It has the option of:

- Adding Tank-Full Shut-Off (TFSO) logic for overfill protection of the product storage tank. Please refer to the blue "Tank-Full Shut-Off System" tab.
- Adding High-Water Shut-Off (HWSO) logic which turns off the Product Pump temporarily and prevents water contamination in the product storage tank during high-water conditions.
- Adding Product Sensing Recovery (PSR) logic which will turn on the Genie Pump only when product is present in the well.
- Using tubing with barbs instead of industrial grade hose with quick-connects.
- Using different types of well caps (i.e. with barbs, quick-connects, well seal, and/or blind flange).
- Pump cycle counters are easily connected in series between the air supply and Genie system to count the number of pump cycles that occur within a given time period.

**MATERIALS OF CONSTRUCTION**

SOS Skimmer:

- Stainless Steel
- Viton
- Closed Cell Foam
- Delrin & other Engineering Plastics
- Brass

Product Pump:

- Brass
- Stainless Steel
- Viton

**COMPONENT AND SHIPPING WEIGHTS**

ITEM	COMPONENT	WEIGHT	LENGTH
Skimmers:	SOS-2	1.5	0.7
	SOS-4	3.5	1.6
Genie Pump		6.0	2.7
Hoses		Varies	

SOLAR/ELECTRICAL/PNEUMATIC  
DIGITAL PUMP CONTROLLER**C100**

# Optimize Floating Hydrocarbon Recovery with the Digital Controller from QED

**Versatile Ferret Controller  
Provides Easy Adjustment  
of Floating Hydrocarbon  
Removal Rates, Including  
Programmed "OFF" Periods**

Ferret In-Well Separators are effective, versatile tools for removing floating hydrocarbons without water, and now they're even more versatile with the C100 Digital Controller. The C100 offers easy digital control of Ferret operation to match your project's specific floating hydrocarbon, (LNAPL) properties and site conditions. The C100 controller even includes at no extra cost the ability to program system "OFF" periods, so that the maximum LNAPL flow through the soil can be maintained. Such "OFF" periods can enhance higher net LNAPL removal rates.

Every C100 includes both solar power and AC power choices. The solar powered mode of operation includes a 10 - day battery backup, and has been field proven even under northern Midwestern winter conditions. The solar mode also bears a CSA intrinsic safety rating. For indoor applications, an AC powered adapter is simply plugged into the C100.

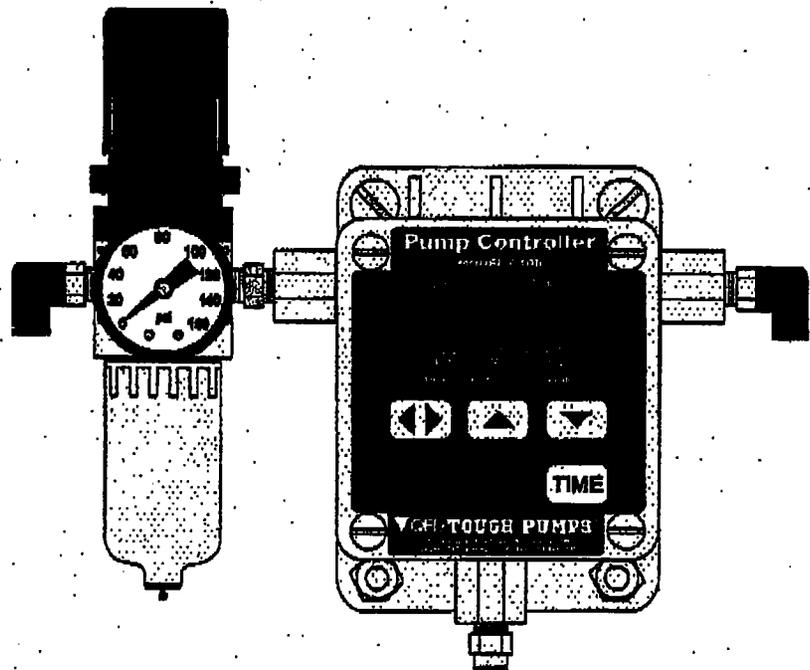
The electronics in the C100 are specially sealed for long life and have been proven reliable under extreme climate conditions.



**QED Environmental Systems, Inc.**

P.O. Box 3726, Ann Arbor, Michigan 48106 • 734-995-2847 800-624-2026 Fax: 734-995-1170 • E-Mail: [info@qedenv.com](mailto:info@qedenv.com) Website: <http://www.qedenv.com>

PN 2240 REV. #1 2-25-00



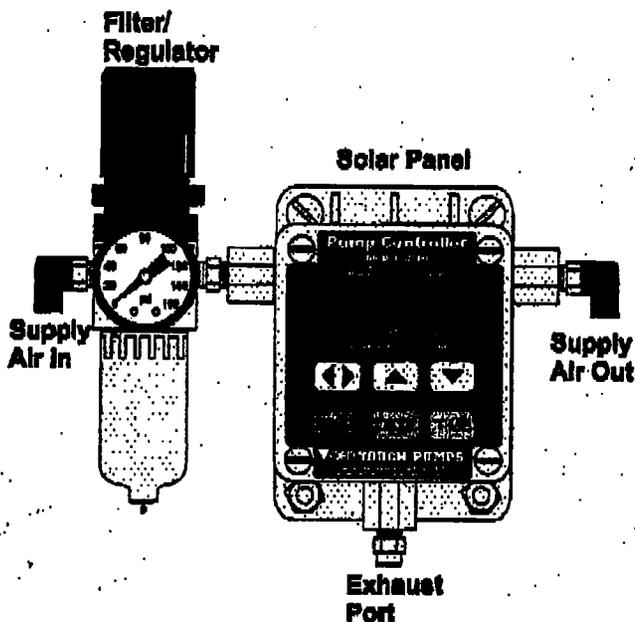
## C100 Benefits

- Easy digital control and display of Ferret cycle settings
- Includes programmable system "OFF" periods to optimize LNAPL removal rates to match site conditions
- Intrinsically safe solar power with 10 - day battery backup
- AC power choice included
- Compact enclosure
- Sealed electronics
- Designed for rugged site conditions

**TECHNICAL DATA / SPECIFICATION SHEET**

**SOLAR/ELECTRICAL/PNEUMATIC PUMP CONTROLLER**

**C100**



**CONTROLLER TYPE:**

SOLAR/ELECTRICAL/PNEUMATIC

**ENCLOSURE:**

**DIMENSIONS** - 3.5" (8.9 cm) W x 3.65" (9.3 cm) H x 3.5" (8.9 cm) D

**WEIGHT** - 3 LBS. (1.4 kg)

**TYPE** - Fiber reinforced thermoplastic  
NEMA 4X & UL 608

**POWER:**

**SOLAR** - Shatterproof solar panel on enclosure top, with backup battery pack with 10 day reserve capacity. CSA compliance, intrinsically safe, class 1, division 1, group C & D

**C100 IS CSA RATED INTRINSICALLY SAFE WHEN USED IN SOLAR MODE**

**110 VAC** - Power converter plugs in to standard 110 VAC outlet and supplies 6 VDC, (300 milliamp) to connector plug in enclosure bottom

**C100 IS NOT RATED INTRINSICALLY SAFE WHEN USED WITH 110 VAC POWER CONVERTER**

**TEMPERATURE:**

**OPERATING** - -20° F to 150° F (28.9° C to 65.6° C)

**DISPLAY:**

**TYPE** - LCD display, 16 character alphanumeric w/ temperature compensated contrast and power off control

**WINDOW** - Non-glare, double hardened optical acrylic

**PNEUMATIC CONTROL:**

**TYPE** - Latching solenoid w/ dual port manifold

**FITTINGS** - Female 1/4-18 NPT brass with nickel plating

**PRESSURE** - 100 P.S.I. (690 kPa) maximum

**FLOW CAPACITY:**

Sufficient for single Ferret - Call factory for other requirements

**CONTROL KEYS:**



Allows manual toggling of valve and system ON & OFF cycles. Also allows enabling & disabling of system.



Multi screen key to sequentially display well status, battery status, solar panel voltage, ON/OFF and system valve.



Allows system counts and time sums, and valve time settings.

**SET KEYS:**



Left/right cursor key



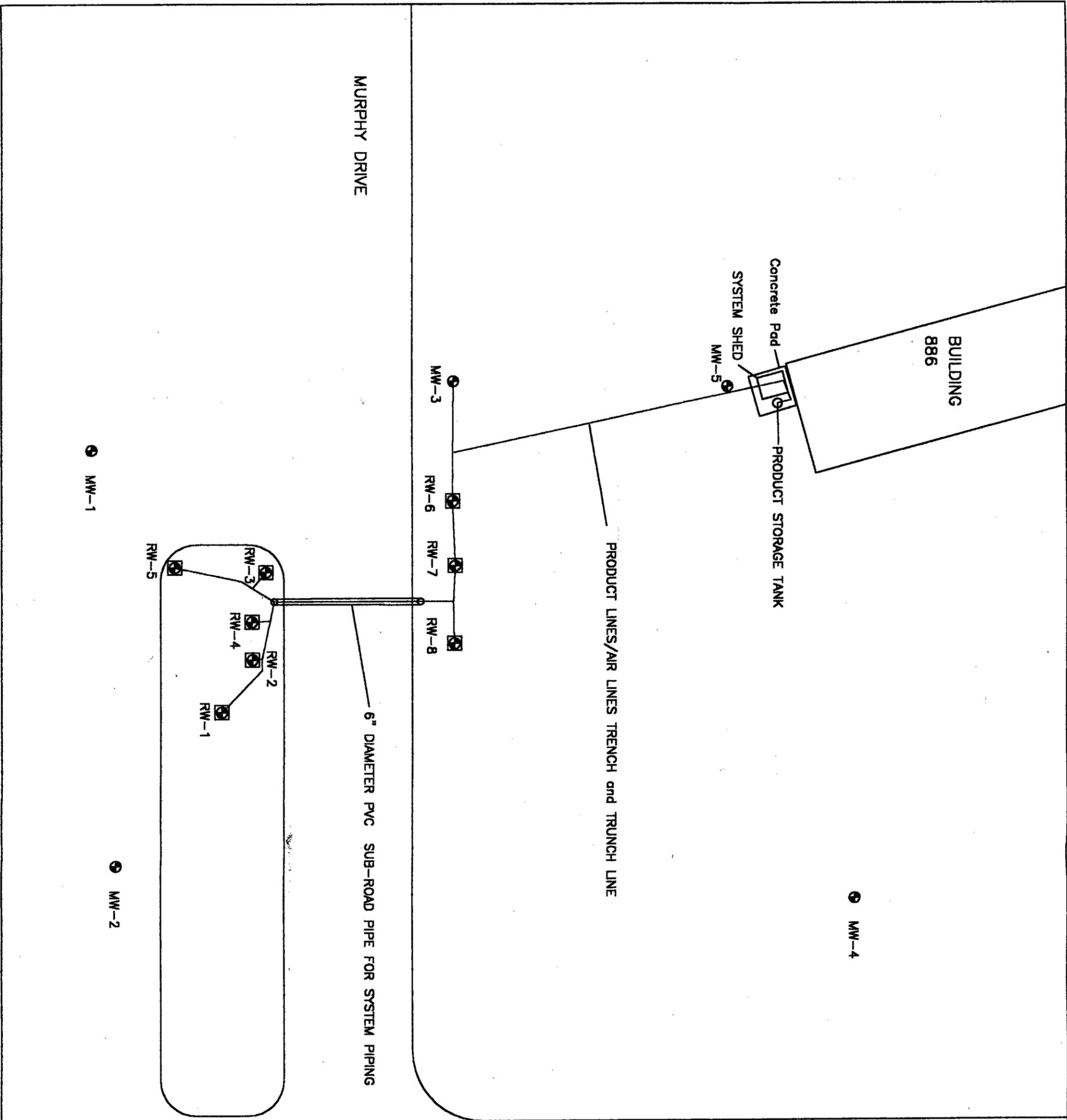
Up or add key.



Down or subtract key.

**NOTE:**

Display turns off after five minutes of non activity. Press any key to turn display back on.



MURPHY DRIVE

BUILDING 886

Concrete Pad  
SYSTEM SHED  
PRODUCT STORAGE TANK

PRODUCT LINES/AIR LINES TRENCH and TRUNK LINE

6" DIAMETER PVC SUB-ROAD PIPE FOR SYSTEM PIPING

MW-1

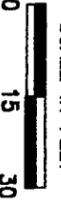
MW-2

MW-4

ACCESS ROAD

**LEGEND**

- SUBSURFACE SYSTEM PIPING
- MONITORING WELL
- ⊕ RECOVERY WELL

DRAFTED BY: EH		<b>AS-BUILT SITE PLAN</b>	
CHECKED BY: EH		US ARMY BUILDING 886	
REVIEWED BY: EH		FORT MONMOUTH EATONTOWN, NEW JERSEY	
NORTH		HANDEX ENVIRONMENTAL, Inc. 500 CAMPUS DRIVE, MORGANVILLE, NJ 07751	
 SCALE IN FEET 		DATE 01-10-03	FIGURE 1

**APPENDIX B**

**RI/RA Activities Photographic Log**

**APPENDIX B**  
**Site 886 Photographic Log**



Photo #1: Undisturbed Site – Looking West Across Murphy Drive



Photo #2: Looking West - Actively Excavating Murphy Drive



Photo #3: Looking Southwest - Actively Excavating Murphy Drive and Grass Island



Photo #4: Looking Northeast - Actively Excavating Murphy Drive and Grass Island



Photo #5: Looking East - Actively Excavating Grass Area Southeast side of Murphy Drive



Photo #6: Looking Southeast - Excavation in Grass Area; Bldg. 886 in Background



Photo #7: Looking North - Excavation in Grass Area



Photo #8: Looking South - Backfilling of Excavation



Photo #9: Looking North - Murphy Drive Restored

**APPENDIX C**

**Laboratory Data Sheets for Remedial Action Soil Sampling**

**APPENDIX D**

**Laboratory Data Sheets for Remedial Investigation Soil Sampling**

**APPENDIX E**

**Laboratory Data Sheets for Geoprobe Groundwater Sampling**

**APPENDIX F**

**Laboratory Data Sheets for Monitoring Well Groundwater Sampling**