DEPARTMENT OF THE ARMY

OFFICE OF ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
U.S. ARMY FORT MONMOUTH
P.O. 148
OCEANPORT, NEW JERSEY 07757

6 April 2017

Ms. Linda Range
New Jersey Department of Environmental Protection
Case Manager
Bureau of Southern Field Operations
401 East State Street, 5th Floor
PO Box 407
Trenton, NJ 08625

Re: Summary Remedial Investigation Report and NFA Request for FTMM-66
Building 886 Former Aboveground Storage Tank
Fort Monmouth, NJ
PI G000000032

Attachments:

A. Table 1: Summary of Compliance Averaging Results
B. Previous FTMM-66 Correspondence (see list below)
C. Figures
   1. Layout of FTMM-66 (Fuel Oil Tanks at Building 886)
   2. Extent of TPH > 5,100 mg/kg Remaining in Soil Following Phase 2 Excavation
D. Soil Data - Comparison to NJDEP Criteria
E. Previous Reports (see list below)
F. Compliance Averaging Methodology Applied at FTMM-66

Previous Correspondence (provided in Attachment B):

1. NJDEP letter to the Army dated August 27, 2010, re: *Remedial Action Report, Building 886 Site – Main Post, Fort Monmouth NJ*
2. NJDEP letter to the Army dated March 18, 2011, re: *2010 Remedial Action Progress Reports, Fort Monmouth, NJ*
3. Army letter to the NJDEP dated November 26, 2014, re: *State of New Jersey Department of Environmental Protection Comments on the Final Baseline Groundwater Sampling Report (August 2013), Fort Monmouth, Oceanport, Monmouth County.*
4. NJDEP letter to the Army dated February 5, 2015, re: *November 26, 2014 Response to Comments on the Final Baseline Ground Water Sampling Report (August 2013), Fort Monmouth, Monmouth County.*
5. NJDEP letter to the Army dated November 14, 2016, re: *Annual (Fourth Quarter) 2015 Groundwater Sampling Report dated September 2016, Fort Monmouth, Oceanport, Monmouth County.*

Previous Reports (provided in Attachment E):

1. *Remedial Action Report for Soil and Groundwater Contamination, Building 886,* Versar, January 2006
2. *Site 886 (FTMM-66) Remedial Action Progress Report (2nd Quarter 2003 through 4th Quarter 2008),* VEETech, P.C. July 2010
3. *Final Annual (Fourth Quarter) 2015 Groundwater Sampling Report, Fort Monmouth, Oceanport, Monmouth County, New Jersey*, Parsons, September 2016 (Appendix K)

Dear Ms. Range:

The U.S. Army Fort Monmouth (FTMM) has prepared this Summary Remedial Investigation (RI) Report to present information concerning environmental investigations for the Installation Restoration Program (IRP) Site FTMM-66 Building 886 Former Aboveground Storage Tank. Soil contamination at this site was remediated in 2003 to the then-current Total Petroleum Hydrocarbons (TPH) cleanup criteria of 10,000 milligrams per kilogram (mg/kg). **Correspondence 1** of **Attachment B** from the New Jersey Department of Environmental Protection (NJDEP) concerning the Remedial Action Report (RAR; Versar, 2006; see **Report 1** of **Attachment E**) indicated in 2010 that soil contamination should address the updated residential health-based screening criteria of 5,100 mg/kg. Long-term groundwater monitoring at FTMM-66 was discontinued in 2016 based on the recommendations of the Annual (Fourth Quarter) 2015 Groundwater Sampling Report (Parsons, 2016; **Report 3** of **Attachment E**), which was accepted by NJDEP (2016; **Correspondence 5** of **Attachment B**). This Summary RI Report provides an overview of site information, and the results of compliance averaging used for comparing site soil concentrations with the current residential remedial goal for extractable petroleum hydrocarbons (EPH).

1.0 SITE DESCRIPTION

FTMM-66 was initially associated with Building 886 (**Figure 1** of **Attachment C**) which was previously used for equipment storage. There are currently no new development activities occurring at this site. Building 886 at FTMM-66 is surrounded primarily by grass-covered lawn areas with scattered trees. The ground surface topography is generally flat, with ground surface elevations ranging from approximately 13 to 15 feet above mean sea level. The former Commissary (Building 1007) is located just west of FTMM-66. The anticipated future land use at FTMM-66 is non-residential (i.e., commercial/industrial) (EDAW, Inc., 2008).

Contaminant sources at FTMM-66 included a former 250,000-gallon aboveground storage tank (AST) used for storing Number 2 (No. 2) fuel oil as well as a former 1,000-gallon No. 2 fuel oil underground storage tank (UST). These are Category 1 (i.e., No. 2 fuel oil and/or diesel fuel) discharges per NJDEP guidance (NJDEP, 2010a). Contamination was discovered during removal of the fuel oil UST in 1998; however, subsequent findings suggested that the AST (which was removed in the 1970’s) was a contributing source of soil and groundwater contamination at FTMM-66.

In 2002 and 2003, multiple phases of Geoprobe® soil investigations (Phase I and Phase II remedial investigations), TPH-contaminated soil excavations, and post-excavation sampling occurred. Soil samples were analyzed for TPH and for volatile organic compounds (**Attachment D**). The remedial action objective for the 2003 soil excavation project was to remove soil with TPH concentrations exceeding 10,000 mg/kg, the NJDEP cleanup goal at that time. The excavations were advanced to depths of 7 to 13 feet below ground surface (bgs), and approximately 4,000 tons of petroleum-contaminated soil were removed. Soil TPH was typically encountered in the vicinity of the water table (6 to 11 feet bgs [Versar, 2006]), suggesting historical migration as a light non-aqueous phase liquid (LNAPL). The northwesterly extent of the excavation was limited by the presence of subsurface high-voltage electric lines northwest of Murphy Drive (see **Figure 1** of **Attachment C**); therefore, not all of the elevated TPH concentrations could be removed due to these subsurface obstructions. An LNAPL recovery system was installed in 2003 in the vicinity of these subsurface electric lines as discussed in Section 3.0 below.

Subsequent to the 2003 excavation activities, the NJDEP residential remedial goal for EPH of 5,100 mg/kg and the non-residential remedial goal of 54,000 mg/kg replaced the TPH standard of 10,000 mg/kg, following NJDEP's conclusion that EPH and TPH results were comparable at a ratio of 1:1 (NJDEP, 2010b). None of the remaining TPH concentrations exceed the current non-residential remedial goal of 54,000 mg/kg. However, the TPH concentrations exceed the current residential remedial goal of 5,100 mg/kg in the northwest section of the excavation, and about 30 to 75 ft north of the excavation (**Figure 2** of **Attachment C**). TPH remaining in place was delineated with soil analyses from both Geoprobe® soil borings and from post-excavation soil samples, as presented in **Attachment D**.

NJDEP (2010b) also determined that EPH/TPH concentrations should not exceed a residual or free product limit of 8,000 mg/kg. This concentration limit is based on the residual saturation of petroleum in soil (described in Appendix 2 of NJDEP, 2010b), with the premise that LNAPL in soils at this concentration may results in the accumulation of fuel oil on the water table. Several soil sample results exceeded this residual or free product limit of 8,000 mg/kg, and an LNAPL recovery system was installed as described in Section 3.0 below.

Additional information concerning the FTMM-66 background and environmental setting is provided in the various reports in **Attachment E**.

2.0 GEOLOGY AND HYDROGEOLOGY

Well construction logs for FTMM-66 presented in Appendix A of the *Remedial Action Report for Soil and Groundwater Contamination, Building 886* (Versar, 2006; see **Report 1** of **Attachment E**) indicate that soil to a depth of 17 feet bgs is comprised of brown, fine to coarse sand with a minor fraction of silt and trace clay. Depth to groundwater was about 6 ft bgs. The shallow groundwater flow direction was generally to the north-northwest (Parsons, 2016; see **Report 3** of **Attachment E**).

3.0 FREE PRODUCT RECOVERY

An LNAPL recovery system was installed in 2003 and operated through March 2004. As reported in the Remedial Action Progress Report for 2003 to 2008 (**Report 2** of **Attachment E**), LNAPL recovery was minimal (only about 2 pints) due to site conditions and the system was shut down in

March 2004. LNAPL was consistently observed in only one recovery well (886RW04) and the last observation of LNAPL was 0.03 inch at 886RW04 in April 2005. Subsequent observations noted no LNAPL through August 2007. The 2003 to 2008 RAPR was approved by NJDEP in 2011 (see **Correspondence 2** of **Attachment B**).

4.0 GROUNDWATER QUALITY

FTMM-66 monitoring wells were sampled quarterly from February 2003 through April 2011 for multiple analytes including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), TPH, and metals. Groundwater sampling was resumed in August 2013 to re-establish baseline site groundwater conditions following temporary suspension of groundwater sampling in late 2011 associated with FTMM closure. Thirteen monitoring wells were sampled in 2013 and analyzed for VOCs, SVOCs and lead. Following the NJDEP agreement with the Army (**Correspondences 3 and 4** of **Attachment B**) to reduce the analyses and number of wells sampled, three wells (886RW01, 886RW06 and 886RW08) were sampled for SVOCs during the 2014 and 2015 annual sampling events.

Historical exceedances of the NJDEP groundwater quality standards (GWQS) included benzene, bis(2-ethylhexyl)phthalate, total VOC and SVOC tentatively identified compounds (TICs), and multiple metals (see **Report 3** of **Attachment E**). Metals and bis(2-ethylhexyl)phthalate were not identified as potential contaminants of concern. Benzene, VOC TICs, and SVOC TICs concentrations in the historical (2011 and before) monitoring exceeded the GWQC in well 886RW01 only, and were last detected above the GWQC in 2009. SVOC TICs were detected at concentrations greater than the GWQS in two wells (886RW01 and 886RW08) in 2013, but during the 2014 and 2015 sampling events, were non-detect or below the NJDEP GWQS. Long-term groundwater monitoring was discontinued as recommended by the Army (Parsons, 2016; see **Report 3** of **Attachment E**) and accepted by NJDEP (2016; see **Correspondence 5** of **Attachment B**). An NFA determination is warranted for groundwater at FTMM-66.

5.0 COMPLIANCE AVERAGING FOR SOIL

The 95% upper confidence limit (UCL) method for compliance averaging was applied at FTMM-66 using an approach consistent with the attainment guidance (NJDEP, 2012) to determine whether the current residential remedial goal for EPH has been achieved. The previous TPH results were considered comparable to EPH results for decision making purposes based on NJDEP guidance (2010a and 2010b).

NJDEP requires EPH concentrations to be less than the 8,000 mg/kg residual or free product limit (Step 7 of NJDEP, 2010a). Soil TPH concentrations in 2003 were measured in excess of this criteria at multiple locations at FTMM-66; however, these sample data are over 14 years old. Because the source of contamination was removed by 2003 and is no longer contributing to the onsite release, it is likely that TPH concentrations have significantly decreased by natural degradation processes since the remediation occurred. Further, a free product removal system was installed at the site (see Section 3.0). Also, subsequent post-excavation groundwater monitoring has demonstrated the reduction of petroleum constituents in groundwater over time (see Section 4.0). Therefore, the site meets the intent of the NJDEP policy criteria for EPH, and compliance averaging was performed using historical (2003) soil sample results.

The compliance averaging methodology and supporting documentation are provided in **Attachment F**. The results are summarized in **Table 1** in **Attachment B**. The average TPH concentration for each functional area met the RDCSRS of 5,100 mg/kg (**Table 1**). Therefore, the results of the compliance averaging indicate that soil at FTMM-66 meets the residential remedial goal for EPH. Based on this evaluation, a NFA determination is warranted for the FTMM-66 site soils.

6.0 SUMMARY

In summary, the Army requests a no further action determination for FTMM-66 because: 1) LNAPL recovery was completed; 2) groundwater monitoring was discontinued, as accepted by NJDEP; and 3) compliance averaging indicates that soil meets the residential remedial goal for EPH.

The technical Point of Contact for this matter is Kent Friesen; he can be reached at (732) 383-7201 or by email at kent.friesen@parsons.com. Should you have any questions or require additional information, please contact me by phone at (732) 380-7064 or by email at william.r.colvin18.civ@mail.mil.

Sincerely,

William R. Colvin

William R. Colvin, PMP, CHMM, PG
BRAC Environmental Coordinator

cc: Linda Range (3 hard copies)
Joseph Pearson, Calibre (CD)
James Moore, USACE (CD)
James Kelly, USACE (CD)
Cris Grill, Parsons (CD)

REFERENCES CITED:

EDAW, Inc. 2008. Fort Monmouth Reuse and Redevelopment Plan, Final Plan. Prepared for Fort Monmouth Economic Revitalization Planning Authority. August 22.

NJDEP, 2010a. Protocol for Addressing Extractable Petroleum Hydrocarbons. Version 5.0, August 9.

NJDEP, 2010b. Health Based and Ecological Screening Criteria for Petroleum Hydrocarbons, Frequently Asked Questions. Version 4.0, August 9.

NJDEP, 2012. Technical Guidance for the Attainment of Remediation Standards and Site Specific Criteria. September 24.

New Jersey Department of Environmental Protection
Site Remediation Program

Report Certifications for RCRA GPRA 2020, CERCLA, and Federal Facility Sites

These certifications are to be used for reports submitted for RCRA GPRA 2020, CERCLA, and Federal Facility Sites. The Department has developed guidance for report certifications for RCRA GPRA 2020, CERCLA, and Federal Facility Sites under traditional oversight. The "Person Responsible for Conducting the Remediation Information and Certification" is required to be submitted with each report. For those sites that are required or opt to use a Licensed Site Remediation Professional (LSRP) the report must also be certified by the LSRP using the "Licensed Site Remediation Professional Information and Statement". For additional guidance regarding the requirement for LSRPs at RCRA GPRA 2020, CERCLA and Federal Facility Sites see http://www.nj.gov/dep/srp/srra/training/matrix/quick_ref/rcra_cercla_fed_facility_sites.pdf.

Document: "Summary Remedial Investigation Report and NFA Request for FTMM-66 Building 886 Former Aboveground Storage Tank"

PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: William R. Colvin
Representative First Name: William Representative Last Name: Colvin
Title: BRAC Environmental Coordinator
Phone Number: (732) 380-7064 Ext: Fax:
Mailing Address: P.O. Box 148
City/Town: Oceanport State: NJ Zip Code: 07757
Email Address: william.r.colvin18.civ@mail.mil

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature: William Colvin Date: 04/06/2017

Name/Title: William R. Colvin / BRAC Environmental Coordinator

ATTACHMENT A

Table 1

Table 1 Summary of Compliance Averaging Results

Table 1. Summary of Compliance Averaging Results

Functional Area	Acreage	Number of Samples [A]	Functional Area Depth Interval (feet bgs)	95% Upper Confidence Limit
EPH Remedial Standard = 5,100 mg/kg				
1A	0.33	28	0 - 2	662
1B	0.33	110	>2	3,333
2A	0.31	8	0 - 2	714 [B]
2B	0.31	56	>2	5,033

Notes:

[A] – Does not include field duplicates.

[B] - Too few detections were available to calculate a UCL. Therefore, the arithmetic mean is presented.

Value — UCL achieves compliance with remedial goal

Abbreviations:

bgs - below ground surface

ATTACHMENT B

Previous FTMM-66 Correspondence

1. NJDEP letter to the Army dated August 27, 2010, re: *Remedial Action Report, Building 886 Site – Main Post, Fort Monmouth NJ*
2. NJDEP letter to the Army dated March 18, 2011, re: *2010 Remedial Action Progress Reports, Fort Monmouth, NJ*
3. Army letter to the NJDEP dated November 26, 2014, re: *State of New Jersey Department of Environmental Protection Comments on the Final Baseline Groundwater Sampling Report (August 2013), Fort Monmouth, Oceanport, Monmouth County. PIG000000032.*
4. NJDEP letter to the Army dated February 5, 2015, re: *November 26, 2014 Response to Comments on the Final Baseline Ground Water Sampling Report (August 2013), Fort Monmouth, Monmouth County, PI G000000032, Activity Number: RPC000001*
5. NJDEP letter to the Army dated November 14, 2016, re: *Annual (Fourth Quarter) 2015 Groundwater Sampling Report dated September 2016, Fort Monmouth, Oceanport, Monmouth County, PIG000000032*

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITE REMEDIATION, PUBLICLY FUNDED REMEDIATION ELEMENT
P.O. BOX 413
TRENTON, NEW JERSEY 08625-0413

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

August 27, 2010

Mr. Joseph Fallon, CHMM
Directorate of Public Works
ATTN: IMNE-MON-PWE
167 Riverside Ave.
Fort Monmouth, NJ 07703

RE: Remedial Action Report
Building 886 Site – Main Post, Fort Monmouth, NJ

Dear Mr. Fallon:

The NJDEP Site Remediation Program (SRP) has completed its review of the Remedial Action Report, dated January 13, 2006 for the Building 886 site. We have also reviewed Fort Monmouth's March 31, 2010 letter requesting a reduction in the quarterly ground water sampling being conducted at the Building 886 site. Our comments on the documents are attached.

You or your staff may contact me at 609-633-0766 with any questions on the enclosed comments, or any other site remediation matters at Fort Monmouth.

Sincerely,

Larry Quinn

Larry Quinn, P.E., Site Manager
Bureau of Investigation, Design and Construction

NJDEP COMMENTS on REMEDIAL ACTION REPORT for BUILDING 886 SITE FORT MONMOUTH, NJ

1. TPH Criteria. The RAR repeatedly refers to the former Total Petroleum Hydrocarbons (TPH) cleanup criteria of 10,000 ppm as the NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSCC) for TPH. For clarification purposes, the TPH soil cleanup criteria of 10,000 ppm wasn't developed as a health-based number and wasn't considered to be a residential direct contact number. However, a new residential health-based screening criteria of 5,100 ppm for TPH is now in effect. The new criteria will need to be used for any necessary delineation of remaining soil contamination at the Building 886 site.

2. TPH, page 4-2. The analytical data for sample 886-41 at 10 feet indicated TPH contamination in soil at a level of 14,258 ppm. The Report states that sample location 886-41 was resampled, that results reported a TPH concentration well below criteria, and that the first sample was in error. The Report does not explain why the original soil sample collected at 886-41 was in error. The data point for the original sample may not be dismissed without clear justification. Additional delineation and/or a deed notice may be necessary.

3. TPH, page 4-3. TPH contamination was detected at several depth intervals at boring 886-57. The Report states that the occurrence of high voltage utilities in the area prohibited further excavation. Additional delineation and/or a deed notice may be necessary.

4. Conclusions, page 5-1. The Report states that during the Phase 2 post-excavation sampling, TPH was detected in two soil samples at concentrations that exceeded the 10,000 ppm criteria. The contaminated soil remaining at sample point 886-PX19/WW7.5-8' is located on the north-west corner of the excavation wall. Additional excavation was not performed due to the occurrence of utility lines which run through the center of the island and parallel to the street. Additional delineation and/or a deed notice may be necessary.

5. Free Product. In Section 3.6, 3rd paragraph, the text states that the ground water treatment system has not been activated for regular use in free product recovery. However, it states that manual product gauging has been performed at recovery well 886RW04. The Department requests clarification regarding a) whether or not any other monitoring wells or recovery wells have ever contained product, b) whether product gauging was performed in well 886RW04 after 9/1/2005, and c) if so, what were the results?

6. Ground Water Remedy. It is unclear from the report what remedial action has been implemented for **dissolved** ground water contamination, though it appears that natural remediation is the remedial action. In accordance with N.J.A.C. 7:26E-6.3(d)3, a natural remediation remedy cannot be approved if soil contamination remains above the applicable standards in the unsaturated zone. Also, it is unclear if product remains an issue at the site (See Comment # 5 above).

NJDEP Comments on March 31, 2010 Letter Requesting Ground Water Sampling Modification at Building 886 Site

1. Based upon review of the January 13, 2006 RAR and the March 31, 2010 letter, the NJDEP approves the proposal to eliminate VOC and SVOC sampling for the following ground water monitoring wells: 886MW03, 886MW04, 886MW05, 886RW06, 886RW07, and 886RW08.

2. The following wells must continue to be sampled for VOCs and SVOCs because they are located hydraulically downgradient of areas where soils exceeding remediation standards remain: 886MW01, 886MW02, 886RW02, 886RW03, 886RW04, 886RW05. However, based on historic sampling results, annual sampling (once/year) would be sufficient for those wells.

3. NJDEP agrees that monitoring well 886RW01 should continue to be sampled quarterly for VOCs and SVOCs, and that all monitoring wells should continue to be gauged quarterly.

4. The proposal to install a monitoring well downgradient of 886RW01 to delineate the dissolved contamination found in well 886RW01 is acceptable.

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITE REMEDIATION, PUBLICLY FUNDED REMEDIATION ELEMENT
P.O. BOX 413
TRENTON, NEW JERSEY 08625-0413

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

March 18, 2011

Mr. Joseph Fallon, CHMM
Chief, Environmental Division
Directorate of Public Works
ATTN: IMNE-MON-PWE
167 Riverside Ave.
Fort Monmouth, NJ 07703

RE: 2010 Remedial Action Progress Reports
Fort Monmouth, NJ

Dear Mr. Fallon:

The NJDEP Site Remediation Program (SRP) received Remedial Action Progress Reports (RAPRs) on ten (10) site remediation areas of concern (AOCs) from Fort Monmouth in June and October of 2010. SRP has reviewed the RAPRs. The following is the status of each RAPR:

1. Site CW-1. NJDEP will perform a detailed review of the RAPR dated June 2010 by GES, Inc. and provide comments at a later date. In the meantime, a discharge-to-ground water permit-by-rule (DGW PBR) for ground water remedial injections was issued by NJDEP on November 19, 2010. The results of the remedial injections must be presented in future RAPRs.

2. Building 2567. The RAPR dated June 2010 by VeeTech, P.C. is hereby approved. A DGW PBR for ground water remedial injections was issued by NJDEP on October 28, 2010. The results of the remedial injections must be presented in future RAPRs.

3. Building 699. NJDEP reviewed the RAPR dated June 2010 by GES, Inc. We approved the RAPR and provided comments on a letter dated February 23, 2011.

4. Site 1122. The RAPR dated June 2010 by VEE Tech, P.C. is hereby approved, including Appendix C, Response to August 27, 2008 NJDEP Comments. The results of any additional investigation activities must be presented in future RAPRs.

5. Site 886. The RAPR dated July 2010 by VEE Tech, P.C. is hereby approved. After that RAPR was prepared, but before it was submitted to NJDEP (October 22, 2010), NJDEP issued a comment letter on Site 886, dated August 27, 2010. That comment letter addressed the January 13, 2006 Remedial Action Report (RAR) for Site 886, and the Army's March 31, 2010 request for reductions in quarterly ground water sampling. NJDEP's August 27, 2010 comments should be incorporated in future response actions and reports on Site 886.

6. Site 812. The RAPR dated July 2010 by VEE Tech, P.C. is hereby approved. A DGW PBR for additional ground water remedial injections was issued by NJDEP on November 10, 2010. The results of the remedial injections must be presented in future RAPRs.

7. Site 283. The RAPR dated July 2010 by VEE Tech, P.C. is hereby approved, including Appendix F, Response to October 24, 2007 NJDEP comments. A DGW PBR for additional ground water remedial injections was issued by NJDEP on October 28, 2010. The results of the remedial injections, as well as any additional investigation activities, must be presented in future RAPRs.

8. M-2 Landfill. The RAPR dated September 2010 by VEE Tech, P.C. is hereby approved. Section 6.3 of the RAPR references the June 26, 2009 NJDEP comment letter on previous reports on the M-2 Landfill. Those comments should be incorporated in future response activities at M-2. Also, a DGW PBR for additional ground water remedial injections was issued by NJDEP on October 28, 2010. The results of the remedial injections must be presented in future RAPRs.

9. M-5 Landfill. The RAPR dated September 2010 by VEE Tech, P.C. is hereby approved, including the recommendation to discontinue quarterly sampling of monitoring well M-5MW10. Section 6.3 of the RAPR references the December 16, 2009 NJDEP comment letter on previous reports on the M-5 Landfill. Those comments should be incorporated in future response activities at M-5. Also, a DGW PBR for additional ground water remedial injections was issued by NJDEP on November 10, 2010. The results of the remedial injections must be presented in future RAPRs.

10. M-8 Landfill. Two RAPRs dated September 2010 by VEE Tech, P.C. were received, covering the time periods 4th Quarter 2005 - 3rd Quarter 2006 and 4th Quarter 2006 - 4th Quarter 2008. NJDEP will perform a detailed review of those RAPRs and all previous M-8 Landfill reports and provide comments at a later date.

You or your staff may contact me at 609-633-0766 with any questions on the above, or any other site remediation matters at Fort Monmouth.

Sincerely,

Larry Quinn

Larry Quinn, P.E., Site Manager
Bureau of Investigation, Design and Construction

C:
Michele Siekerka, Economic Growth & Green Energy, NJDEP
Rick Harrison, FMERA

DEPARTMENT OF THE ARMY

OFFICE OF ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
U.S. ARMY FORT MONMOUTH
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November 26, 2014

Linda S. Range
State of New Jersey
Department of Environmental Protection
Bureau of Case Management
401 East Side Street
PO Box 420/Mail Code 401-05F
Trenton, NJ 08625-0028

Subject: State of New Jersey Department of Environmental Protection Comments on the Final Baseline Groundwater Sampling Report (August 2013) Fort Monmouth, Oceanport, Monmouth County. PI G000000032

Attachments: A. 2009 Temporary Well Points and Analytical Data

B. Revised Table 7

Dear Ms. Range:

Fort Monmouth (FTMM) and Parsons have reviewed the New Jersey Department of Environmental Protection (NJDEP) comments on the Final Baseline Groundwater Sampling Report (August 2013) as documented in your letter dated July 3, 2014. Response to your comments are provided below in the order in which they were presented in the comment letter.

A. GENERAL COMMENT/STATEMENT:

The New Jersey Department of Environmental Protection (Department) has completed review of the referenced report, dated March 2014, received on April 7, 2014. The report was prepared by Parsons Government Services Inc. (Parsons), in support of the Remedial Investigation (RI), Feasibility Study (FS), and Decision Documents project at Fort Monmouth.

A baseline ground water sampling event was conducted at 21 "sites" at the Fort Monmouth property in August 2013. The purpose of the sampling event was to re-establish baseline conditions following suspension of ground water sampling in late 2011, as well as to evaluate Fort Monmouth's long-term ground water sampling program, and the current analytical conditions of the ground water at each site. Sampling methodologies used included low-flow and passive diffusion bag samplers (PDBS). At four sites (FTMM-14, 18, 59, 68), only PDBS sampling was conducted. At three sites (FTMM-05, 22, 58) both low-flow and PDBS samples were obtained for comparison purposes. Fourteen (14) sites were only sampled using low-flow. The report states that PDBS concentrations were consistently biased somewhat low compared to the low-flow *concentrations. The report concludes, however, that the PDBS results were still similar to the low-flow results and are considered representative of ground water conditions at the sites. Based on this conclusion, the report states that for future ground water sampling, PDBS will be used for all sites where volatile organic compounds (VOCs) are the sole contaminants of concern. Comments are presented below.*

Section 3.1; Table 6; Appendices & associated Tables - *The "background concentrations" submitted in the* 1995 *Weston report were not accepted by the Department as representative of background conditions for Fort Monmouth. The study was not performed in accordance with Departmental protocol and is not a consideration in our evaluations/determinations. As indicated in Section* 3.1, *background concentrations are evaluated on a site by site basis.*

A. RESPONSE: Acknowledged,

B. <u>FTMM-02 Landfill</u>

B. COMMENT: *Historic sampling at this parcel indicated levels of VOCs above the Ground Water Quality Standard (GWQS); metals were previously determined to be reflective of naturally occurring conditions. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for VOCs. The report recommends VOC sampling of wells M2MW03, M2MW11, M2MW21, M2MW22 and M2MW24 for two additional rounds using PDBS. Well M2MW10 will be monitored as a down gradient sentinel well. Although the proposal is acceptable, for wells in which the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. At any point where a decision is made to terminate ground water sampling at this site, confirmatory sampling using low-flow due to PDBS biasing low as compared to low-flow results at the Fort Monmouth site will be required.*

B1. RESPONSE: Agreed.

C. <u>FTMM-03 Landfill</u>

C. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of vinyl chloride and metals. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for vinyl chloride in well 3MW07. Well 3MW02 was not sampled due to low water column and silty conditions; however, Table 4 of Appendix B recommends sampling of 3MW02 for VOCs and metals. The report attributes the presence of vinyl chloride to leaching of PVC piping from well 3MW07. A temporary well point investigation was conducted in 2009 to delineate the vinyl chloride, the results were non-detect, and abandonment of 3MW07 is recommended. The recommendations are acceptable. However, a figure presenting the locations and sampling results from the 2009 temporary well point investigation must be provided to the Department.*

C. RESPONSE: A figure showing the location of 2009 temporary well points and the associated groundwater analytical data are provided in **Attachment A.** Therefore, FTMM will abandon 3MW07 in accordance with NJDEP well abandonment procedures.

D. <u>FTMM-04 Landfill</u>

D. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of various metals. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for metals. The metals are attributed to background conditions, and cessation of ground water sampling is recommended. The recommendation is acceptable. Monitoring wells at this* *parcel shall be properly abandoned if they are no longer subject to sampling or gaging for water elevation data.*

D. RESPONSE: Agreed.

E. FTMM-05 Landfill

E. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of PCE, TCE and vinyl chloride, which the August 2013 sampling, using low-flow and PDBS, confirmed. The report recommends annual VOC sampling of wells M5MW11, M5MW16, M5MW20 and M5MW23 using PDBS. The Department finds the proposal to be acceptable. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS results at this parcel biased low compared to the low-flow results.*

E. RESPONSE: Agreed.

F. FTMM-08 Landfill

F. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of pesticides, benzene, PCE and lead. The August 2013 sampling of wells using low-flow confirmed the exceedance of the GWQS for PCE and lead. The well with historic pesticide exceedances (697MW01) could not be located and was not sampled. The report recommends annual ground water sampling of well M8MW11 for VOCs and lead, M8MW12, 15, 16 and 24 for VOCs and M8MW17 and 21 for lead only. Monitoring well 697MW01 will be located and sampled for pesticides, lead and VOCs. The recommendation is acceptable.*

F. RESPONSE: Agreed.

G. FTMM-12 Landfill

G. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of various metals, including arsenic and lead. Historic exceedances of metals except for lead are attributed to background quality. The August 2013 sampling was conducted for lead analysis only. Lead was not detected. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gauging for water elevation data.*

G. RESPONSE: Agreed.

H. FTMM-14 Landfill

H. COMMENT: *Historic sampling at this parcel revealed no GWQS exceedances of VOCs. The August 2013 sampling of wells using PDBS confirmed that there was no exceedance of the GWQS. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gaging for water elevation data. The Department also notes that on Table 1, well M14MW19 is listed as having 10 feet of total screen length. However, the table also lists the saturated screen length as 13.35 feet. This discrepancy should be clarified.*

H. RESPONSE: Agreed. The saturated screen thickness for M14MW19 is 10 feet.

I. FTMM-18 Landfill

I. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of benzene and l,2-DCA. The August 2013 sampling results of wells using PDBS showed the exceedance of the GWQS for 1,2-DCA in well M18MW22. Well M18MW23 could not be located and was not sampled. The report recommends annual ground water sampling using PDBS for M18MW22 and M18MW23 if it can be located. Every reasonable effort, such as reviewing the NJ State Plane Coordinates of the well, must be made to locate M18MW23. The use of M18MW22 as the sole monitoring well at this parcel will not be acceptable due to the vast difference in historical concentrations between M18MW22 and M18MW23. Historic 2011 benzene concentrations for M18MW23 were 775 ppb and 664 ppb while 2011 concentrations for M18MW22 were 1.81 ppb and 1.65 ppb. The Department cannot approve the use of PDBS sampling only for this parcel. Once M18MW23 is located, the Department can approve the use of both PDBS and low-flow sampling for comparison purposes.*

I. RESPONSE: M18MW23 has been located and will be sampled using PDB methodology during the 2014 annual sampling event, as the historical concentrations of benzene are appropriate for the use of PDBs. FTMM believes that there is enough low flow data (four sampling events over two years) to characterize the concentrations of the volatile constituents in M18MW23 and that a low-flow PDB comparison is not needed for this well. FTMM will vertically profile this well using PDBs should the saturated screen be greater than 10 feet. In addition to the sampling of M18MW23, M18MW22 will also be sampled using PDB methodology and analyzed for VOCs.

J. FTMM-22 Former Wastewater Treatment Lime Pit

J. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of TCE. The August 2013 sampling of wells using low-flow and PDBS confirmed the continued exceedance of the GWQS for TCE in ground water. The report recommends quarterly VOC sampling of wells CWlMW27, CWlMW29, CWlMW31 and CWlMW281 using PDBS. The Department finds the proposal to be acceptable. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS results biasing low compared to low-flow results at the Fort Monmouth site.*

J. RESPONSE: Agreed.

K. FTMM-25 Landfill

K. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of various metals. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for metals. The metals are attributed to background conditions. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gauging for water elevation data.*

K. RESPONSE: Agreed.

L. FTMM-53 Building 699

L. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of benzene, PCE, TCE, TBA, VOC TICs and lead. The August 2013 sampling of wells using low-flow showed the exceedance of the GWQS for benzene, xylenes, PCE, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene and VOC TICs. The report recommends quarterly VOC sampling of wells*

699MW01, 699MW04, 699MW06, 699MW09, 699MW16, 699RW03, 699RW05 and 699RW11 using PDBS. The Department finds the proposal to be acceptable. For wells in which the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.

L. RESPONSE: Agreed.

M. <u>FTMM-54 Building 296</u>

M. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of benzene, lead and arsenic. The metals are attributed to background conditions. The August 2013 sampling of wells using low-flow showed an exceedance of the GWQS for benzene. The report recommends annual VOC sampling of wells 269MW04 and 296MW06 using PDBS. The Department finds the proposal to be acceptable. For wells in which the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.*

M. RESPONSE: Agreed.

N. <u>FTMM-55 Building 290</u>

N. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of arsenic and lead. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for lead. The metals are attributed to background conditions. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gauging for water elevation data.*

N. RESPONSE: Agreed.

O. <u>FTMM-56 Building 80</u>

O. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of chlordane, arsenic, lead and cadmium. The August 2013 sampling of wells was conducted for lead only using low-flow. There were no exceedances of lead. The report recommends one additional sampling round of well 80MW02 for chlordane and 80MW05 for lead. The Department finds the recommendation for well 80MW02 to be acceptable. The Department disagrees with the recommendation to sample well 80MW05 for lead only. The last low-flow sampling event in August 2011 had lead, arsenic and cadmium exceeding both the GWQS and background concentrations. Well 80MW05 shall be sampled during the next round for TAL metals.*

O. RESPONSE: Acknowledged. FTMM will modify the analysis method from lead only to lead, arsenic and cadmium at well 80MW05.

P. <u>FTMM-57 Building 108</u>

P. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of lead. In the August 2013 sampling event, there were no exceedances of lead in ground water. The report recommends two additional sampling rounds of well 108MW04 for lead. The Department finds the recommendation acceptable.*

P. RESPONSE: Agreed.

Q. <u>FTMM-58 Building 2567</u>

Q. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of TBA in wells 2567MW01 and 2567MW03. The August 2013 sampling results using low-flow and PDBS were below the GWQS for TBA. The report recommends two annual sampling events for TBA analyses of wells 2567MW01 and 2567MW03 using low-flow. The Department finds the proposal to be acceptable.*

Q. RESPONSE: Agreed.

R. <u>FTMM-59 Building 1122</u>

R. COMMENT: *Historic sampling at this parcel revealed no GWQS exceedances for VOCs. The August 2013 sampling results of wells using PDBS showed no exceedance of VOCs. The text of the report recommends VOC sampling of well 1122MW07 for one additional sampling round to confirm the 2013 results because August 2013 was the first time this well was sampled. The Department finds the proposal to be acceptable. The Department also notes that there is a discrepancy between the recommendation in the text and the recommendation in Table 7. Table 7 recommends that sampling at this parcel be discontinued. Table 7 shall be amended to indicate well 1122MW07 will be sampled for VOCs using PDBS methodology.*

R. RESPONSE: Monitoring well 1122MW07 will be sampled for one additional round during the 2014 annual sampling event using PDB methods. The sample will be analyzed for VOCs. Table 7 has been amended and provided as **Attachment B**.

S. <u>FTMM-61 Building 283</u>

S. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of metals, benzene and VOC TICs in 283MW02. The August 2013 sampling of wells using low-flow for VOCs and lead showed no exceedances. The report recommends VOC sampling of well 283MW02 for one additional sampling round using PDBS methodology to confirm the 2013 results. The Department finds the proposal to be conditionally acceptable. If the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. If a decision is made to terminate ground water sampling at this parcel based on PDBS results, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.*

S. RESPONSE: Acknowledged. Because the next annual sampling round is intended to be the last round, FTMM will sample 283MW02 using LFPS method.

T. <u>FTMM-64 Building 812</u>

T. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of benzene, vinyl chloride and metals. The August 2013 sampling of wells using low-flow for VOCs and lead showed no exceedances. The report recommends VOC sampling of well 812MW04 for one additional sampling round using PDBS methodology to confirm the 2013 results (however Section 5.0 recommends sampling be continued on an annual basis). The Department finds the proposal to be conditionally acceptable. If the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. If a decision is made to terminate ground water sampling at this parcel based on PDBS results, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.*

T. RESPONSE: Acknowledged. Because the next annual sampling round is intended to be the last round, FTMM will sample 812MW04 using LFPS method.

U. <u>FTMM-66 Building 886</u>

U. COMMENT: *Historic sampling at this parcel revealed GWQS exceedances of benzene, VOC TICs, arsenic and lead. The August 2013 sampling results from wells using low-flow showed the exceedance of the GWQS for SVOC TICs. The report recommends that sampling at this parcel be discontinued. The Department finds the recommendation unacceptable. Total SVOC TICs exceeded the GWQS of 500 ppb in wells 886RW01 and 886RW06. Ground water monitoring of wells 886RW01, 886RW06 and 886RW08 shall continue for SVOC+TICs using low-flow methodology.*

U. RESPONSE: Agreed. FTMM will continue to monitor 886RW01, 886RW06 and 886RW08 at FTMM-66 for SVOC+TICs using the LFPS method for two additional annual rounds.

V. <u>FTMM-68 Building 700</u>

V. COMMENT: *There are no historic sampling results for this parcel. The August 2013 sampling results of wells using PDBS showed the exceedance of the GWQS for PCE, TCE, cis-l,2-DCE and vinyl chloride in wells 565MW01 and 565MW01D. The report recommends quarterly ground water sampling for VOC+TICs using PDBS for these 2 wells. The Department agrees with the recommendation of quarterly sampling, however, has concerns regarding the use of PDBS for long-term monitoring at this parcel. Unlike the other Fort Monmouth parcels, there are no historical ground water sampling data for comparison with the PDBS results. The DEP's Field Sampling Procedures Manual states that "the intended application of Passive Diffusion Bag Samplers (PDBS) is for long-term monitoring of volatile organic compounds (VOCs) in ground water at well-characterized sites." The Department would find long-term sampling of the wells using PDBS acceptable if low-flow sampling is conducted concurrently once or twice for comparison.*

V. RESPONSE: Fort Monmouth agrees that FTMM-68 has not been fully characterized, however a remedial investigation (RI) is proposed for this site in the near future and the sampling of existing and proposed wells using the LFPS method is proposed in the RI. In the meantime Fort Monmouth proposes to continue to use PDBs to characterize the concentrations. The two existing wells are located in the potential source area and the detected VOCs have a high enough concentration that PDBs, while they tend to bias low, can effectively capture the nature of the VOC concentrations. A work plan for the RI has been submitted to NJDEP and is awaiting approval. During the RI the two existing wells along with new wells will be sampled using LFPS methods and a PDB/LFPS comparison will be made at that time. Additionally, once the RI is complete, a revised long-term monitoring plan will be submitted.

W. GENERAL COMMENT/STATEMENT:

Finally, each of the above comments speak only to the ground water findings and recommendations included in the referenced submittal, rather than to the ground water at the entire site.

W. RESPONSE: Acknowledged.

Please contact me if you have any questions.

Sincerely,

Wanda Green

Wanda Green
BRAC Environmental Coordinator
OACSIM – U.S. Army Fort Monmouth

Cc: Parsons
USACE

Encl

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Case Management
Mail Code 401-05F
P.O. Box 420
Trenton, New Jersey 08625-0420
Telephone: 609-633-1455

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

February 5, 2015

Wanda Green
BRAC Environmental Coordinator
OACSIM – U.S. Army Fort Monmouth
PO Box 148
Oceanport, NJ 07757

Approval

Re: *November 26, 2014 Response to Comments –on the Final Baseline Ground Water Sampling Report (August 2013)*
Fort Monmouth
Monmouth County
PI # G000000032
Activity Number: RPC000001

Dear Ms. Green:

The New Jersey Department of Environmental Protection (Department) has completed a review of the referenced Response to Comments dated November 26, 2014, submitted in response to the Department's comment letter dated July 3, 2014 regarding the Final Baseline Ground Water Sampling Report.

The *Response to Comments* agrees with or acknowledges the Department's comments for areas FTMM-03, FTMM-04, FTMM-05, FTMM-08, FTMM-12, FTMM-14, FTMM-22, FTMM-25, FTMM-53, FTMM-54, FTMM-55, FTMM-56, FTMM-57, FTMM-58, FTMM-59, FTMM-61, FTMM-64, and FTMM-66.

FTMM-18

The Department had indicated low-flow sampling must also be performed if Passive Diffusion Bag Sampling (PDBS) is conducted, for comparison purposes. The *Response to Comments* submittal contends as low-flow sampling has been historically conducted at this area, PDBS sampling only is appropriate. Based upon this reasoning, the Department agrees the performance via PDBS only is acceptable for the ensuing round of ground water sampling. The PDBS results are to be compared to the previous low-flow sampling results and presented in the forthcoming sampling report.

FTMM-68

The Department had expressed concern regarding the use of PDBS for long-term monitoring. FTMM-68 has not been fully characterized, and the use of PDBS for longer term monitoring is acceptable only for well characterized sites, as per the DEP's Field Sampling Procedures

Manual. As per information provided in the *Response to Comments* submittal, a Remedial Investigation to fully characterize the area is to be conducted in the near future using low-flow sampling methodology, and request approval for the use of PDBS to characterize contaminant concentrations in the interim. This is acceptable based on the stipulation that a full remedial investigation is to be performed. The November '14 *Response to Comments* (Section V), however, indicated the Remedial Investigation Workplan for FTMM-68 was awaiting DEP approval. Although some clarification was requested, the proposed remedial activities, soil and ground water, were approved for the FTMM-68 area via letter dated *January 8, 2014*, which addressed the RI/FS Workplan for FTMM-22, FTMM-53, FTMM-59 & FTMM-68.

If you have any questions, please contact me at (609)984-6606, or via email at Linda.Range@dep.nj.gov.

Sincerely,

Linda Range

Linda Range
Bureau of Case Management

cc: Joe Pearson, Calibre
Rick Harrison, FMERA
Joe Fallon, FMERA
Frank Barricelli, RAB

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Case Management
401 East State Street
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BOB MARTIN
Commissioner

November 14, 2016

William R. Colvin
BRAC Environmental Coordinator
OACSIM – U.S. Army Fort Monmouth
PO Box 148
Oceanport, NJ 07757

Re: *Annual (Fourth Quarter) 2015 Groundwater Sampling Report* dated *September 2016*
Fort Monmouth
Oceanport, Monmouth County
PI G000000032

Dear Mr. Colvin:

The New Jersey Department of Environmental Protection (NJDEP) has completed review of the referenced report, received September 29, 2016, prepared by Parsons to support the Remedial Investigation (RI), Feasibility Study (FS), and Decision Documents project at Fort Monmouth. An annual ground water sampling event was conducted at twelve (12) FTMM sites between September 30, 2015 and December 15, 2015. Sampling methodologies used included low-flow purging and sampling (LFPS) and passive diffusion bag samplers (PDBS). Comments on each FTMM site are as follows:

FTMM-02 Landfill

Historic sampling results at FTMM-02 have exhibited exceedances of the Ground Water Quality Standard (GWQS) for VOCs. Results from the 2015 annual sampling event exceeded the GWQS for MTBE and TBA in M2MW22. The report recommends biennial sampling of M2MW03, M2MW10 and M2MW22 as part of the biennial sampling requirements for the existing CEA for this site. The exiting CEA will also be revised to include TBA and MTBE. The recommendation is acceptable. At any point where a decision is made to terminate ground water sampling at this parcel, confirmatory sampling using low-flow methodology is required.

FTMM-05 Landfill

Historic sampling results at FTMM-05 have exhibited exceedances of the GWQS for PCE, TCE and vinyl chloride. Results from the 2015 annual sampling event exceeded GWQS for PCE in wells M5MW11, M5MW16, M5MW20 and M5MW23. The report recommends the establishment of a CEA, with biennial ground water sampling of wells M5MW11, M5MW16, M5MW20 and M5MW23 for VOCs as the "preferred remedy". Although an essential component of certain ground water remedies, a CEA is an institutional control rather than a remedy. A remedial action proposal, e.g. Monitored Natural Attenuation (MNA), in accordance with the applicable requirements of N.J.A.C. 7:26E-5.1, must be submitted to address the ground water contaminants. At such time as the formal proposal for a CEA is to be submitted, the proposal must be accompanied by a CEA/WRA Fact Sheet Form; the form and form instructions may be obtained from the Site Remediation website at www.nj.gov/dep/srp/srra/forms/. Submittal of a draft CEA/WRA Fact Sheet Form is recommended to allow for DEP confirmation of the CEA components and boundaries.

FTMM-08 Landfill

Historic sampling results at FTMM-08 exhibited exceedances of the GWQS for pesticides, benzene, PCE and lead. Results from the 2015 annual sampling event exceeded the GWQS for PCE, lead and pesticides. The 2016 RIR for FTMM-08, however, indicated manganese is also a contaminant of concern which requires monitoring. The submittal recommends the establishment of a CEA, with biennial ground water sampling for the contaminants of concern from selected wells. As above, although an essential component of certain ground water remedies, a CEA is an institutional control rather than a remedy. A remedial action proposal, e.g. Monitored Natural Attenuation (MNA), in accordance with the applicable requirements of N.J.A.C. 7:26E-5.1, must be submitted to address the ground water contaminants. At such time as the formal proposal for a CEA is to be submitted, the proposal must be accompanied by a CEA/WRA Fact Sheet Form; the form and form instructions may be obtained from the Site Remediation website at www.nj.gov/dep/srp/srra/forms/. Submittal of a draft CEA/WRA Fact Sheet Form is recommended to allow for DEP confirmation of the CEA components and boundaries.

FTMM-18 Landfill

Historic sampling results at FTMM-18 exhibited exceedances of the GWQS for benzene and 1,2-DCA. Results from the annual 2015 sampling event exceed the GWQS for benzene in well 296MW06. In the October 2015 RIR for FTMM-18, it was indicated that manganese is also a contaminant of concern, which requires monitoring. The report recommends the establishment of a CEA as the preferred remedy, with biennial ground water sampling for the contaminants of concern from selected wells. As above, although an essential component of certain ground water remedies, a CEA is an institutional control rather than a remedy. A remedial action proposal, e.g. Monitored Natural Attenuation (MNA), in accordance with the applicable requirements of N.J.A.C. 7:26E-5.1 and guidance documents, must be submitted to address the ground water contaminants. At such time as the formal proposal for a CEA is to be submitted, the proposal must be accompanied by a CEA/WRA Fact Sheet Form; the form and form instructions may be obtained from the Site Remediation website at www.nj.gov/dep/srp/srra/forms/. Submittal of a draft CEA/WRA Fact Sheet Form is recommended to allow for DEP confirmation of the CEA components and boundaries.

FTMM-22 - Former Wastewater Treatment Lime Pit

Historic sampling results at FTMM-22 exhibited exceedances of the GWQS for TCE and vinyl chloride. Results from the annual 2015 sampling event also exceeded the GWQS for TCE and vinyl chloride. Long-term ground water monitoring has been suspended while the remedial investigation/feasibility study (RI/FS) is being conducted. Upon completion of the RI/FS, a revised monitoring program will be proposed. The recommendation is acceptable.

FTMM-53 - Former Gas Station at Building 699

Historic sampling results at FTMM-53 exhibited exceedances of the GWQS for benzene, PCE, TCE, TBA, VOC TICs and lead. Results from the 2015 annual sampling event exceeded the GWQS for benzene, PCE, 1,2,4-trimethylbenzene, and VOC TICs. Long-term ground water monitoring has been suspended while the RI/FS is being conducted. Upon completion of the RI/FS, a revised monitoring program will be proposed. The recommendation is acceptable.

FTMM-56 – Building 80 Petroleum Release

Historic sampling results at FTMM-56 exhibited exceedances of the GWQS for pesticides and metals. Recently, one additional round of sampling from two wells was required; results from the 2015 annual sampling event found a single exceedance of the GWQS, of arsenic, however, the arsenic concentration is determined to be representative of background conditions, and no further action for ground water is necessary.

FTMM-57 - Building 108 UST Gasoline Release

Historic sampling results at FTMM-57 exhibited an exceedance of the GWQS for lead. Results from the 2015 annual sampling event were below the GWQS for lead; no further action for ground water is acceptable.

FTMM-58 - Building 2567 UST Gasoline

Historic sampling results at FTMM-58 exhibited exceedances of the GWQS for TBA. Results from the 2015 annual sampling event continue to exceed the GWQS for TBA. The submittal recommends continued sampling of well 2567MW01 and the addition of downgradient well 2567MW05 for TBA. One additional round of sampling is recommended for monitoring of 2567MW03 for TBA to confirm compliance for same. The recommendations are acceptable.

Evaluations regarding potential benzene exceedances relative to FTMM-58 continue under separate investigative efforts.

FTMM-64 - Building 812 UST Gasoline

Historic sampling results at FTMM-64 exhibited exceedances of the GWQS for benzene, vinyl chloride and metals. Although results from the 2015 annual sampling event were below the GWQS for contaminants of concern, due to previous analytical results, the submittal recommends continued annual sampling of well 812MWS04 for VOCs. The recommendation is acceptable. If a decision is made to terminate ground water sampling at FTMM-64, confirmatory sampling using the low-flow methodology will be required.

FTMM-66 - Building 886 Former AST

Historic sampling results from wells at FTMM-66 exhibited exceedances of the GWQS for SVOC TICs; results from the 2015 annual sampling event did not exceed the GWQS for SVOC TICs. The submittal recommends the ground water sampling at FTMM-66 be discontinued. The recommendation is acceptable; no further action for ground water is necessary.

FTMM-68 - Building 700 Former Dry Cleaners

Historic sampling results have shown exceedances of the GWQS for PCE, TCE, cis-1,2-DCE and vinyl chloride in ground water. Results from the 2015 annual sampling event confirmed these chlorinated VOCs continue to exceed GSQS in ground water. Long-term ground water monitoring has been suspended until such time as the RI/FS is completed. Upon completion of the RI/FS, a revised monitoring program will be proposed. The recommendation is acceptable.

Please contact this office if you have any questions.

Sincerely,

Linda S. Range

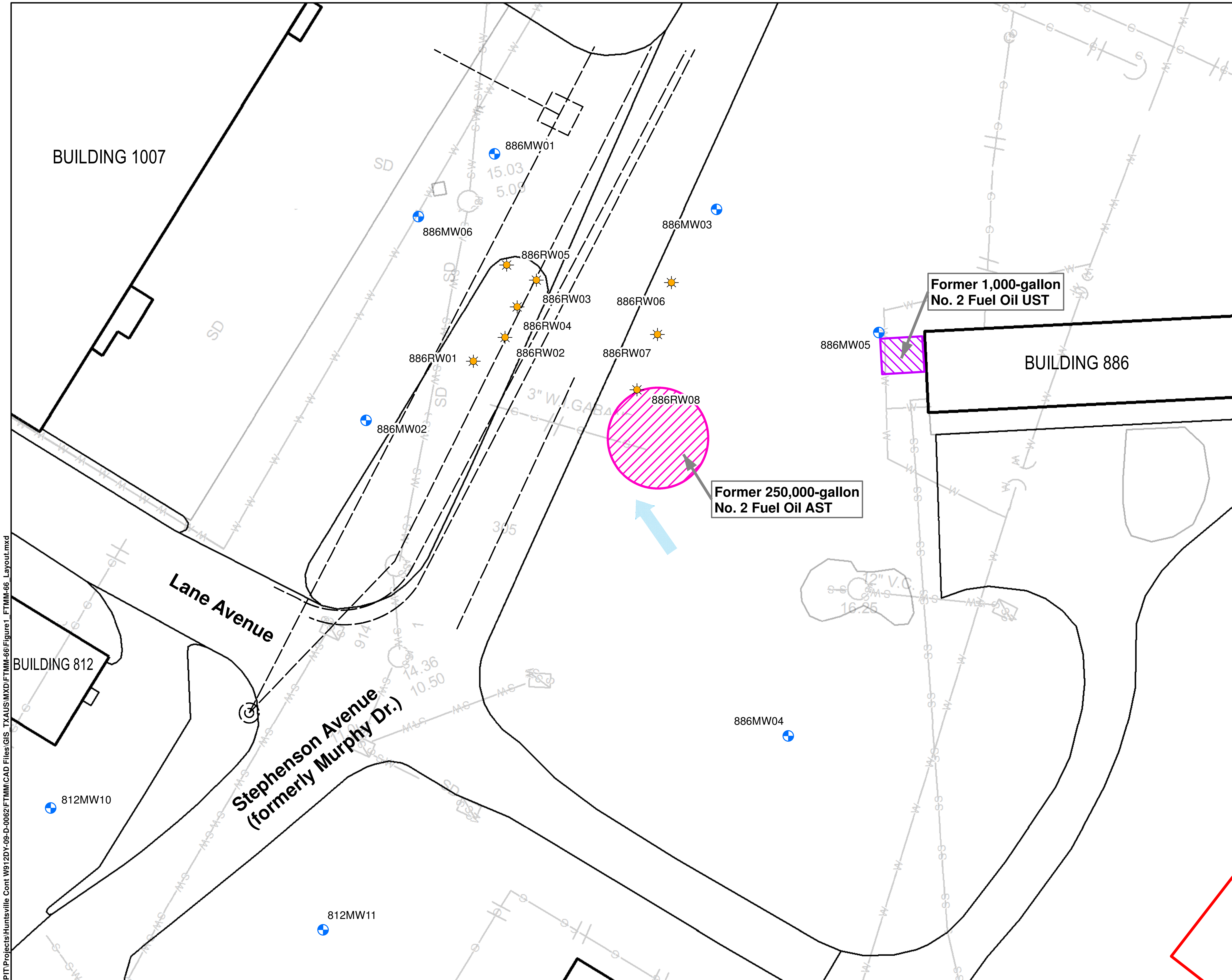
Linda S. Range

C: James Moore, USACE
Cris Grill, Parsons
Joe Pearson, Calibre
Rick Harrison, FMERA
Joe Fallon, FMERA
Daryl Clark, BGWPA

ATTACHMENT C

Figures

Figure 1: Layout of FTMM-66 (Fuel Oil Tanks at Building 886)
Figure 2: Extent of TPH > 5,100 mg/kg Remaining in Soil Following Phase 2 Excavation



LEGEND:

- Shallow Monitoring Well
- Recovery Well
- W — Water Line
- SS — Sanitary Sewer Line
- SW — Storm Sewer Line
- G — Gas Line
- Estimated Groundwater Flow Direction
- — — Subsurface Electric Utility Lines

N

1 inch = 40 feet

0 20 40 80 Feet

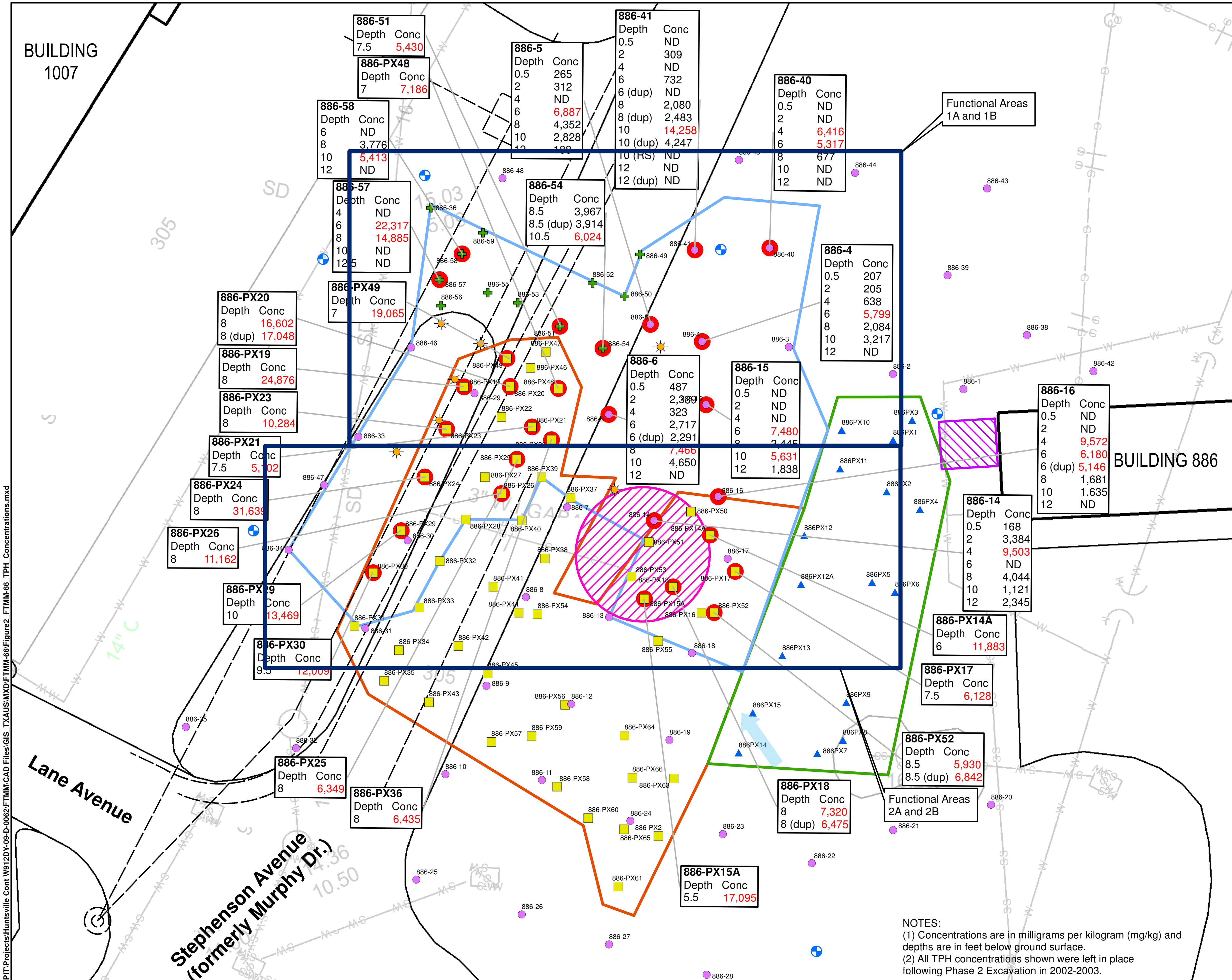
Source: FTMM Supplied CAD, 2013.

PARSONS 401 Diamond Drive NW, Huntsville AL	Fort Monmouth New Jersey

LAYOUT OF FTMM-66
(FUEL OIL TANKS AT BUILDING 886)

CREATED BY: RR	REVIEWED BY: JH
DATE: MAR. 2017	FIGURE NUMBER: FIGURE 1
PROJECT NUMBER: 748810-02170	FILE: Figure1_FTMM-66_Layout.mxd

P:\PIT\Projects\Huntsville Cont W912DY-09-D-0062\FTMM\CAD Files\GIS_TXAUS\MXD\FTMM-66\Figure1_FTMM-66_Layout.mxd



LEGEND:

- Phase 1 Post-Excavation Soil Sample (January - March 2002)
- Phase 1 RI Soil Boring (March - June 2002)
- Phase 2 RI Soil Boring (November 2002)
- Phase 2 Post-Excavation Soil Sample (November 2002 - February 2003)
- Shallow Monitoring Well
- Recovery Well
- Sample Location with TPH > 5,100 mg/Kg
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- Extent of Soil TPH > 5,100 mg/kg remaining after Phase 2 Excavation
- FTMM-66 Phase 1 Excavation
- FTMM-66 Phase 2 Excavation
- W Water Line
- SS Sanitary Sewer Line
- SW Storm Sewer Line
- G Gas Line
- Estimated Groundwater Flow Direction
- Subsurface Electric Utility Lines
- Functional Area

ND Not Detected
(dup) Field Duplicate Sample
(RS) Resampled at a Later Date

N

1 inch = 30 feet

0 12.5 25 50 75 Feet

Source: FTMM Supplied CAD, 2013.

NOTES:
(1) Concentrations are in milligrams per kilogram (mg/kg) and depths are in feet below ground surface.
(2) All TPH concentrations shown were left in place following Phase 2 Excavation in 2002-2003.

PARSONS
401 Diamond Drive NW, Huntsville AL

Fort Monmouth New Jersey

EXTENT OF TPH > 5,100 mg/Kg REMAINING IN SOIL FOLLOWING PHASE 2 EXCAVATION

CREATED BY: RR	REVIEWED BY: JH
DATE: MAR. 2017	FIGURE NUMBER: FIGURE 2
PROJECT NUMBER: 748810-02170	FILE: Figure2_FTMM-66_TPH_Concentrations.mxd

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ATTACHMENT D

Soil Data - Comparison to NJDEP Criteria

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 POST-EXCAVATION SOIL DATA											
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-PX1	886-PX2	886-PX3	886-PX4		886-PX5	886-PX6		886-PX7	886-PX8	886-PX9	
Field Sample ID				886-PX1	886-PX2	886-PX3	886-PX4	886-DUP -2003504	886-PX5	886-PX6	886-DUP -2004603	886-PX7/SW	886-PX8/EW	886-PX9/BOT	886-DUP -2006304
Sample Date				1/16/2002	1/16/2002	1/16/2002	1/16/2002		1/25/2002	1/25/2002		1/30/2002	1/30/2002	1/30/2002	
Sample Depth (feet bgs)				12-12.5	12-12.5	9.5-10	10-10.5	10-10.5 (Duplicate)	12-12.5	11-11.5	11-11.5 (Duplicate)	11-11.5	10.5-11	11.5-12	11.5-12 (Duplicate)
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA2	N	N	N	FA2	FA2	FA2	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**272.31**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)															
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

mg/kg = milligrams per kilogram

bgs = below ground surface.

ND = not detected.

-- = not analyzed.

NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 POST-EXCAVATION SOIL DATA									
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	886-PX10		886-PX11	886-PX12		886-PX12A		886-PX13	886-PX14	
Field Sample ID				886-PX10/NW	886-DUP -2007303	886-PX11/BOT	886-PX12/BOT	886-DUP -2008102	886-PX12A/BM	886-DUP -2011403	886-PX13/BM	886-PX14/SW	886-DUP -2013603
Sample Date				2/4/2002		2/4/2002	2/6/2002		2/26/2002		2/26/2002	3/6/2002	
Sample Depth (feet bgs)				10.5-11	10.5-11 (Duplicate)	12-12.5	11.5-12	11.5-12 (Duplicate)	12.5-13	12.5-13 (Duplicate)	12.5-13	10.5-11	10.5-11 (Duplicate)
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA1	FA2	FA2	FA2	FA2	FA2	FA2	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	**2,713.56**	**3,063.66**	ND	ND	ND	**216.97**	ND	**365.64**	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)													
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

mg/kg = milligrams per kilogram

bgs = below ground surface.

ND = not detected.

-- = not analyzed.

NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1	PHASE 1 REMEDIAL INVESTIGATION SOIL DATA												
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-PX15	886-1									886-2			
Field Sample ID				886-PX15/BOT	886-1 0-6 "	886-1 24 "	886-1 48 "	886-1 52 "	1-48 "	886-1 48 "	886-1 72 "	886-1-120 "	886-1-144 "	886-2 0-6 "	886-2 24 "	886-2 48 "	886-2 48 "
Sample Date				3/6/2002	3/9/2002				4/5/2002		3/9/2002	3/14/2002		3/9/2002			
Sample Depth (feet bgs)				12-12.5	0.5	2	4	4.3	4	4 (Duplicate)	6	10	12	0.5	2	4	4 (Duplicate)
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	N	N	N	N	N	FA1	FA1	FA1	FA1
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	**173**	**182**	**2,341**	ND	--	--	ND	**251**	ND	ND	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	-- [c/]	--	--	--	ND	ND	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	**4.4**	**2.2**	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA													
Boring ID / Sample	**NJDEP Residential [(1)]**	**NJDEP Non-Residential[(1)]**	**NJDEP Impact to Groundwater [(2)]**	886-2			886-3							886-4			
Field Sample ID				886-2 72 "	886-2-120 "	886-2-144 "	886-3 0-6 "	886-3 24 "	886-3 48 "	886-3 72 "	886-3-120 "	886-3-120 "	886-3-144 "	886-4 0-6 "	886-4 24 "	886-4 48 "	886-4 72 "
Sample Date				3/9/2002	3/14/2002		3/9/2002				3/14/2002			3/10/2002			
Sample Depth (feet bgs)				6	10	12	0.5	2	4	6	10	10 (Duplicate)	12	0.5	2	4	6
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	ND	ND	ND	ND	**730**	**652**	ND	**208**	**206**	**639**	**5,800**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

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NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA														
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-4				886-5								886-6		
Field Sample ID				4-72"	886-4 96 "	886-4 120 "	886-4 144 "	886-5 0-6 "	886-5 24 "	886-5 48 "	886-5 72 "	5-72"	886-5 96 "	886-5 120 "	886-5 144 "	886-6 0-6 "	886-6 24 "	886-6 48 "
Sample Date				4/5/2002	3/10/2002			3/10/2002				4/5/2002	3/10/2002			3/10/2002		
Sample Depth (feet bgs)				6	8	10	12	0.5	2	4	6	6	8	10	12	0.5	2	4
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	--	**2,085**	**3,218**	ND	**265**	**312**	ND	**6,888**	--	**4,352**	**2,829**	**188**	**487**	**2,340**	**324**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																		
1,1,2,2-Tetrachloroethane	1	3	0.007	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Acetone	70000	NA	19	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Benzene	2	5	0.005	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Chloroform	0.6	2	0.4	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	**2.2**	--	--	--	--	--	--	--	**3.4**	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Styrene	90	260	3	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Toluene	6300	91000	7	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	ND	--	--	--	--	--	--	--	ND	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
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NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA														
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	886-6						886-7								886-8
Field Sample ID				886-6 72 "	886-6 72 "	886-6 96 "	6-96"	886-6 120 "	886-6 144 "	886-7 0-6 "	886-7 24 "	886-7 48 "	886-7 72 "	7-72 "	886-7-96 "	886-7-120 "	886-7-144 "	886-8-0-6 "
Sample Date				3/10/2002			4/5/2002	3/10/2002		3/11/2002				4/5/2002	3/11/2002			3/11/2002
Sample Depth (feet bgs)				6	6 (Duplicate)	8	8	10	12	0.5	2	4	6	6	8	10	12	0.5
Excavated? (Y/N)				N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Within Functional Area? (FA1/FA2/N)				FA1	FA1	FA1	FA1	FA1	FA1	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**2,718**	**2,292**	**7,466**	--	**4,651**	ND	**363**	**5,621**	**4,552**	**6,191**	--	**186**	ND	ND	**447**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																		
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
Acetone	70000	NA	19	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
Benzene	2	5	0.005	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	ND	--	--	--	--	--	--	**0.42**	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	**4.2**	--	--	--	--	--	--	**3.9**	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
Styrene	90	260	3	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
Toluene	6300	91000	7	--	--	--	ND	--	--	--	--	--	--	ND	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	ND	--	--	--	--	--	--	**0.71**	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA														
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-8							886-9							
Field Sample ID				886-8-24 "	8-24 "	886-8-48 "	886-8-72 "	886-8-96 "	886-8-120 "	886-8-144 "	886-9-0-6 "	886-9-24 "	886-9-48 "	886-9-72 "	9-72 "	886-9-96 "	886-9-120 "	886-9-144 "
Sample Date				3/11/2002	4/8/2002	3/11/2002					3/11/2002				4/8/2002	3/11/2002		
Sample Depth (feet bgs)				2	2	4	6	8	10	12	0.5	2	4	6	6	8	10	12
Excavated? (Y/N)				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Within Functional Area? (FA1/FA2/N)				FA2	FA2	FA2	FA2	FA2	FA2	FA2	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**7,226**	--	**5,739**	**13,409**	**12,441**	**12,819**	ND	**211**	**299**	**872**	**9,693**	--	**11,025**	**177**	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																		
1,1,2,2-Tetrachloroethane	1	3	0.007	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
1,4-Dichlorobenzene	5	13	2	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
Acetone	70000	NA	19	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
Benzene	2	5	0.005	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
Chloroform	0.6	2	0.4	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
Dibromochloromethane	3	8	0.005	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
Ethylbenzene	7800	110000	13	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	**4.2**	--	--	--	--	--	--	--	--	--	**3**	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
Styrene	90	260	3	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
Tetrachloroethylene	2	5	0.005	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
Toluene	6300	91000	7	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--
Xylenes (Total)	12000	170000	19	--	ND	--	--	--	--	--	--	--	--	--	ND	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA													
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-10							886-11						
Field Sample ID				886-10-0-6 "	886-10-24 "	886-10-48 "	886-10-72 "	886-10-96 "	886-10-120 "	886-10-144 "	886-11-0-6 "	886-11-24 "	886-11-48 "	886-11-72 "	11-72 "	886-11-96 "	886-11-120 "
Sample Date				3/11/2002							3/12/2002				4/8/2002	3/12/2002	
Sample Depth (feet bgs)				0.5	2	4	6	8	10	12	0.5	2	4	6	6	8	10
Excavated? (Y/N)				N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	ND	ND	ND	ND	**168**	ND	**3,115**	**3,914**	--	**11,181**	**1,610**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	**2.1**	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	**2.4**	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	ND	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	**1.8**	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA													
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-11	886-12								886-13				
Field Sample ID				886-11-144 "	886-12-0-6 "	886-12-24 "	886-12-48 "	886-12-72 "	12-72 "	886-12-96 "	886-12-120 "	886-12-144 "	886-13-0-6 "	886-13-24 "	886-13-48 "	886-13-72 "	886-13-96 "
Sample Date				3/12/2002	3/12/2002				4/8/2002	3/12/2002			3/12/2002				
Sample Depth (feet bgs)				12	0.5	2	4	6	6	8	10	12	0.5	2	4	6	8
Excavated? (Y/N)				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	N	N	N	N	FA2	FA2	FA2	FA2	FA2
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	**985**	**240**	**5,662**	--	**2,252**	**534**	ND	ND	**7,869**	**7,831**	**7,694**	**8,958**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	**0.1**	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	**3.5**	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	ND	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	**0.27**	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

mg/kg = milligrams per kilogram

bgs = below ground surface.

ND = not detected.

-- = not analyzed.

NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA													
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-13			886-14									886-15	
Field Sample ID				13-96 "	886-13-120 "	886-13-144 "	886-14-0-6 "	886-14-24 "	886-14-48 "	14-48 "	14-48 "	886-14-72 "	886-14-96 "	886-14-120 "	886-14-144 "	886-15-0-6 "	886-15-24 "
Sample Date				4/8/2002	3/12/2002		3/12/2002			4/8/2002		3/12/2002				3/12/2002	
Sample Depth (feet bgs)				8	10	12	0.5	2	4	4	4 (Duplicate)	6	8	10	12	0.5	2
Excavated? (Y/N)				Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA1	FA1
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	--	**11,736**	**456**	**168**	**3,385**	**9,504**	--	--	ND	**4,045**	**1,122**	**2,345**	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Acetone	70000	NA	19	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Benzene	2	5	0.005	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Chloroform	0.6	2	0.4	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	**3.6**	--	--	--	--	--	**1.7**	**2.8**	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	**4**	--	--	--	--	--	**3.5**	**3.6**	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Styrene	90	260	3	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Toluene	6300	91000	7	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	**2.7**	--	--	--	--	--	**2.9**	**2.9**	--	--	--	--	--	--

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(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
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-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA													
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	886-15						886-16							
Field Sample ID				886-15-48 "	15-72 "	886-15-72 "	886-15-96 "	886-15-120 "	886-15-144 "	886-16-0-6 "	886-16-24 "	886-16-48 "	16-4'	16-4'	886-16-72 "	886-16-72 "	886-16-96 "
Sample Date				3/12/2002	4/5/2002	3/12/2002				3/12/2002			9/17/2002		3/12/2002		
Sample Depth (feet bgs)				4	6	6	8	10	12	0.5	2	4	4	4 (Duplicate)	6	6 (Duplicate)	8
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA1	FA1	FA1	FA1	FA1	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	--	**7,480**	**2,445**	**5,632**	**1,838**	ND	ND	**9,573**	--	--	**6,180**	**5,146**	**1,682**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
1,4-Dichlorobenzene	5	13	2	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
Acetone	70000	NA	19	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
Benzene	2	5	0.005	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
Chloroform	0.6	2	0.4	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
Dibromochloromethane	3	8	0.005	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
Ethylbenzene	7800	110000	13	--	ND	--	--	--	--	--	--	--	**0.82**	ND	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
Styrene	90	260	3	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
Tetrachloroethylene	2	5	0.005	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
Toluene	6300	91000	7	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--
Xylenes (Total)	12000	170000	19	--	ND	--	--	--	--	--	--	--	ND	ND	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

mg/kg = milligrams per kilogram

bgs = below ground surface.

ND = not detected.

-- = not analyzed.

NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA												
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	886-16		886-17									886-18	
Field Sample ID				886-16-120 "	886-16-144 "	886-17-0-6 "	886-17-24 "	886-17-48 "	886-17-72 "	17-72 "	886-17-96 "	886-17-96 "	886-17-120 "	886-17-144 "	886-18-0-6 "	886-18-24 "
Sample Date				3/12/2002		3/12/2002				4/8/2002	3/12/2002				3/12/2002	
Sample Depth (feet bgs)				10	12	0.5	2	4	6	6	8	8 (Duplicate)	10	12	0.5	2
Excavated? (Y/N)				N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Within Functional Area? (FA1/FA2/N)				FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**1,635**	ND	ND	ND	**11,077**	**7,001**	--	**5,870**	**9,669**	**2,107**	**3,566**	ND	**222**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	ND	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	ND	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	ND	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	ND	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	ND	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	ND	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	ND	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	ND	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	ND	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	**3.7**	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	ND	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	ND	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	ND	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	ND	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	ND	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

mg/kg = milligrams per kilogram

bgs = below ground surface.

ND = not detected.

-- = not analyzed.

NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA													
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	886-18								886-19					
Field Sample ID				886-18-48 "	18-48 "	886-18-72 "	886-18-96 "	18-96 "	886-18-120 "	886-18-120 "	886-18-144 "	886-19-0-6 "	886-19-24 "	886-19-48 "	886-19-72 "	886-19-96 "	886-19-120 "
Sample Date				3/12/2002	4/8/2002	3/12/2002		4/8/2002	3/12/2002			3/12/2002					
Sample Depth (feet bgs)				4	4	6	8	8	10	10 (Duplicate)	12	0.5	2	4	6	8	10
Excavated? (Y/N)				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Within Functional Area? (FA1/FA2/N)				FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**5,888**	--	**3,106**	**5,233**	--	**1,958**	**2,380**	**3,814**	ND	ND	**230**	ND	ND	**245**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	**0.78**	--	--	ND	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	**3.5**	--	--	**3.5**	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	**0.78**	--	--	ND	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA												
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-19	886-20								886-21			
Field Sample ID				886-19-144 "	886-20-0-6 "	886-20-24 "	886-20-48 "	886-20-72 "	886-20-96 "	886-20-120 "	886-20-144 "	886-20-144 "	886-21-0-6 "	886-21-24 "	886-21-48 "	886-21-72 "
Sample Date				3/12/2002	3/14/2002								3/14/2002			
Sample Depth (feet bgs)				12	0.5	2	4	6	8	10	12	12 (Duplicate)	0.5	2	4	6
Excavated? (Y/N)				Y	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**945**	ND	ND	ND	ND	ND	ND	ND	ND	**231**	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA												
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-21			886-22							886-23		
Field Sample ID				886-21-96 "	886-21-120 "	886-21-144 "	886-22-0-6 "	886-22-24 "	886-22-48 "	886-22-72 "	886-22-96 "	886-22-120 "	886-22-144 "	886-23-0-6 "	886-23-24 "	886-23-48 "
Sample Date				3/14/2002			3/14/2002							3/14/2002		
Sample Depth (feet bgs)				8	10	12	0.5	2	4	6	8	10	12	0.5	2	4
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**231**	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

	NJDEP Residential [1]	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	PHASE 1 REMEDIAL INVESTIGATION SOIL DATA												
Boring ID / Sample				886-23						886-24						
Field Sample ID				886-23-72 "	886-23-72 "	886-23-96 "	23-96 "	886-23-120 "	886-23-144 "	886-24-0-6 "	886-24-24 "	886-24-48 "	886-24-72 "	886-24-96 "	886-24-120 "	886-24-144 "
Sample Date				3/14/2002			4/8/2002	3/14/2002		3/14/2002						
Sample Depth (feet bgs)				6	6 (Duplicate)	8	8	10	12	0.5	2	4	6	8	10	12
Excavated? (Y/N)				N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	**4,500**	--	**1,431**	ND	ND	ND	**387**	**15,152**	**488**	ND	**872**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	ND	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	ND	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	ND	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	ND	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	ND	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	ND	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	ND	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	ND	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	ND	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	**3.3**	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	ND	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	ND	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	ND	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	ND	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	ND	--	--	--	--	--	--	--	--	--

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NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA												
Boring ID / Sample	**NJDEP Residential [(1)]**	**NJDEP Non-Residential[(1)]**	**NJDEP Impact to Groundwater [(2)]**	886-25								886-26				
Field Sample ID				886-25-0-6 "	886-25-24 "	25-2'	886-25-48 "	886-25-72 "	886-25-96 "	886-25-120 "	886-25-144 "	886-26-0-6 "	886-26-24 "	886-26-48 "	886-26-72 "	886-26-96 "
Sample Date				4/12/2002		9/17/2002	4/12/2002					4/12/2002				
Sample Depth (feet bgs)				0.5	2	2	4	6	8	10	12	0.5	2	4	6	8
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**284**	**1,109**	--	**308**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	ND	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	ND	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	ND	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	ND	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	ND	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	ND	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	ND	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	ND	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	ND	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	ND	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	ND	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	ND	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	ND	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	ND	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	ND	--	--	--	--	--	--	--	--	--	--

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Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
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NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA												
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-26		886-27							886-28			
Field Sample ID				886-26-120 "	886-26-144 "	886-27-0-6 "	886-27-24 "	886-27-48 "	886-27-72 "	886-27-96 "	886-27-120 "	886-27-144 "	886-28-0-6 "	886-28-24 "	886-28-48 "	886-28-72 "
Sample Date				4/12/2002		4/12/2002							4/12/2002			
Sample Depth (feet bgs)				10	12	0.5	2	4	6	8	10	12	0.5	2	4	6
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA												
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	886-28				886-29								886-30
Field Sample ID				886-28-96 "	886-28-120 "	886-28-144 "	886-28-144 "	886-29-0-6 "	886-29-24 "	886-29-48 "	29-4'	886-29-72 "	886-29-96 "	886-29-120 "	886-29-144 "	886-30-0-6 "
Sample Date				4/12/2002				4/18/2002			9/17/2002	4/18/2002				4/18/2002
Sample Depth (feet bgs)				8	10	12	12 (Duplicate)	0.5	2	4	4	6	8	10	12	0.5
Excavated? (Y/N)				N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Within Functional Area? (FA1/FA2/N)				N	N	N	N	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA2
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	ND	**206**	**201**	**9,426**	--	**4,970**	**11,105**	**467**	ND	**217**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	ND	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	ND	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	ND	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	ND	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	ND	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	ND	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	ND	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	ND	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	ND	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	ND	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	ND	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	ND	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	ND	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	ND	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	ND	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

mg/kg = milligrams per kilogram

bgs = below ground surface.

ND = not detected.

-- = not analyzed.

NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA													
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	886-30							886-31						
Field Sample ID				886-30-24 "	886-30-48 "	886-30-72 "	886-30-96 "	30-8'	886-30-120 "	886-30-144 "	886-31-0-6 "	886-31-24 "	886-31-48 "	886-31-72 "	31-6'	886-31-96 "	886-31-120 "
Sample Date				4/18/2002				9/17/2002	4/18/2002		4/18/2002				9/17/2002	4/19/2002	
Sample Depth (feet bgs)				2	4	6	8	8	10	12	0.5	2	4	6	6	8	10
Excavated? (Y/N)				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Within Functional Area? (FA1/FA2/N)				FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	**4,575**	**8,897**	--	**433**	ND	ND	ND	ND	**4,364**	--	**11,365**	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
Acetone	70000	NA	19	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
Benzene	2	5	0.005	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
Chloroform	0.6	2	0.4	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	**1.4**	--	--	--	--	--	--	ND	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
Styrene	90	260	3	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
Toluene	6300	91000	7	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	ND	--	--	--	--	--	--	ND	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA												
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-31	886-32							886-33				
Field Sample ID				886-31-144 "	886-32-0-6 "	886-32-24 "	886-32-48 "	886-32-72 "	886-32-96 "	886-32-120 "	886-32-144 "	886-33-0-6 "	886-33-24 "	886-33-48 "	886-33-72 "	886-33-96 "
Sample Date				4/19/2002	4/18/2002							4/19/2002				
Sample Depth (feet bgs)				12	0.5	2	4	6	8	10	12	0.5	2	4	6	8
Excavated? (Y/N)				Y	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA2	N	N	N	N	N	N	N	FA1	FA1	FA1	FA1	FA1
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	**504**	ND	ND	ND	**306**	ND	ND	ND	ND	ND	**295**	**266**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

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Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

mg/kg = milligrams per kilogram

bgs = below ground surface.

ND = not detected.

-- = not analyzed.

NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA												
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-33		886-34								886-35		
Field Sample ID				886-33-120 "	886-33-144 "	886-34-0-6 "	886-34-24 "	34-2'	886-34-48 "	886-34-72 "	886-34-96 "	886-34-120 "	886-34-144 "	886-35-0-6 "	886-35-24 "	886-35-48 "
Sample Date				4/19/2002		4/19/2002		9/17/2002	4/19/2002					4/19/2002		
Sample Depth (feet bgs)				10	12	0.5	2	2	4	6	8	10	12	0.5	2	4
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA1	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	**2,155**	--	ND	ND	ND	ND	ND	**182**	**174**	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	ND	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	ND	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	ND	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	ND	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	ND	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	ND	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	ND	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	ND	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	ND	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	ND	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	ND	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	ND	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	ND	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	ND	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	ND	--	--	--	--	--	--	--	--

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NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA													
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	886-35					886-36							886-37	
Field Sample ID				886-35-72 "	886-35-96 "	886-35-120 "	886-35-144 "	886-35-144 "	886-36-0-6 "	886-36-2'	886-36-4'	886-36-6'	886-36-8'	886-36-10'	886-36-12'	886-37 0-6 "	886-37 2'
Sample Date				4/19/2002					5/10/2002							6/10/2002	
Sample Depth (feet bgs)				6	8	10	12	12 (Duplicate)	0.5	2	4	6	8	10	12	0.5	2
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	FA1	FA1	FA1	FA1	FA1	FA1	FA1	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	**250**	**213**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA														
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-37					886-38							886-39		
Field Sample ID				886-37 4'	886-37 6'	886-37 8'	886-37 10'	886-37 12'	886-38 0-6 "	886-38 2'	886-38 4'	886-38 6'	886-38 8'	886-38 10'	886-38 12'	886-39 0-6 "	886-39 2'	886-39 4'
Sample Date				6/10/2002					6/10/2002							6/10/2002		
Sample Depth (feet bgs)				4	6	8	10	12	0.5	2	4	6	8	10	12	0.5	2	4
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																		
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA														
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-39				886-40								886-41		
Field Sample ID				886-39 6'	886-39 8'	886-39 10'	886-39 12'	886-40 0-6 "	886-40 2'	886-40 4'	40-4'	886-40 6'	886-40 8'	886-40 10'	886-40 12'	886-41 0-6 "	886-41 2'	886-41 4'
Sample Date				6/10/2002				6/10/2002			9/17/2002	6/10/2002				6/10/2002		
Sample Depth (feet bgs)				6	8	10	12	0.5	2	4	4	6	8	10	12	0.5	2	4
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				N	N	N	N	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	ND	ND	ND	**6,416**	--	**5,317**	**678**	ND	ND	ND	**310**	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																		
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA														
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	886-41					886-42							886-43		
Field Sample ID				886-41 6'	886-41 8'	41-8'	886-41 10'	886-41 12'	886-42 0-6 "	886-42 2'	886-42 4'	886-42 6'	886-42 8'	886-42 10'	886-42 12'	886-43 0-6 "	886-43 2'	886-43 4'
Sample Date				6/10/2002		9/17/2002	6/10/2002		6/18/2002							6/18/2002		
Sample Depth (feet bgs)				6	8	8	10	12	0.5	2	4	6	8	10	12	0.5	2	4
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA1	FA1	FA1	FA1	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**732**	**2,081**	--	**14,258**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																		
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
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NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA														
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-43				886-44							886-45			
Field Sample ID				886-43 6'	886-43 8'	886-43 10'	886-43 12'	886-44 0-6 "	886-44 2'	886-44 4'	886-44 6'	886-44 8'	886-44 10'	886-44 12'	886-45 0-6 "	886-45 2'	886-45 4'	886-45 6'
Sample Date				6/18/2002				6/18/2002							6/19/2002			
Sample Depth (feet bgs)				6	8	10	12	0.5	2	4	6	8	10	12	0.5	2	4	6
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				N	N	N	N	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																		
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
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NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA														
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	886-45			886-46							866-47				
Field Sample ID				886-45 8'	886-45 10'	886-45 12'	886-46 0-6 "	886-46 2'	886-46 4'	886-46 6'	886-46 8'	886-46 10'	886-46 12'	866-47-0-6"	866-47 2'	866-47 4'	866-47 6'	866-47 8'
Sample Date				6/19/2002			6/18/2002							6/18/2002				
Sample Depth (feet bgs)				8	10	12	0.5	2	4	6	8	10	12	0.5	2	4	6	8
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA2	FA2	FA2	FA2	FA2
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																		
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

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Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
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NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 1 REMEDIAL INVESTIGATION SOIL DATA									PHASE 2 REMEDIAL INVESTIGATION SOIL DATA					
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	866-47		886-48							886-41					
Field Sample ID				886-47 10'	886-47 12'	886-48 0-6 "	886-48 2'	886-48 4'	886-48 6'	886-48 8'	886-48 10'	886-48 12'	886-41-6	886-41-7.5	886-41-8'	886-41-10'	886-41-10	886-41-12
Sample Date				6/18/2002		6/26/2002							11/26/2002		11/14/2002		11/26/2002	
Sample Depth (feet bgs)				10	12	0.5	2	4	6	8	10	12	6	7.5	8	10	10	12
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA2	FA2	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2,172**	**2,484**	**4,248**	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)																		
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	**1.8**	--	**2.1**	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	ND	--	**0.32**	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	ND	--	ND	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	ND	--	**0.14**	--	--

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(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)
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Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 2 REMEDIAL INVESTIGATION SOIL DATA													
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-49	886-50	886-51	886-52	886-53	886-54			886-55	886-56			886-57	
Field Sample ID				886-49-7.5	886-50-7.5	886-51-7.5	886-52-7.5	886-53-7.5	886-54-8.5	886-54-8.5	886-54-10.5	886-55-8.5	886-56-6	886-56-8	886-56-12	886-57-4	886-57-6
Sample Date				11/7/2002	11/7/2002	11/7/2002	11/7/2002	11/7/2002	11/8/2002			11/8/2002	11/25/2002			11/25/2002	
Sample Depth (feet bgs)				7.5	7.5	7.5	7.5	7.5	8.5	8.5 (Duplicate)	10.5	8.5	6	8	12	4	6
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	ND	ND	**5,431**	ND	**1,187**	**3,968**	**3,914**	**6,024**	ND	ND	ND	ND	ND	**22,317**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
1,2-Dichlorobenzene	5300	59000	17	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
1,3-Dichlorobenzene	5300	59000	19	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
1,4-Dichlorobenzene	5	13	2	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
Acetone	70000	NA	19	--	--	ND	--	--	--	--	**3.4**	--	--	--	--	--	ND
Benzene	2	5	0.005	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
Chloroform	0.6	2	0.4	--	--	**3.4**	--	--	--	--	ND	--	--	--	--	--	**2.3**
Dibromochloromethane	3	8	0.005	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
Ethylbenzene	7800	110000	13	--	--	ND	--	--	--	--	ND	--	--	--	--	--	**3.4**
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
Styrene	90	260	3	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
Tetrachloroethylene	2	5	0.005	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
Toluene	6300	91000	7	--	--	ND	--	--	--	--	ND	--	--	--	--	--	ND
Xylenes (Total)	12000	170000	19	--	--	ND	--	--	--	--	ND	--	--	--	--	--	**3.6**

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 2 REMEDIAL INVESTIGATION SOIL DATA											PHASE 2 POST-EXCAVATION SOIL DATA		
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-57			886-58				886-59				886-PX14A/NW	886-PX15A/WW	886-PX16/SW
Field Sample ID				886-57-8	886-57-10	886-57-12.5	886-58-6	886-58-8	886-58-10	886-58-12	886-59-6	886-59-8	886-59-10	886-59-12	886-PX14A/NW	886-PX15A/WW	886-PX16/SW
Sample Date				11/25/2002			11/26/2002				11/26/2002				11/1/2002	11/1/2002	11/1/2002
Sample Depth (feet bgs)				8	10	12.5	6	8	10	12	6	8	10	12	5.5-6	5-5.5	7.5-8
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA1	FA2	FA2	FA2
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**14,885**	ND	ND	ND	**3,777**	**5,414**	ND	ND	ND	ND	ND	**11883.9**	**17095.89**	**4761.43**
Detected Volatile Organic Compounds (VOCs) (mg/kg)																	
1,1,2,2-Tetrachloroethane	1	3	0.007	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	**0.032**
1,2-Dichlorobenzene	5300	59000	17	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	ND
1,3-Dichlorobenzene	5300	59000	19	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	**0.017**
1,4-Dichlorobenzene	5	13	2	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	ND
Acetone	70000	NA	19	ND	--	--	--	--	ND	--	--	--	--	--	**0.92**	**0.94**	**0.81**
Benzene	2	5	0.005	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	ND
Chloroform	0.6	2	0.4	**1.9**	--	--	--	--	**2.1**	--	--	--	--	--	ND	ND	ND
Dibromochloromethane	3	8	0.005	ND	--	--	--	--	ND	--	--	--	--	--	ND	**0.072**	ND
Ethylbenzene	7800	110000	13	**3.1**	--	--	--	--	ND	--	--	--	--	--	**0.06**	**0.39**	ND
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	ND
Methyl tertiary butyl ether (MTBE)	110	320	0.2	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	ND
Styrene	90	260	3	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	**0.011**
Tetrachloroethylene	2	5	0.005	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	ND
Toluene	6300	91000	7	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	ND
Xylenes (Total)	12000	170000	19	**3.4**	--	--	--	--	ND	--	--	--	--	--	**0.257**	**0.57**	ND

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

mg/kg = milligrams per kilogram

bgs = below ground surface.

ND = not detected.

-- = not analyzed.

NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 2 POST-EXCAVATION SOIL DATA										
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-PX17/BOT	886-PX18/BOT		886-PX19-WW	886-PX20/NW		886-PX21/EW	886-PX22/BOT	886-PX23 W	886-PX24W	886-PX25 E
Field Sample ID				886-PX17/BOT	886-PX18/BOT		886-PX19-WW	886-PX20/NW		886-PX21/EW	886-PX22/BOT	886-PX23 W	886-PX24W	886-PX25 E
Sample Date				11/1/2002	11/1/2002		11/6/2002	11/6/2002		11/6/2002	11/6/2002	11/7/2002	11/7/2002	11/7/2002
Sample Depth (feet bgs)				7-7.5	7.5-8	7.5-8 (Duplicate)	7.5-8	7.5-8	7.5-8 (Duplicate)	7-7.5	9-9.5	7.5-8	7.5-8	7.5-8
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA2	FA2	FA2	FA1	FA1	FA1	FA1	FA1	FA1	FA2	FA2
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**6128.37**	**7320.07**	**6475.8**	**24876.54**	**16602.2**	**17048.12**	**5102.5**	ND	**10284.4**	**31639.09**	**6348.55**
Detected Volatile Organic Compounds (VOCs) (mg/kg)														
1,1,2,2-Tetrachloroethane	1	3	0.007	ND	**0.035**	**0.027**	ND	ND	**0.44**	ND	ND	ND	**0.33**	--
1,2-Dichlorobenzene	5300	59000	17	ND	ND	ND	ND	ND	ND	**0.41**	ND	ND	**0.31**	--
1,3-Dichlorobenzene	5300	59000	19	ND	**0.033**	ND	ND	ND	ND	**0.33**	ND	ND	ND	--
1,4-Dichlorobenzene	5	13	2	ND	ND	ND	ND	ND	ND	**0.33**	ND	ND	ND	--
Acetone	70000	NA	19	**0.86**	**0.75**	**0.75**	ND	ND	ND	ND	**1.6**	**1.7**	ND	--
Benzene	2	5	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Chloroform	0.6	2	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Dibromochloromethane	3	8	0.005	ND	**0.031**	ND	ND	ND	ND	ND	ND	ND	ND	--
Ethylbenzene	7800	110000	13	**0.024**	**0.056**	**0.051**	ND	ND	ND	ND	ND	**0.15**	**0.26**	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Styrene	90	260	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Tetrachloroethylene	2	5	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
Toluene	6300	91000	7	ND	**0.016**	ND	ND	ND	ND	ND	ND	ND	ND	--
Xylenes (Total)	12000	170000	19	**0.258**	**0.247**	**0.261**	ND	ND	ND	ND	ND	ND	ND	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
mg/kg = milligrams per kilogram
bgs = below ground surface.
ND = not detected.
-- = not analyzed.
NA = not applicable (criterion not available).
NLE = No limit established
NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 2 POST-EXCAVATION SOIL DATA											
Boring ID / Sample	**NJDEP Residential (1)**	**NJDEP Non-Residential(1)**	**NJDEP Impact to Groundwater (2)**	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	886-PX35 S	886-PX36 N	886-PX37 E
Field Sample ID				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	886-PX35 S	886-PX36 N	886-PX37 E
Sample Date				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	11/8/2002	11/11/2002	11/11/2002
Sample Depth (feet bgs)				7.5-8	9-9.5	9-9.5	9.5-10	9-9.5	9-9.5	10-10.5	10-10.5	10-10.5	7.5-8	7.5-8	8.0-8.5
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	N	FA1	FA2
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**11162.05**	ND	ND	**13469.45**	**12009.29**	ND	ND	ND	ND	ND	**6435.11**	**814.68**
Detected Volatile Organic Compounds (VOCs) (mg/kg)															
1,1,2,2-Tetrachloroethane	1	3	0.007	ND	--	--	ND	ND	--	--	--	--	--	ND	--
1,2-Dichlorobenzene	5300	59000	17	ND	--	--	ND	ND	--	--	--	--	--	ND	--
1,3-Dichlorobenzene	5300	59000	19	ND	--	--	ND	ND	--	--	--	--	--	ND	--
1,4-Dichlorobenzene	5	13	2	ND	--	--	ND	ND	--	--	--	--	--	ND	--
Acetone	70000	NA	19	ND	--	--	ND	ND	--	--	--	--	--	ND	--
Benzene	2	5	0.005	ND	--	--	ND	**0.086**	--	--	--	--	--	ND	--
Chloroform	0.6	2	0.4	ND	--	--	**1.7**	**1.5**	--	--	--	--	--	**1.6**	--
Dibromochloromethane	3	8	0.005	ND	--	--	ND	ND	--	--	--	--	--	ND	--
Ethylbenzene	7800	110000	13	ND	--	--	ND	ND	--	--	--	--	--	**0.32**	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	ND	--	--	ND	ND	--	--	--	--	--	ND	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	ND	--	--	ND	ND	--	--	--	--	--	ND	--
Styrene	90	260	3	ND	--	--	ND	ND	--	--	--	--	--	ND	--
Tetrachloroethylene	2	5	0.005	ND	--	--	ND	ND	--	--	--	--	--	ND	--
Toluene	6300	91000	7	ND	--	--	ND	ND	--	--	--	--	--	ND	--
Xylenes (Total)	12000	170000	19	ND	--	--	ND	**0.23**	--	--	--	--	--	**1**	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

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NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH
Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 2 POST-EXCAVATION SOIL DATA											
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	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
Field Sample ID				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
Sample Date				11/11/2002		11/11/2002	11/13/2002	11/13/2002	11/13/2002	11/13/2002	11/13/2002	11/13/2002	11/21/2002	11/21/2002	11/21/2002
Sample Depth (feet bgs)				8-8.5	8-8.5 (Duplicate)	9.5-10	8.5-9	8.5-9	9-9.5	7.5-8	8-8.5	8-8.5	8.5-9	6.5-7	6.5-7
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA2	FA2	FA2	FA2	FA2	FA2	N	FA1	N	FA1	FA1	FA1
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**430.77**	**1446.5**	ND	ND	ND	ND	ND	ND	ND	**569.08**	**4227.31**	**7186.7**
Detected Volatile Organic Compounds (VOCs) (mg/kg)															
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	ND	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	ND	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	ND	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	ND	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	**0.35**	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	ND	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	**1.4**	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	ND	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	ND	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	ND	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	ND	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	ND	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	ND	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	ND	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	ND	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

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Shaded cells = concentration exceeds all criteria
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Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 2 POST-EXCAVATION SOIL DATA										
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	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
Field Sample ID				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
Sample Date				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
Sample Depth (feet bgs)				6.5-7	8.5-9	8.5-9 (Duplicate)	8.5-9	8-8.5	8-8.5 (Duplicate)	8-8.5	7.5-8	9-9.5	9-9.5	9-9.5
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				FA1	FA2	FA2	FA2	FA2	FA2	FA2	FA2	FA2	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**19065.98**	**2910.5**	**5482.31**	**2088.35**	**5930.63**	**6842.01**	**230.57**	**776.88**	ND	ND	**540.71**
Detected Volatile Organic Compounds (VOCs) (mg/kg)														
1,1,2,2-Tetrachloroethane	1	3	0.007	ND	ND	ND	ND	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	ND	ND	ND	ND	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	ND	ND	ND	ND	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	ND	ND	ND	ND	--	--	--	--	--	--	--
Acetone	70000	NA	19	ND	ND	ND	ND	--	--	--	--	--	--	--
Benzene	2	5	0.005	ND	ND	ND	ND	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	**1.4**	**1.8**	**1.7**	**1.7**	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	ND	ND	ND	ND	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	**0.16**	ND	**1.3**	ND	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	ND	ND	ND	ND	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	ND	ND	ND	ND	--	--	--	--	--	--	--
Styrene	90	260	3	ND	ND	ND	ND	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	ND	ND	ND	ND	--	--	--	--	--	--	--
Toluene	6300	91000	7	ND	ND	ND	ND	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	**0.25**	ND	**1.4**	ND	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

mg/kg = milligrams per kilogram

bgs = below ground surface.

ND = not detected.

-- = not analyzed.

NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT D
SOIL DATA - COMPARISON TO NJDEP CRITERIA
SITE FTMM-66
FORT MONMOUTH, NEW JERSEY

				PHASE 2 POST-EXCAVATION SOIL DATA										
Boring ID / Sample	**NJDEP Residential [1]**	**NJDEP Non-Residential[1]**	**NJDEP Impact to Groundwater [2]**	886-PX58 S		886-PX59 B	886-PX60 W	886-PX61 S		886-PX62 E	886-PX63 E	886-PX64 N	886-PX65 B	886-PX66 B
Field Sample ID				886-PX58 S		886-PX59 B	886-PX60 W	886-PX61 S		886-PX62 E	886-PX63 E	886-PX64 N	886-PX65 B	886-PX66 B
Sample Date				2/3/2003		2/3/2003	2/14/2003	2/14/2003		2/14/2003	2/14/2003	2/14/2003	2/14/2003	2/14/2003
Sample Depth (feet bgs)				9-9.5	9-9.5 (Duplicate)	9.5-10	9-9.5	9-9.5	9-9.5 (Duplicate)	9-9.5	9-9.5	8.5-9	10-10.5	10-10.5
Excavated? (Y/N)				N	N	N	N	N	N	N	N	N	N	N
Within Functional Area? (FA1/FA2/N)				N	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (mg/kg)	5,100	54,000	NLE	**370.97**	**1108.84**	ND	**193.33**	**1770.76**	**1014.14**	**4927.25**	ND	ND	ND	ND
Detected Volatile Organic Compounds (VOCs) (mg/kg)														
1,1,2,2-Tetrachloroethane	1	3	0.007	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	5300	59000	17	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	5300	59000	19	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	13	2	--	--	--	--	--	--	--	--	--	--	--
Acetone	70000	NA	19	--	--	--	--	--	--	--	--	--	--	--
Benzene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--
Chloroform	0.6	2	0.4	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	3	8	0.005	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	7800	110000	13	--	--	--	--	--	--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)	3100	44000	0.9	--	--	--	--	--	--	--	--	--	--	--
Methyl tertiary butyl ether (MTBE)	110	320	0.2	--	--	--	--	--	--	--	--	--	--	--
Styrene	90	260	3	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethylene	2	5	0.005	--	--	--	--	--	--	--	--	--	--	--
Toluene	6300	91000	7	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	12000	170000	19	--	--	--	--	--	--	--	--	--	--	--

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Groundwater Standard (NJDEP guidance document; Nov 2013)

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criteria

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mg/kg = milligrams per kilogram

bgs = below ground surface.

ND = not detected.

-- = not analyzed.

NA = not applicable (criterion not available).

NLE = No limit established

NJDEP extractable petroleum hydrocarbons (EPH) soil remediation criteria for TPH

Source: Versar, 2006.

ATTACHMENT E

Previous Reports

1. *Remedial Action Report for Soil and Groundwater Contamination, Building 886,* Versar, January 2006
2. *Site 886 (FTMM-66) Remedial Action Progress Report (2nd Quarter 2003 through 4th Quarter 2008),* VEETech, P.C. July 2010
3. *Final Annual (Fourth Quarter) 2015 Groundwater Sampling Report, Fort Monmouth, Oceanport, Monmouth County, New Jersey*, Parsons, September 2016

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

Versar INC.
4700 South McClintock Drive, Suite 150
Tempe, Arizona 85282

Contract No. DACA 51-02-D-0007
Delivery Order No. 2V18

United States Army
Fort Monmouth, New Jersey

Remedial Action Report for Soil and Groundwater Contamination at Building 886

Fort Monmouth, New Jersey

January 13, 2006

PREPARED BY:

Versar INC.

4700 SOUTH MCCLINTOCK DRIVE, SUITE 150
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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 (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units, which are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand), while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown and Navesink Formations). The individual 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 (Zapecza, 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 (Zapecza, 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 (≤ 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 866 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 s**hows 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.

<u>Duplicate Samples</u>
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:

Estimated Annual Costs of Remedial Actions to be Performed at Building 886

TASK	**ESTIMATED COSTS**
1. Total Labor Cost	$ 3,200
2. Laboratory Cost	$ 12,925
TOTAL ESTIMATED COSTS	$ 16,125

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
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
	886-27-48"	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

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

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 = polyhloronated biphenyls; MDL = Method Detection Limit; ND = Not Detected;
ug/L = micrograms per liter, equivalent to parts per billoion (ppb); mg/kg = miligrams 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.

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 1 RA Soil Sampling Results

886

Fort Monmouth, New Jersey

Field Sample ID			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	Criterion	Units	2003505	2004603	2006304	2007303	2008102	2011403	2013603	2003501	2007301	2007302	2008101	2011401	2011402	2013601
TPH																
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 1 RA Soil Sampling Results

886

Fort Monmouth, New Jersey

Field Sample ID			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	Criterion	Units	2013602	2003502	2003503	2003504	2004601	2004602	2006301	2006302	2006303
TPH											
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 1 RI Soil Sampling Results

886

Fort Monmouth, New Jersey

Field Sample ID			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	Criterion	Units	2018811	2018810	2018806	2018803	2018503	2018507	2066502	2018804	2018807	2018808	2018812	2066503	2066504	2066505
VOCs																
1,1,2,2-Tetrachloroethane	34	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	5100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	5100	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	570	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	3	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	NLE	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1000	mg/kg	2.1	0.1	3.6	1.7	ND	ND	0.82	ND	0.78	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	ND	ND	ND	ND	ND	ND
Styrene	23	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	4	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	NLE	mg/kg	ND	ND	ND	ND	ND	ND	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 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			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	4/8/2002	3/9/2002	3/9/2002	3/9/2002	3/9/2002	3/9/2002
ANALYTE / Lab ID	Criterion	Units	2066506	2066507	2066508	2066509	2018504	2018505	2018506	2018508	2018805	2014601	2014602	2014603	2014604	2014605
VOCs																
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
TPH																
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 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	886-10-0-6"	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	3/12/2002	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
TPH																
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

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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
ANALYTE / Lab ID			2015304	2015305	2015308	2015313	2015314	2015309	2015310	2015311	2015312	2015315	2015320	2015321	2015316	2015317
TPH																
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

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Fort Monmouth, New Jersey

Field Sample ID			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
ANALYTE / Lab ID	Criterion	Units	2015318	2015319	2015322	2015327	2015328	2015323	2015324	2015325	2015326	2015329	2015334	2015335	2015330	2015331
TPH																
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

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Fort Monmouth, New Jersey

Field Sample ID			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
ANALYTE / Lab ID	Criterion	Units	2015332	2015333	2015336	2015341	2015342	2015337	2015338	2015339	2015340	2015343	2015348	2015349	2015344	2015345
TPH																
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

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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
ANALYTE / Lab ID			2015346	2015347	2015350	2015355	2015356	2015351	2015352	2015353	2015354	2015357	2015362	2015363	2015358	2015359
TPH																
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

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Fort Monmouth, New Jersey

Field Sample ID			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
ANALYTE / Lab ID	Criterion	Units	2015360	2015361	2014606	2014607	2014608	2014610	2015501	2015506	2015507	2015502	2015503	2015504	2015505	2015508
TPH																
Total Petroleum Hydrocarbons	10000	mg/kg	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

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Fort Monmouth, New Jersey

Field Sample ID			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
ANALYTE / Lab ID	Criterion	Units	2015513	2015514	2015538	2015509	2015539	2015510	2015511	2015512	2015515	2015520	2015521	2015516	2015517	2015518
TPH																
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

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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
ANALYTE / Lab ID			2015519	2015522	2015527	2015528	2015523	2015524	2015525	2015526	2015529	2015534	2015535	2015530	2015531	2015532
TPH																
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.

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Phase 1 RI Soil Sampling Results

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Fort Monmouth, New Jersey

Field Sample ID			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	Criterion	Units	2015533	2019701	2019706	2019707	2019702	2019703	2019704	2019705	2019708	2019713	2019714	2019709	2019710	2019711
TPH																
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			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
ANALYTE / Lab ID	Criterion	Units	2019712	2019715	2019720	2019721	2019716	2019717	2019718	2019719	2019722	2019727	2019728	2019723	2019724	2019725
TPH																
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

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Fort Monmouth, New Jersey

Field Sample ID			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	3/9/2002	3/9/2002	3/9/2002	3/9/2002	4/18/2002	4/18/2002
ANALYTE / Lab ID	Criterion	Units	2019726	2021101	2021106	2021107	2021102	2021103	2021104	2021105	2014611	2014612	2014613	2014614	2021108	2021113
TPH																
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	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
TPH																
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			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	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002	4/19/2002
ANALYTE / Lab ID	Criterion	Units	2021122	2021127	2021128	2021123	2021124	2021125	2021126	2021301	2021306	2021307	2021302	2021303	2021304	2021305
TPH																
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			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
ANALYTE / Lab ID	Criterion	Units	2021308	2021313	2021314	2021309	2021310	2021311	2021312	2021315	2021320	2021321	2021316	2021317	2021318	2021319
TPH																
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

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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	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
TPH																
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
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Fort Monmouth, New Jersey

Field Sample ID			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
ANALYTE / Lab ID	Criterion	Units	2035922	2035927	2035928	2035923	2035924	2035925	2035926	2035915	2035920	2035921	2035916	2035917	2035918	2035919
TPH																
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	886-4 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	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
TPH																
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			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	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002
ANALYTE / Lab ID	Criterion	Units	2035901	2035906	2035907	2035902	2035903	2035904	2035905	2037915	2037920	2037921	2037916	2037917	2037918	2037919
TPH																
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			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
ANALYTE / Lab ID	Criterion	Units	2037922	2037927	2037928	2037923	2037924	2037925	2037926	2037929	2037934	2037935	2037930	2037931	2037932	2037933
TPH																
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

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Fort Monmouth, New Jersey

Field Sample ID			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	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002	6/18/2002
ANALYTE / Lab ID	Criterion	Units	2038101	2038107	2038102	2038103	2038104	2038105	2037908	2037913	2037914	2037909	2037910	2037911	2037912	2037901
TPH																
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

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Fort Monmouth, New Jersey

Field Sample ID			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	6/26/2002	6/26/2002	6/26/2002	6/26/2002	6/26/2002	6/26/2002	6/26/2002	3/10/2002
ANALYTE / Lab ID	Criterion	Units	2037906	2037907	2037902	2037903	2037904	2037905	2039901	2039906	2039907	2039902	2039903	2039904	2039905	2014708
TPH																
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			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	3/11/2002
ANALYTE / Lab ID	Criterion	Units	2014713	2014714	2014709	2014710	2014711	2014712	2014715	2014720	2014721	2014716	2014717	2014718	2014719	2014901
TPH																
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			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
ANALYTE / Lab ID	Criterion	Units	2014902	2014903	2014904	2014906	2014907	2014905	2014908	2014913	2014914	2014909	2014910	2014911	2014912	2014915
TPH																
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			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	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	Criterion	Units	2014920	2014921	2014916	2014917	2014918	2014919	2018809	2014609	2014722	2018502	2018802	2019729	2021129	2021322
VOCs																
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
TPH																
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 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			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	Criterion	Units	2015364	2015542	2015365	2015543	2015544	2015366	2066510
VOCs									
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
TPH									
Total Petroleum Hydrocarbons	10000	mg/kg	5146.27	ND	9669.3	ND	652.01	2380.19	NA

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 4-3

Phase 1 RI Soil Sampling Exceedence Summary

886

Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units
TPH							
Total Petroleum Hydrocarbons	**10000**						
		886-11-96"				**Maximum Result: 11180.78**	mg/kg
				3/12/2002	2015305	11180.78	mg/kg
		886-13-120"				**Maximum Result: 11736.31**	mg/kg
				3/12/2002	2015320	11736.31	mg/kg
		886-17-48"				**Maximum Result: 11077.02**	mg/kg
				3/12/2002	2015345	11077.02	mg/kg
		886-24-72"				**Maximum Result: 15152.37**	mg/kg
				3/14/2002	2015532	15152.37	mg/kg
		886-29-96"				**Maximum Result: 11104.81**	mg/kg
				4/18/2002	2021105	11104.81	mg/kg
		886-31-96"				**Maximum Result: 11365.22**	mg/kg
				4/18/2002	2021119	11365.22	mg/kg
		886-41 10'				**Maximum Result: 14258.29**	mg/kg
				6/10/2002	2035906	14258.29	mg/kg
		886-8-120"				**Maximum Result: 12818.89**	mg/kg
				3/11/2002	2014913	12818.89	mg/kg
		886-8-72"				**Maximum Result: 13409.44**	mg/kg
				3/11/2002	2014911	13409.44	mg/kg
		886-8-96"				**Maximum Result: 12440.73**	mg/kg
				3/11/2002	2014912	12440.73	mg/kg
		886-9-96"				**Maximum Result: 11024.72**	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			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	11/8/2002	11/8/2002	11/8/2002
ANALYTE / Lab ID	Criterion	Units	2084904	2081203	2084905	2084902	2084903	2081202	2079602	2079603	2079604	2079605	2079606	2079804	2079803	2079805
VOCs																
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
TPH																
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 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 4-4

Phase 2 RI Soil Sampling Results

886

Fort Monmouth, New Jersey

Field Sample ID			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	11/26/2002	11/26/2002	11/26/2002	11/26/2002	11/26/2002	11/26/2002
ANALYTE / Lab ID	Criterion	Units	2084404	2084402	2084403	2084408	2084409	2084405	2084406	2084407	2084908	2084909	2084906	2084907	2084912	2084913
VOCs																
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
TPH																
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 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 4-4

Phase 2 RI Soil Sampling Results

886

Fort Monmouth, New Jersey

Field Sample ID			886-59-6	886-59-8	886-Dup (2079802)
Date Collected			11/26/2002	11/26/2002	11/8/2002
ANALYTE / Lab ID	Criterion	Units	2084910	2084911	2079802
TPH					
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
TPH							
Total Petroleum Hydrocarbons	**10000**						
		886-57-6				**Maximum Result: 22317.07**	mg/kg
				11/25/2002	2084406	22317.07	mg/kg
		886-57-8				**Maximum Result: 14885.1**	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			886-DUP (2077906)	886-DUP (2079105)	886-Dup (2080005)	886-Dup (2086503)	886-Dup (3002505)	886-Dup (3005705)	886-Dup (3007108)	886-PX14A/NW	886-PX15A/WW	886-PX16/SW	886-PX17/BOT	886-PX18/BOT	886-PX19/WW	886-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	Criterion	Units	2077906	2079105	2080005	2086503	3002505	3005705	3007108	2077901	2077902	2077903	2077904	2077905	2079101	2079102
VOCs																
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	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND
Chloroform	NLE	mg/kg	ND	ND	NA	1.7	NA	NA	NA	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	ND	ND	NA	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	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
TPH																
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 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 4-6

Phase 2 RA Post-Ex Soil Sampling Results

886

Fort Monmouth, New Jersey

Field Sample ID			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	11/8/2002	11/8/2002	11/8/2002	11/8/2002	11/8/2002	11/8/2002
ANALYTE / Lab ID	Criterion	Units	2079103	2079104	2079401	2079402	2079403	2079404	2079405	2079406	2079901	2079902	2079903	2079904	2079905	2079906
VOCs																
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
TPH																
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 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 4-6

Phase 2 RA Post-Ex Soil Sampling Results

886

Fort Monmouth, New Jersey

Field Sample ID			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	11/21/2002	11/21/2002	11/21/2002
ANALYTE / Lab ID	Criterion	Units	2079908	2080001	2080002	2080003	2080004	2080701	2080702	2080703	2080704	2080705	2080706	2083101	2083102	2083103
VOCs																
1,1,2,2-Tetrachloroethane	34	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
1,2-Dichlorobenzene	5100	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
1,3-Dichlorobenzene	5100	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
1,4-Dichlorobenzene	570	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Acetone	NLE	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.35	NA
Benzene	3	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Chloroform	NLE	mg/kg	NA	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.4	NA
Dibromochloromethane	NLE	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Ethylbenzene	1000	mg/kg	NA	0.32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Styrene	23	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Tetrachloroethylene	4	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Toluene	NLE	mg/kg	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
Xylenes (Total)	NLE	mg/kg	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
TPH																
Total Petroleum Hydrocarbons	10000	mg/kg	ND	6435.11	814.68	430.77	ND	ND	ND	ND	ND	ND	ND	569.08	4227.31	7186.7

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 4-6

Phase 2 RA Post-Ex Soil Sampling Results

886

Fort Monmouth, New Jersey

Field Sample ID			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	2/14/2003	2/14/2003	2/14/2003
ANALYTE / Lab ID	Criterion	Units	2083104	2086501	2086502	3002501	3002502	3002503	3002504	3005701	3005702	3005703	3005704	3007101	3007102	3007103
VOCs																
1,1,2,2-Tetrachloroethane	34	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	5100	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	5100	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	570	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NLE	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	3	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NLE	mg/kg	1.4	1.8	1.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NLE	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1000	mg/kg	0.16	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl ethyl ketone (2-Butanone)	1000	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary butyl ether (MTBE)	NLE	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	23	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	4	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NLE	mg/kg	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (Total)	NLE	mg/kg	0.25	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH																
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 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 4-6

Phase 2 RA Post-Ex Soil Sampling Results

886

Fort Monmouth, New Jersey

Field Sample ID			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	Criterion	Units	3007104	3007105	3007106	3007107
TPH						
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
TPH							
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			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	Criterion	Units	3006607	3006608	3006606	3006610	3006609	3006108	3006107	3006104	3006105	3006106	3006605	3006604	3006109	3006103
VOCs																
1,1,2,2-Tetrachloroethane	* 1	ug/L	ND	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	ND
1,3-Dichlorobenzene	600	ug/L	ND	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	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	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	ND	ND	0.47	ND	ND	ND	ND	ND
Dibromochloromethane	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	ug/L	ND	ND	ND	3.56	ND	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	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	ND
Styrene	100	ug/L	ND	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	ND
Toluene	1000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.45	ND	ND
Xylenes (Total)	* 1000	ug/L	ND	ND	ND	ND	ND	ND	2.12	ND	ND	2.26	ND	5.23	ND	2.11
TPH																
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
SVOCs																
1,2-Dichlorobenzene	600	ug/l	ND	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	ND
1,4-Dichlorobenzene	75	ug/l	ND	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	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	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	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	ND	ND	1.89	2.49	1.05	ND	2.66	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	ND
Pest/PCBs																
4,4'-DDE	.1	ug/l	ND	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	ND	0.04
gamma-BHC	.2	ug/l	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals																
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	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	ND
Cadmium	4	ug/l	1.55	2.38	ND	0.598	ND	ND	0.581	0.662	ND	0.609	ND	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 = polyhloronated biphenyls; MDL = Method Detection Limit; ND = Not Detected;
ug/L = micrograms per liter, equivalent to parts per billoion (ppb); mg/kg = miligrams 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.

Table 4-8

Groundwater Monitoring Well Sampling Results

886

Fort Monmouth, New Jersey

WELL ID			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	Criterion	Units	3006607	3006608	3006606	3006610	3006609	3006108	3006107	3006104	3006105	3006106	3006605	3006604	3006109	3006103
Metals																
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	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 = polyhloronated biphenyls; MDL = Method Detection Limit; ND = Not Detected;
ug/L = micrograms per liter, equivalent to parts per billoion (ppb); mg/kg = miligrams 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.

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 = polyhloronated biphenyls; MDL = Method Detection Limit; ND = Not Detected;
ug/L = micrograms per liter, equivalent to parts per billoion (ppb); mg/kg = miligrams 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.

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 = polyhloronated biphenyls; MDL = Method Detection Limit; ND = Not Detected;
ug/L = micrograms per liter, equivalent to parts per billoion (ppb); mg/kg = miligrams 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.

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
VOCs							
Benzene	**1**						
		886RW02				**Maximum Result: 2.16**	ug/L
				2/5/2003	3006107	2.16	ug/L
		886RW05				**Maximum Result: 1.23**	ug/L
				2/5/2003	3006106	1.23	ug/L
		886RW07				**Maximum Result: 1.17**	ug/L
				2/12/2003	3006604	1.17	ug/L
		Dup (3006103)				**Maximum Result: 1.09**	ug/L
				2/5/2003	3006103	1.09	ug/L
Methyl ethyl ketone (2-Butanone)	**300**						
		886RW01				**Maximum Result: 30039.7**	ug/L
				2/5/2003	3006108	30039.7	ug/L
		886RW08				**Maximum Result: 29510.7**	ug/L
				2/5/2003	3006109	29510.7	ug/L
SVOCs							
N-Nitrosodiphenylamine	**20**						
		886MW03				**Maximum Result: 38.99**	ug/l
				2/12/2003	3006606	38.99	ug/l
Metals							
Aluminum	**200**						
		886MW01				**Maximum Result: 212**	ug/l
				2/12/2003	3006607	212	ug/l
		886MW02				**Maximum Result: 240**	ug/l
				2/12/2003	3006608	240	ug/l
		886MW03				**Maximum Result: 1250**	ug/l
				2/12/2003	3006606	1250	ug/l
		886MW04				**Maximum Result: 288**	ug/l
				2/12/2003	3006610	288	ug/l
		886MW05				**Maximum Result: 458**	ug/l
				2/12/2003	3006609	458	ug/l
		886RW06				**Maximum Result: 269**	ug/l
				2/12/2003	3006605	269	ug/l
		Dup (3006603)				**Maximum Result: 205**	ug/l
				2/12/2003	3006603	205	ug/l
Arsenic	**8**						
		886MW02				**Maximum Result: 12.2**	ug/l
				2/12/2003	3006608	12.2	ug/l
Iron	**300**						
		886MW01				**Maximum Result: 67300**	ug/l
				2/12/2003	3006607	67300	ug/l
		886MW02				**Maximum Result: 97500**	ug/l
				2/12/2003	3006608	97500	ug/l
		886MW03				**Maximum Result: 6070**	ug/l
				2/12/2003	3006606	6070	ug/l
		886MW04				**Maximum Result: 15500**	ug/l
				2/12/2003	3006610	15500	ug/l
		886MW05				**Maximum Result: 307**	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
				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
Manganese	**50**						
		886MW01				Maximum Result: 900	ug/l
				2/12/2003	3006607	900	ug/l
		886MW02				Maximum Result: 3000	ug/l
				2/12/2003	3006608	3000	ug/l
		886MW03				Maximum Result: 400	ug/l
				2/12/2003	3006606	400	ug/l
		886MW04				Maximum Result: 203	ug/l
				2/12/2003	3006610	203	ug/l
		886MW05				Maximum Result: 54.7	ug/l
				2/12/2003	3006609	54.7	ug/l
		886RW01				Maximum Result: 495	ug/l
				2/5/2003	3006108	495	ug/l
		886RW02				Maximum Result: 635	ug/l
				2/5/2003	3006107	635	ug/l
		886RW03				Maximum Result: 827	ug/l
				2/5/2003	3006104	827	ug/l
		886RW04				Maximum Result: 276	ug/l
				2/5/2003	3006105	276	ug/l
		886RW05				Maximum Result: 529	ug/l
				2/5/2003	3006106	529	ug/l
		886RW06				Maximum Result: 773	ug/l
				2/12/2003	3006605	773	ug/l
		886RW07				Maximum Result: 620	ug/l
				2/12/2003	3006604	620	ug/l
		886RW08				Maximum Result: 1880	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

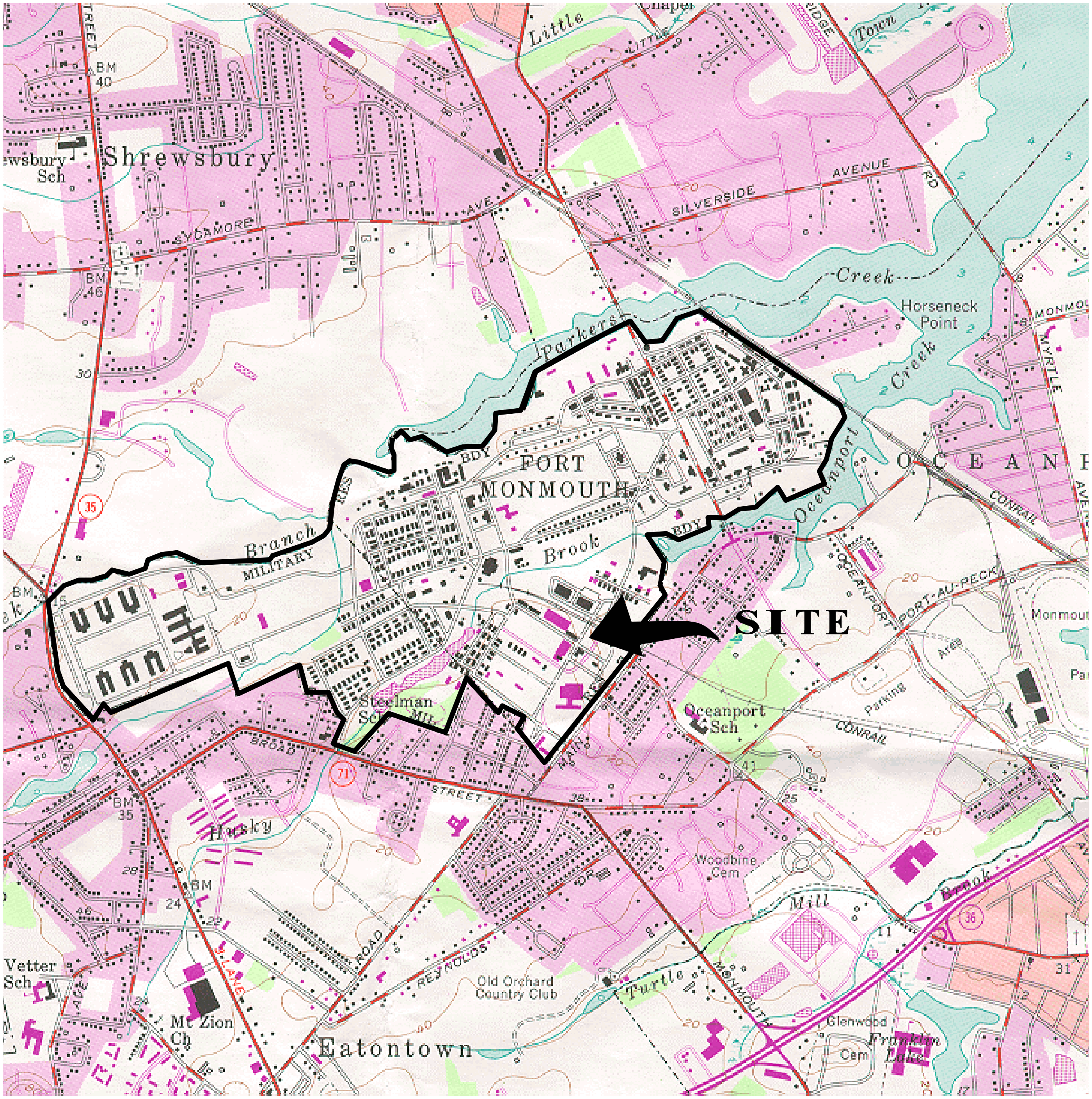
886

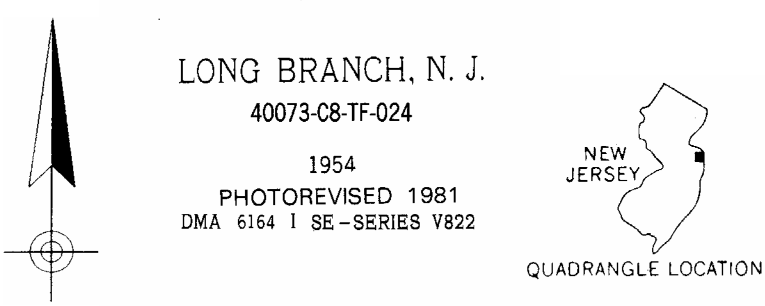
Fort Monmouth, New Jersey

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

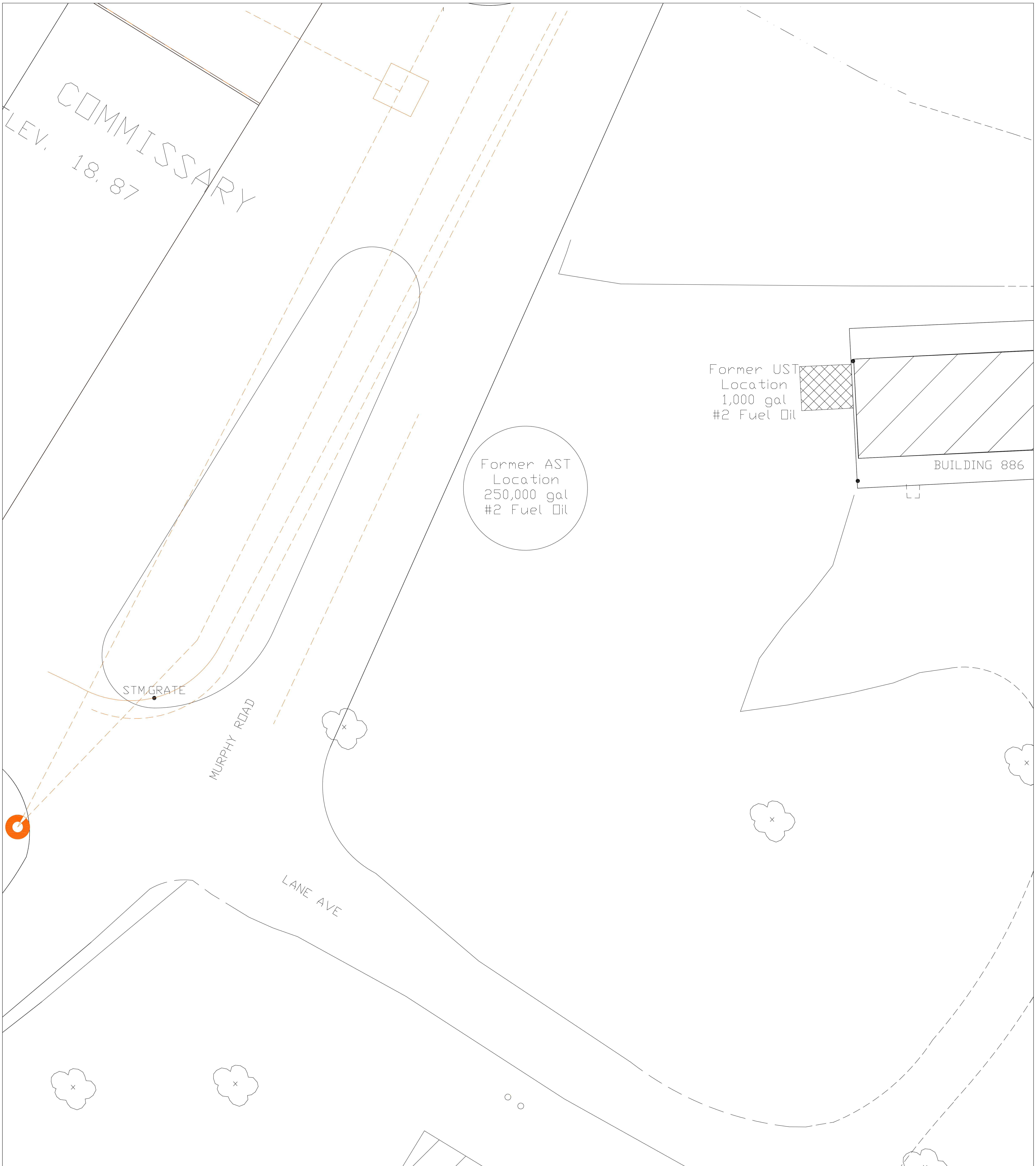




Mapped, edited and published by the Geological Survey

Figure 2-1
Site Location Map
Site 886
Fort Monmouth, New Jersey

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



Primary Circuit			
TREE		Primary Pole	
ROAD (PAVED/UNPAVED)		FENCE	
FENCE		BUILDING	
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:
Versar INC. 4700 SOUTH MCLINTOCK DRIVE TEMPE, AZ 85282 (480) 838-5352	DRAWING No.:
	FILE No.:
	SCALE: 1" = 20'
	SHEET 1 OF 1 REV.: A

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

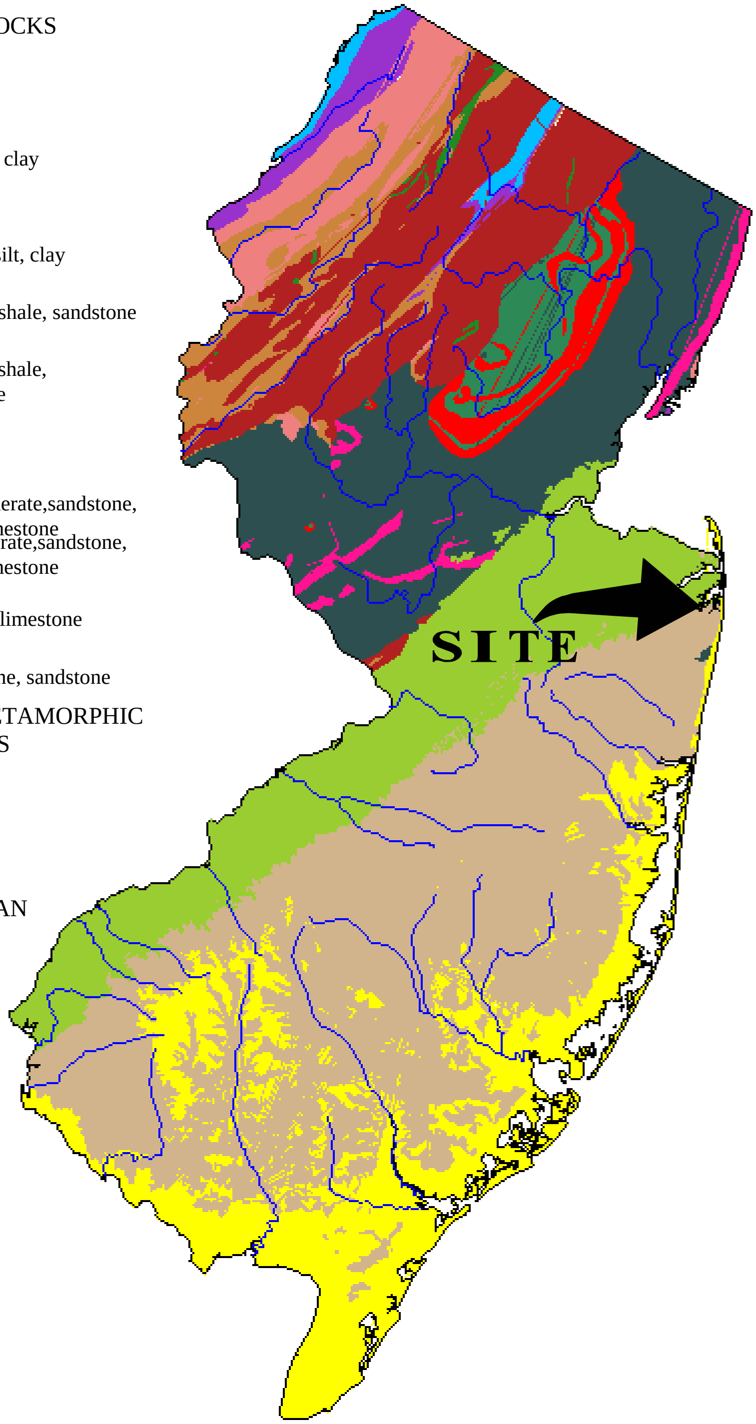
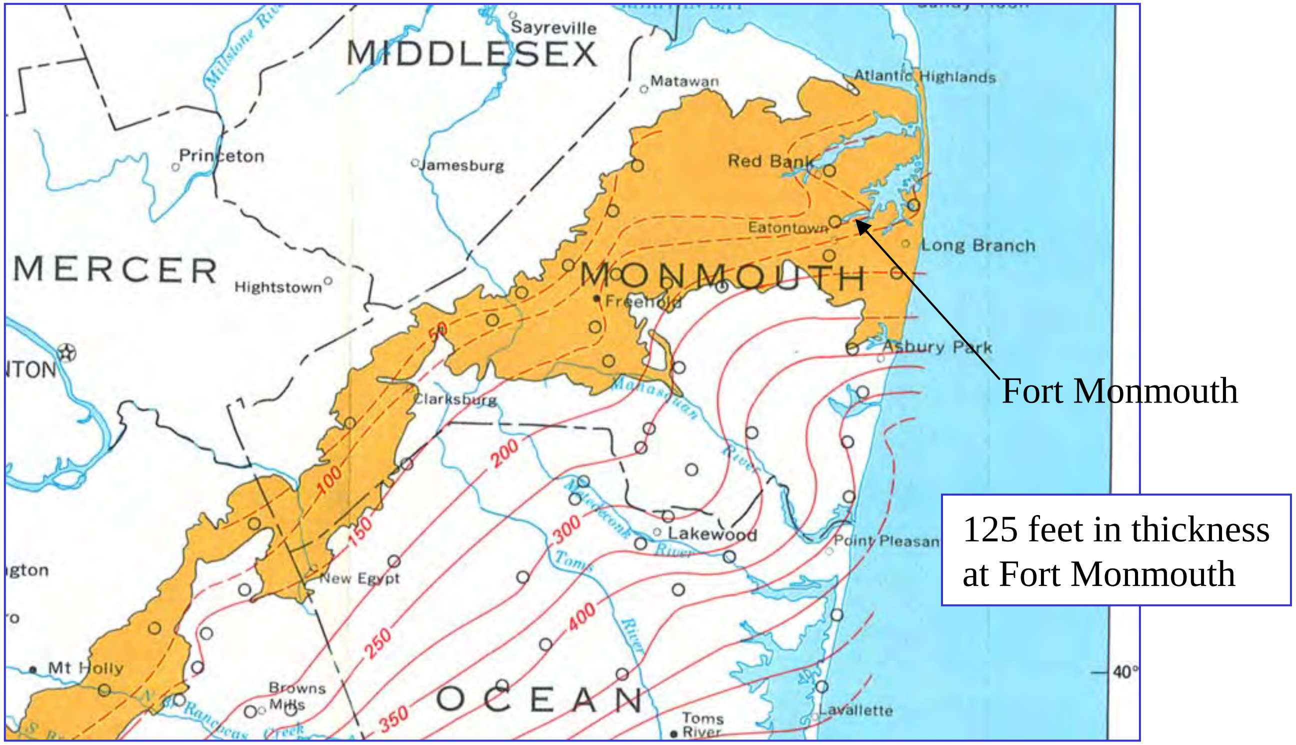


FIGURE 2-3
Geologic Map of New Jersey
Building 886 – Main Post
Fort Monmouth, New Jersey

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

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



EXPLANATION

Outcrop area of the Navesink Formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, and Manasquan Formation

600 — Line of equal thickness of the composite confining bed Dashed where approximately located. Interval 50 feet

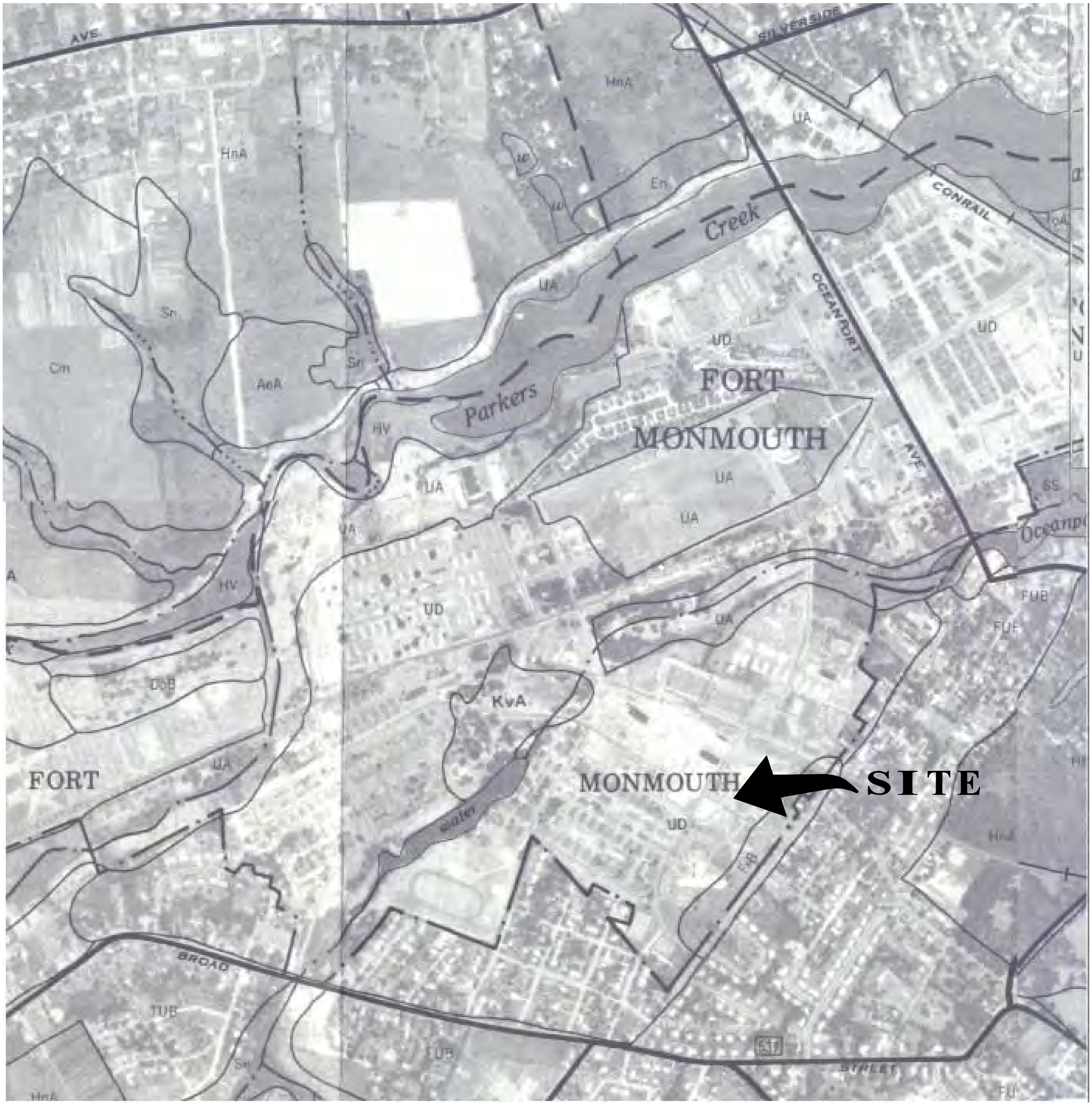
○ Well location

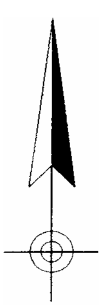
Source: Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain.* USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

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

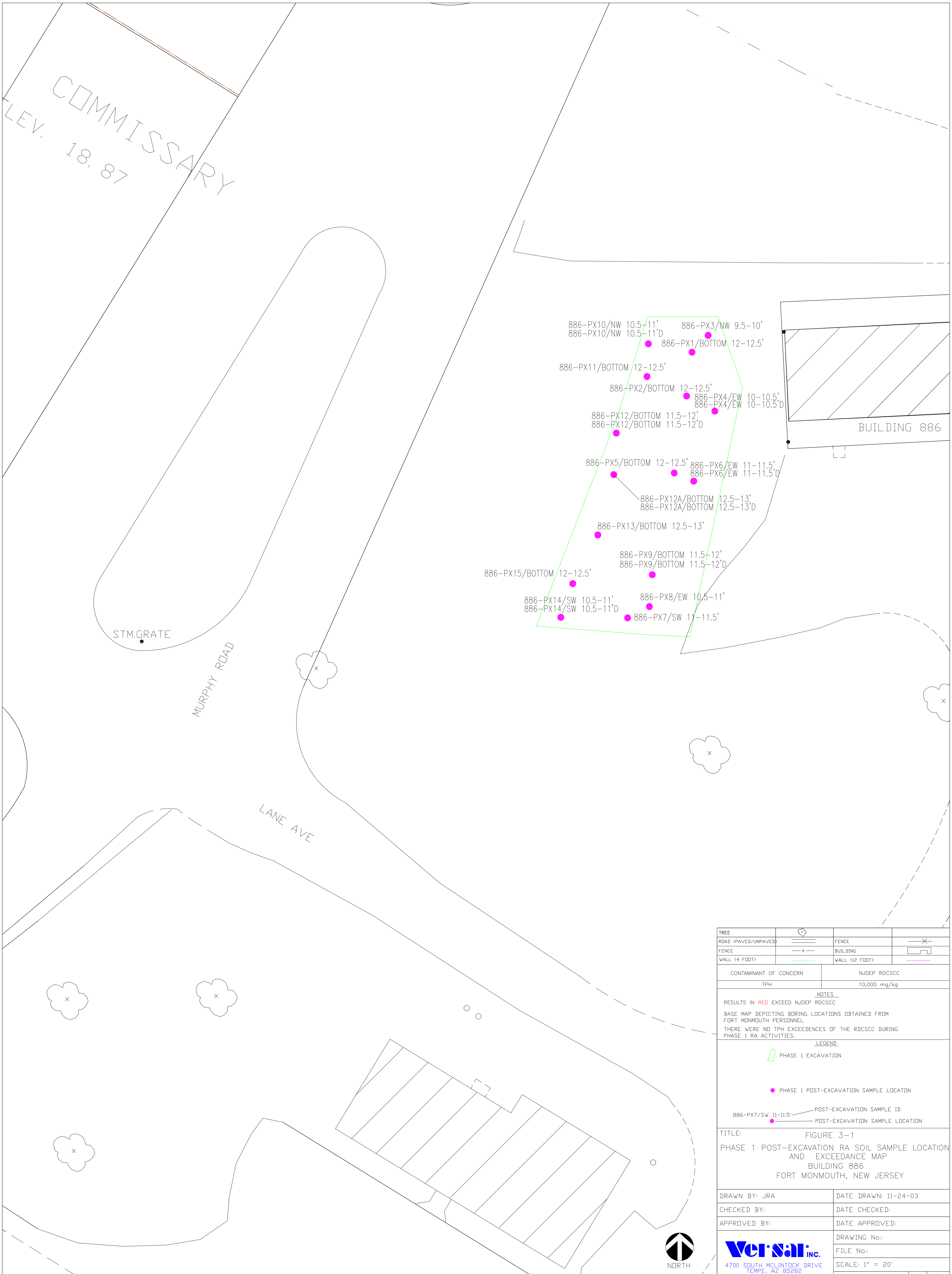




US Department of Agriculture
Soil Conservation Service
Soil Survey of Monmouth County, NJ
April 1989

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



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

NOTES

RESULTS IN RED EXCEED NJDEP RDCSCC

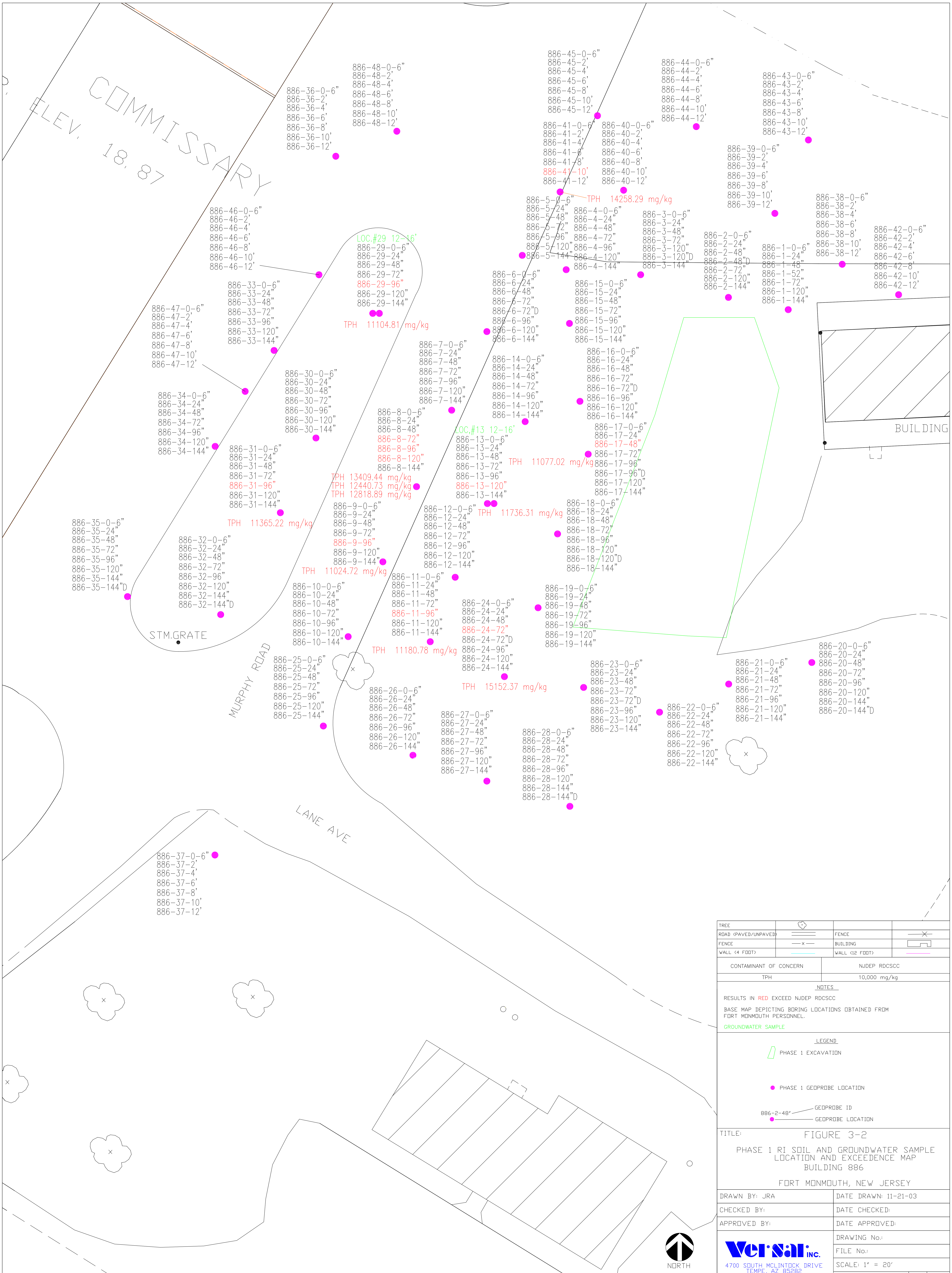
BASE MAP DEPICTING BORING LOCATIONS OBTAINED FROM FORT MONMOUTH PERSONNEL.

THERE WERE NO TPH EXCEEDENCES OF THE RDCSCC DURING PHASE 1 RA ACTIVITIES.

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



TREE			
ROAD (PAVED/UNPAVED)		FENCE	
FENCE		BUILDING	
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.

GROUNDWATER SAMPLE

LEGEND

PHASE 1 EXCAVATION

PHASE 1 GEOPROBE LOCATION

886-2-48" GEOPROBE ID

GEOPROBE LOCATION

TITLE: FIGURE 3-2

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

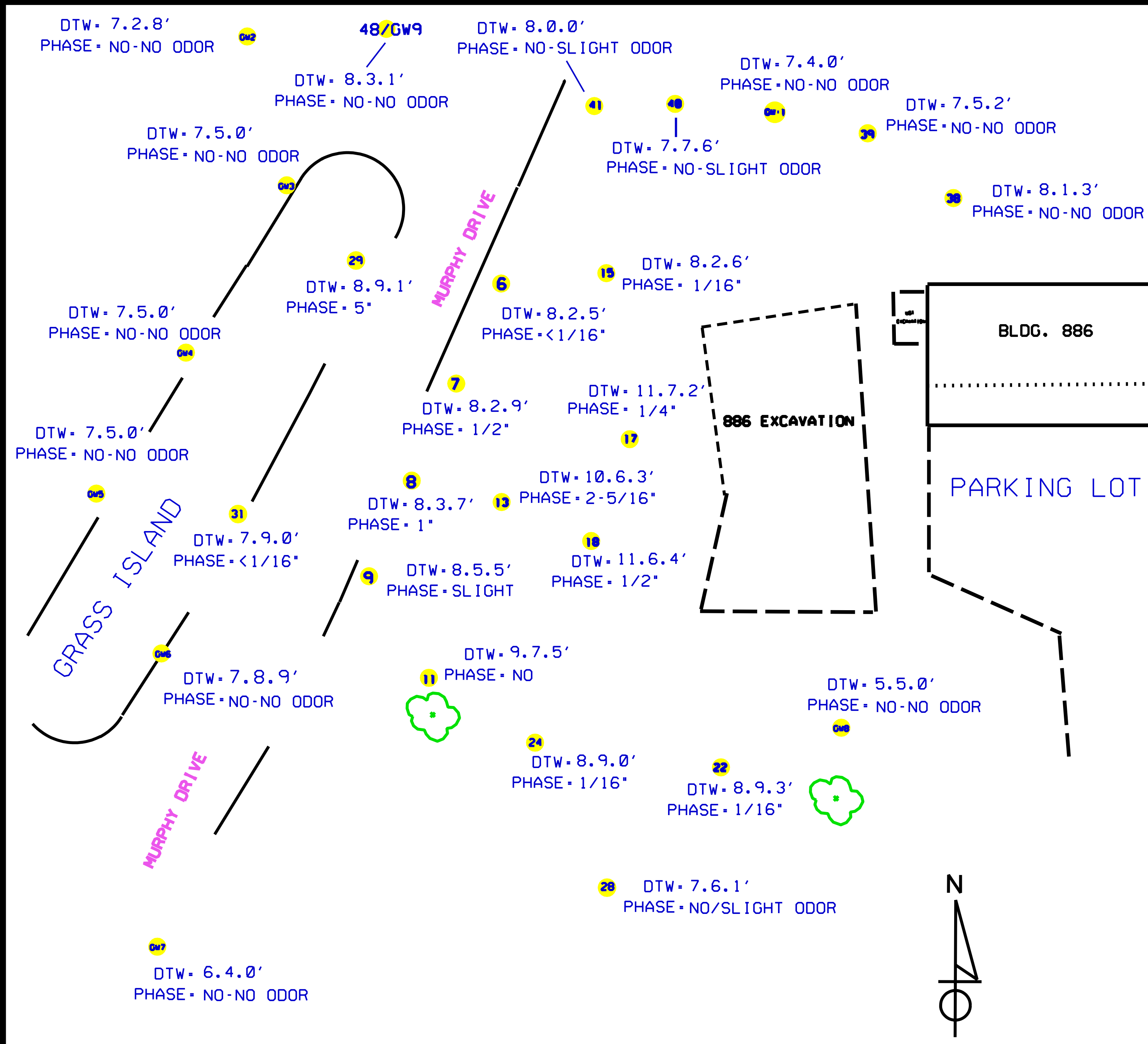


Figure 3-3

KEY

● = GEOPROBE LOCATIONS

DTW= DEPTH TO WATER

PHASE= AMOUNT OF OIL ON WATER

RI Geoprobe GW Boring Location & Phase Measurement Map
Building 886
Fort Monmouth, New Jersey

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

SCALE: 1" = 45' | DATE: 8/14/02

MARK LAURA - CTSC/TVS 7/1/02

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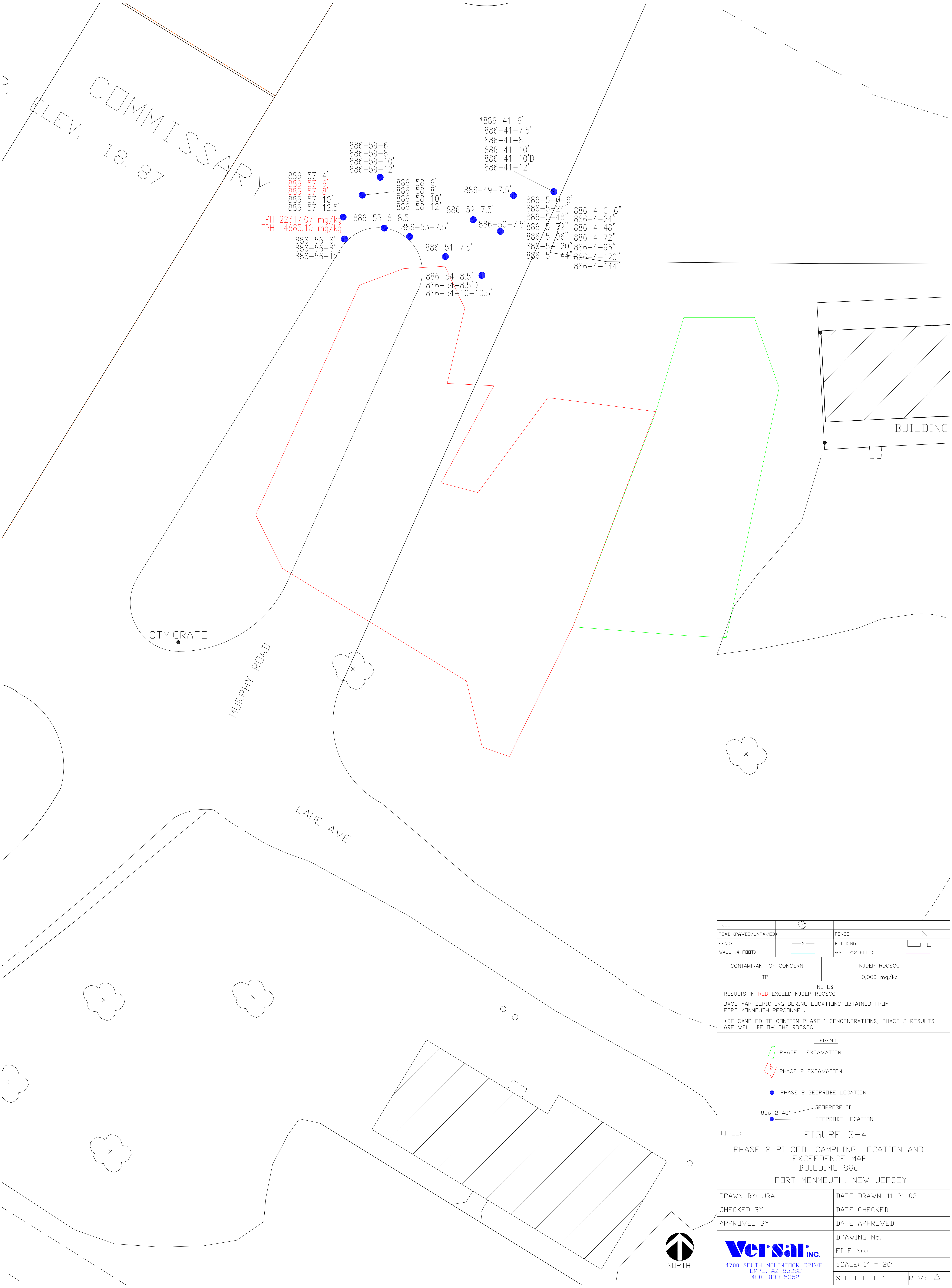
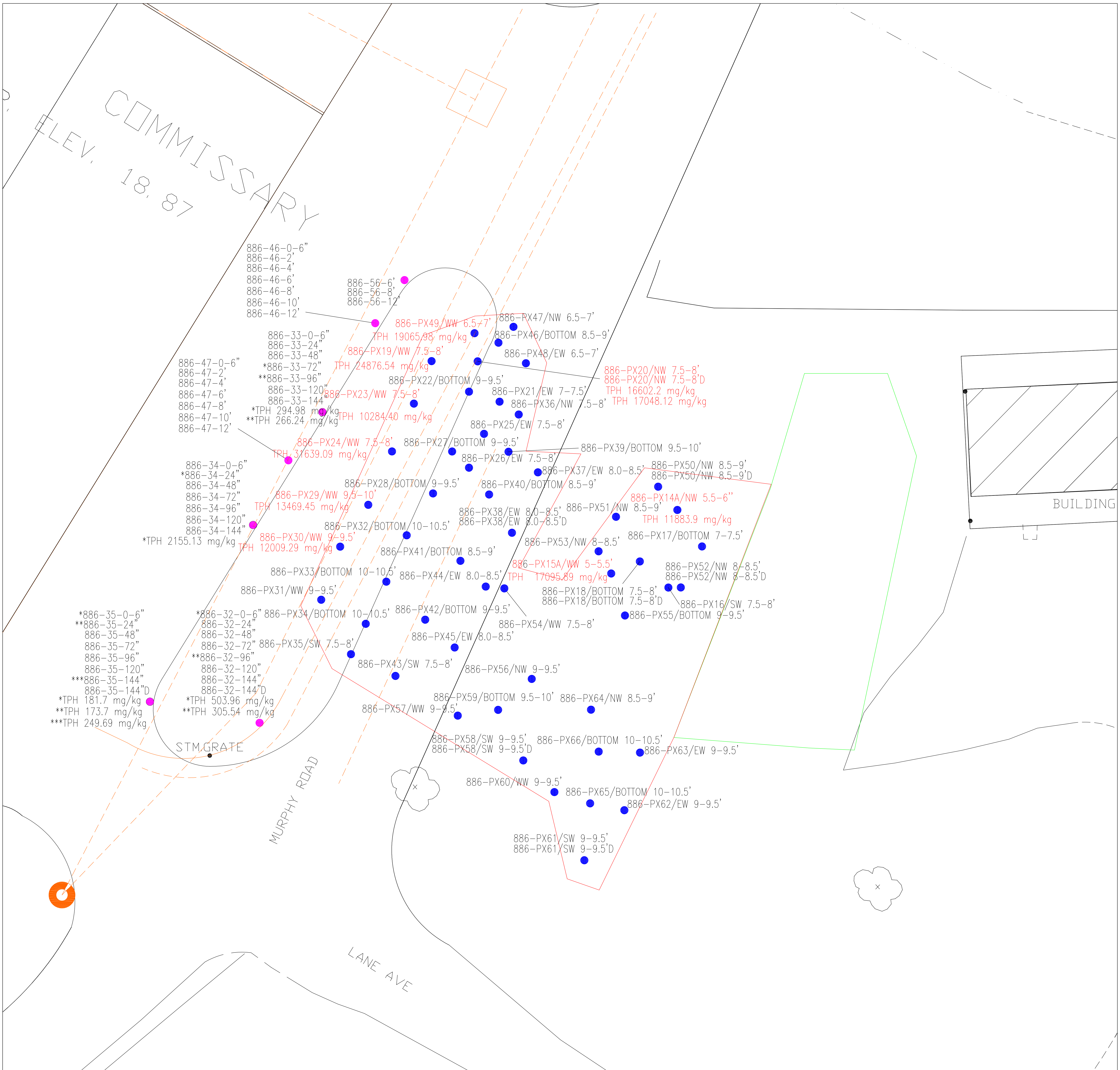


COMMISSARY
ELEV. 18.87
*886-41-6'
886-41-7.5''
886-41-8'
886-41-10'
886-41-10'D
886-41-12'
886-59-6'
886-59-8'
886-59-10'
886-59-12'
886-57-4'
886-57-6'
886-57-8'
886-57-10'
886-57-12.5'
TPH 22317.07 mg/kg
TPH 14885.10 mg/kg
886-58-6'
886-58-8'
886-58-10'
886-58-12'
886-49-7.5'
886-52-7.5'
886-55-8-8.5'
886-53-7.5'
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"
886-56-6'
886-56-8'
886-56-12'
886-51-7.5'
886-54-8.5'
886-54-8.5'D
886-54-10-10.5'
BUILDING
STM.GRATE
MURPHY ROAD
LANE AVE
NORTH
TREE
ROAD (PAVED/UNPAVED)
FENCE
WALL (4 FOOT)
FENCE
BUILDING
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
LEGEND
PHASE 1 EXCAVATION
PHASE 2 EXCAVATION
PHASE 2 GEOPROBE LOCATION
886-2-48"
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:
DRAWING No.:
FILE No.:
Versar INC.
4700 SOUTH MCLINTOCK DRIVE
TEMPE, AZ 85282
(480) 838-5352
SCALE: 1" = 20'
SHEET 1 OF 1
REV.: A



Primary Circuit			
TREE		Primary Pole	
ROAD (PAVED/UNPAVED)		FENCE	
FENCE		BUILDING	
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

PHASE 1 EXCAVATION

PHASE 2 EXCAVATION

PHASE 2 POST-EXCAVATION SAMPLE LOCATON

PHASE 1 & PHASE 2 RI SOIL SAMPLE LOCATION

886-PX7/SW 11-11.5' POST-EXCAVATION SAMPLE ID

POST-EXCAVATION SAMPLE LOCATION

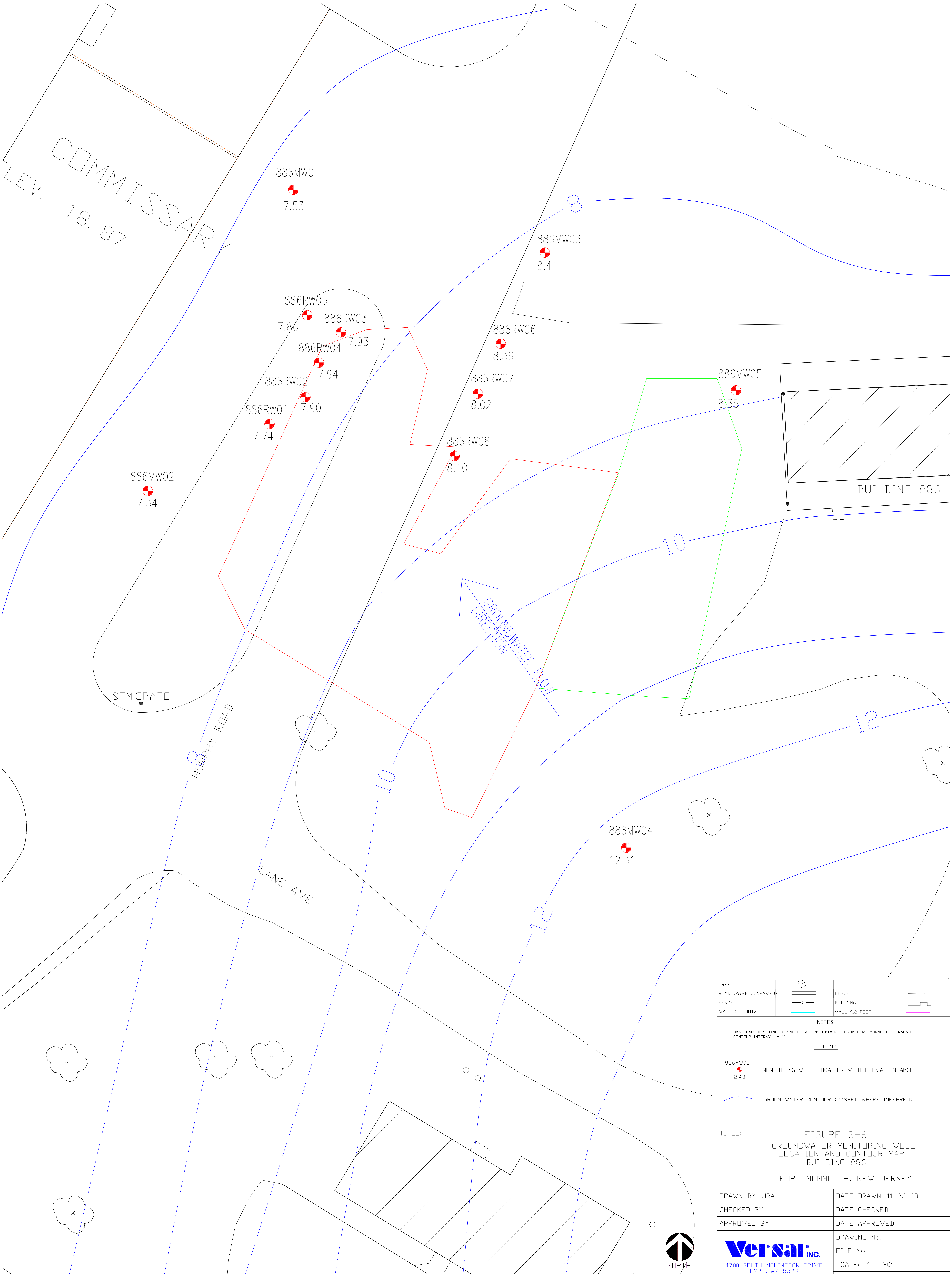
TITLE: FIGURE 3-5

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



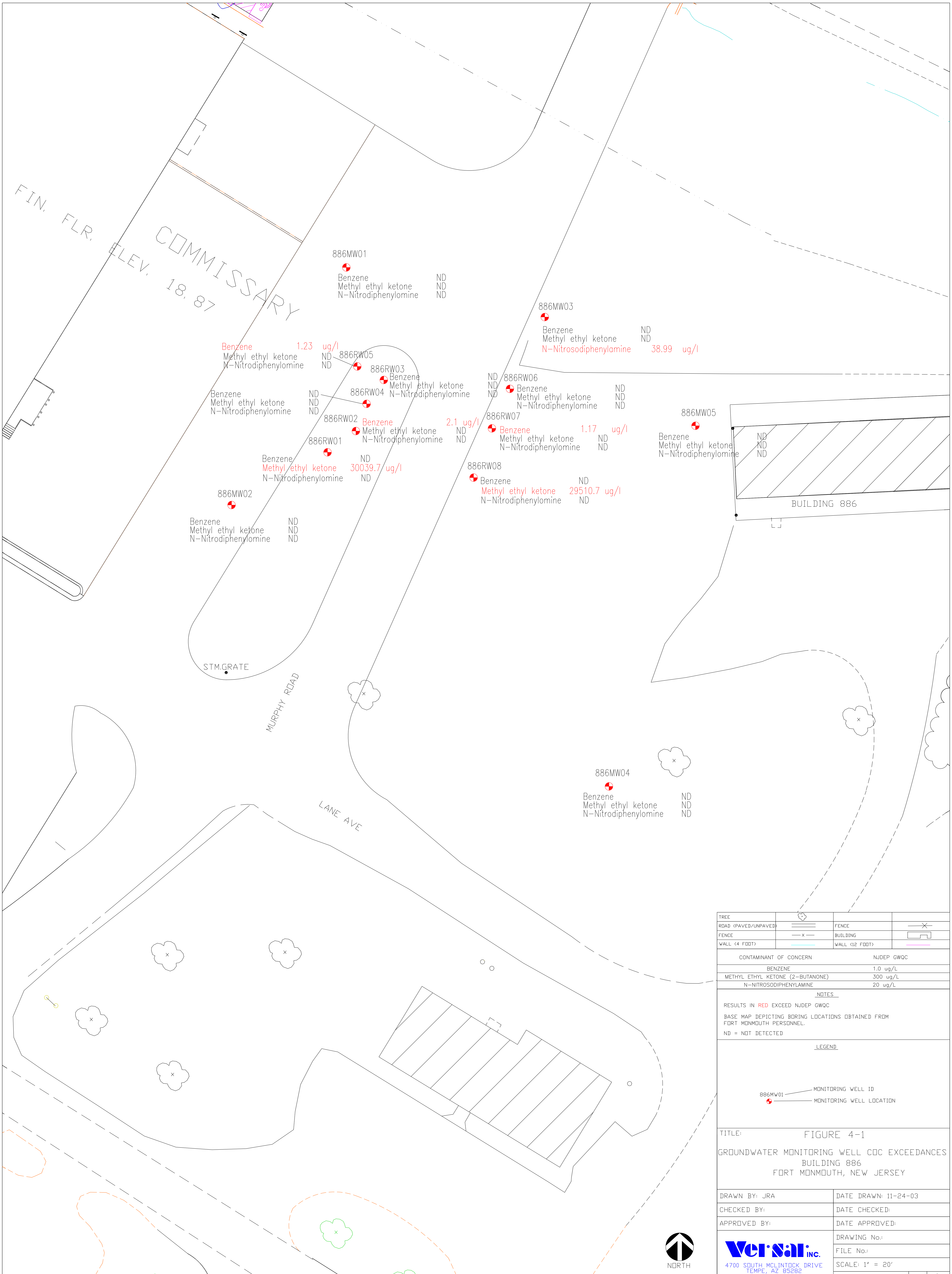
TITLE:

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



TREE			
ROAD (PAVED/UNPAVED)		FENCE	
FENCE		BUILDING	
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:
Versar INC. 4700 SOUTH MCLINTOCK DRIVE TEMPE, AZ 85282 (480) 838-5352	DRAWING No.:
	FILE No.:
	SCALE: 1" = 20'
	SHEET 1 OF 1 REV.: A

APPENDICES

APPENDIX A

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

HANDEX®
Practical Business Solutions

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

500 Campus Drive, Morganville, New Jersey 07751-0451 • (732) 536-8500 • FAX (732) 536-7751

DWR-138 M
8/00

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
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 — 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

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

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

GEOLOGIC LOG
Note each depth where water was encountered in consolidated formations.

0-17' Brown fine to coarse Sand, little silt

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: ________ EASTING: ________
OR
LATITUDE: __° __' __.__" LONGITUDE: __° __' __.__"

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
8/00

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. # 732/536-1374

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

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	sch40
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

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

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

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

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. MB1512 Date 1/8/03

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: ________ EASTING: ________
OR
LATITUDE: __ ° __ ' __ . _" LONGITUDE: __ ° __ ' __ . _"

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
8/00

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 +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

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	.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 Auger

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

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

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

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 Jeffry Marchesi

Registration No. MD1512 Date 1/8/03

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: EASTING:
OR
LATITUDE: ° ' . " LONGITUDE: ° ' . "

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
8/00

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

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	.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 Auger

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

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

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

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 Jeffry Marchesi
Registration No. MØ1512 Date 1/8/03

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: ______ EASTING: ______
OR
LATITUDE: __ ° __ ' __ . __ " LONGITUDE: __ ° __ ' __ . __ "

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

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8/00

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
DATE WELL STARTED 1/8/03
TYPE OF WELL (as per Well Permit Categories) RECOVERY DATE WELL COMPLETED 1/8/03
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 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

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 course 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 Jeff Marchesi

Registration No. MD1512 Date 1/8/03

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: ________ EASTING: ________

OR

LATITUDE: __ ° __ ' __ . __ " LONGITUDE: __ ° __ ' __ . __ "

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
8/00

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 1/8/03
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. # 732/536-1376

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.

Grouting Method Gravity Displacement
Drilling Method Hollow Stem Auger

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

GEOLOGIC LOG
Note each depth where water was encountered in consolidated formations.

0-17' Brown fine to course 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: __ ° __ ' __ . __ "

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
8/00

New Jersey Department of Environmental Protection
Bureau of Water Allocation

MONITORING WELL RECORD

Well Permit No. 29 47842

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-3
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A
Address BUILDING 886 MURPHY DR

DATE WELL STARTED 1/7/03
DATE WELL COMPLETED 1/7/03

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 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.

Grouting Method Gravity Displacement
Drilling Method Hollow Stem Augers

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

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: __ ° __ ' __ . __ "

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
8/00

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 1/09/03
DATE WELL COMPLETED 1/09/03
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 1 gpm
Method of development pump + surge

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

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

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 Jeff Marchesi
Registration No. MD1512 Date 1/8/03

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: ________ EASTING: ________
OR
LATITUDE: __ ° __ ' __ . __ " LONGITUDE: __ ° __ ' __ . __ "

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
8/00

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
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. # 732/536-1376

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.

Grouting Method Gravity Displacement
Drilling Method Hollow Stem Augers

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

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: __ ° __ ' __ . _"

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
8/00

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
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. # 732/536-1376

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

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

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 1/8/03

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: ________ EASTING: ________
OR
LATITUDE: __ ° __ ' __ . __ " LONGITUDE: __ ° __ ' __ . __ "

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
8/00

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 1/09/03
DATE WELL COMPLETED 1/09/03

TYPE OF WELL (as per Well Permit Categories) RECOVERY
Regulatory Program Requiring Well _____ Case I.D.# _____

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

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

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

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

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 Jeff Marchesi

Registration No. MD1512 Date 1/8/03

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: _______ EASTING: _______
OR
LATITUDE: __° __' __.__" LONGITUDE: __° __' __.__"

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-138 M
8/00

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
DATE WELL STARTED 1/08/03
DATE WELL COMPLETED 1/08/03

TYPE OF WELL (as per Well Permit Categories) RECOVERY
Regulatory Program Requiring Well Case I.D.#

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Handex Tele. # 732/536-132[illegible]

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.

Grouting Method Gravity Displacement
Drilling Method Hollow Stem Augers

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

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 Jeff Marchesi

Registration No. MD1512 Date 1/8/03

AS-BUILT WELL LOCATION
(NAD 83 HORIZONTAL DATUM)
NJ STATE PLANE COORDINATE IN US SURVEY FEET

NORTHING: ________ EASTING: ________

OR

LATITUDE: __ ° __ ' __ . _ " LONGITUDE: __ ° __ ' __ . _ "

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

DWR-133M
2/00

2947835
-THRU-
2947839

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
TRENTON, NJ

29

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
Address: Building 173
Fort Monmouth, NJ 07703

Name of Facility: U.S. Army Fort Monmouth
Address: Building 556 Murphy Drive
Fort Monmouth NJ 07703

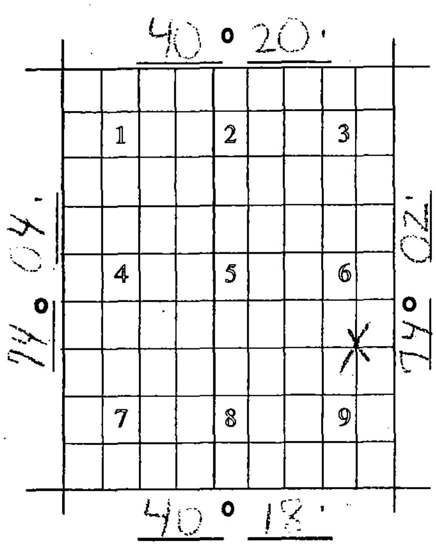
Driller: Handex of New Jersey
Address: 703 Ginesi Drive
Morganville, NJ 07751

Diameter of Well(s): 4 Inches	Proposed Depth of Well(s): 20 Feet
# of Wells Applied for (max. 10): 5	Will pumping equipment be utilized? YES ☐ NO ☒
Type of Well (see reverse): Monitoring	If Yes, give pump capacity: — cumulative GPM

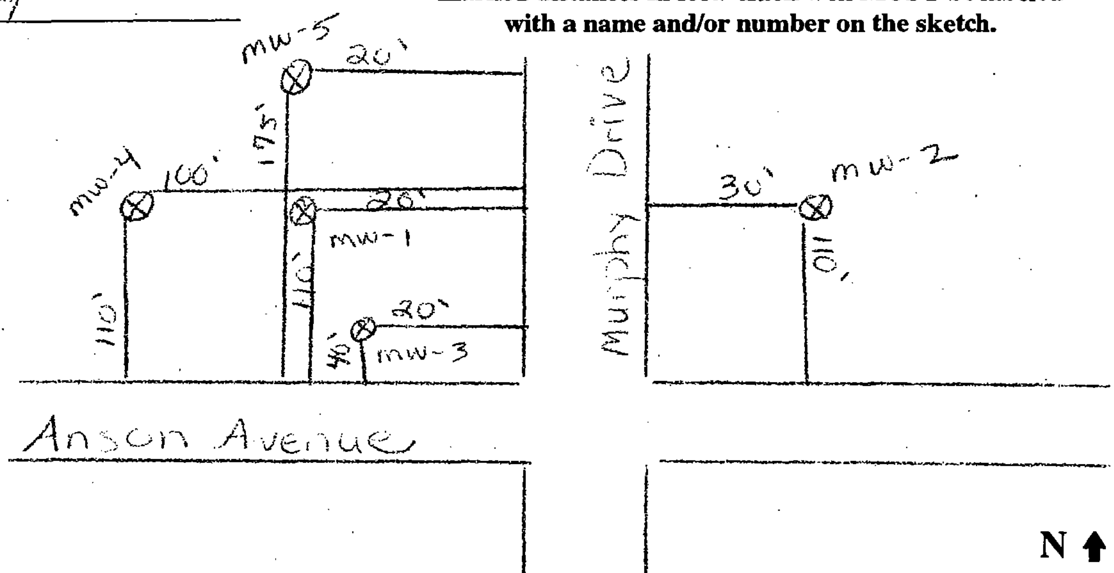
LOCATION OF WELL(S)

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 I.D. 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)	☒ The well(s) may not be completed with more than 25 feet of total screen or uncased borehole.
☐ For monitoring purposes only	
☐	

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. ______________

Signature of Property Owner ______________

DWR-133M
2/00

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
TRENTON, NJ

MONITORING WELL PERMIT

Permit No. 2947840 thru 2947847

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
Address: Building 173, Fort Monmouth, NJ 07703

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

Name of Facility: U.S. Army Fort Monmouth
Address: Building 886 Murphy Drive, Fort Monmouth, NJ 07703

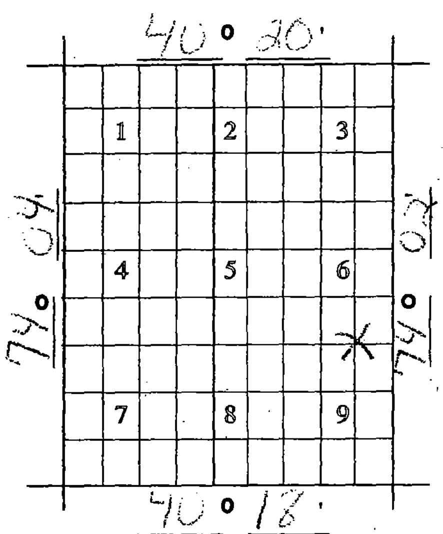
Diameter of Well(s): 6 Inches	Proposed Depth of Well(s): 20 Feet
# of Wells Applied for (max. 10): 8	Will pumping equipment be utilized? YES ☒ NO ☐
Type of Well (see reverse): Recovery	If Yes, give pump capacity: < 1 cumulative GPM

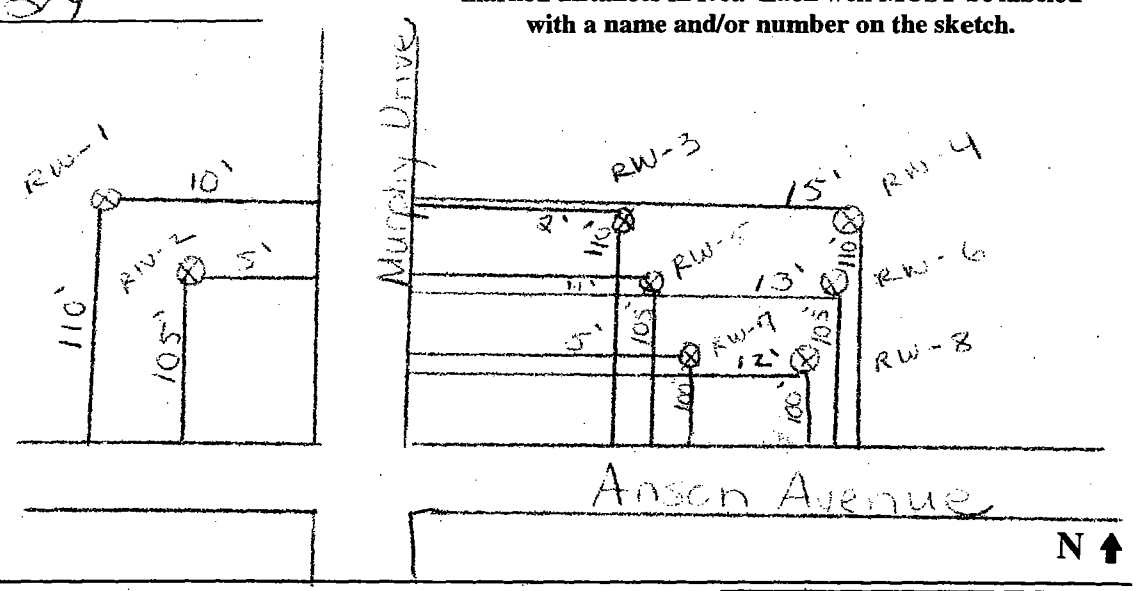
LOCATION OF WELL(S)

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 I.D. 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 11/11/02 Signature of Driller [signature] Registration No. [illegible]

Signature of Property Owner [signature]

TIME & MATERIAL — HYDROGEOLOGIST

Work Date: 1 / 7 / 02

Work Day: Tuesday /

YR: ____ ORG ____ # 528536

Handex Project String

Loc Code	Contract	Handex Task Code	Client Code
125100	000	W3075	900

Client: Fort Monmouth ~~886~~ Bldg. 886.

Address:

CODED BY:

ENTERED BY:

Expense/UP Code: 89450

Town:

Mileage:

Org. I. D.:

State: NJ

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	AM-- Prep. Time	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	Travel Time	Total Hours
Errickson, J	10597			1.5		X		O X				L					X	O				1.0	11.75
												U											
												N											
												C											
												H											

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time Left and Return to Shop

Weather Conditions:

Sample(s) Shipment (Indicate Carrier used):

Handex V#		Hours Used	
# ____	Car	1.0	EV78080
# 599	Pickup Truck		EV78040

Materials	U.O.M.	Quant	Item #
Absorbent Pad	ea		ER0103000
Gripper Plug 4" (non-lock)	ea		AL4140400
Padlock	ea		DR4331003
Plastic Sheeling (6ml)	rl		AL4337000
Respirator Cartridges	ea		MS703100
Tyvek Suit	ea		AL7054000
Booties (Yellow)	pr		ER7053000
Gloves (Nitrile Green)	pr	5	AL3932000
Gloves (Latex)	pr		AL3921000
Water	gl		MS283100
Materials:			

Meters Used

Description	Item #	Hours	Calibrated	Times
OVA/FID	EQ80320		yes/no	
HNU/PID	EQ80370		yes/no	
Kurz	EQ80310		yes/no	
MSA (Explosion)	EQ80311		yes/no	
Multimeter (Air)	EQ80402		yes/no	
Multimeter (Water)	EQ80401		yes/no	
Gas Chromatograph	EQ80694		yes/no	
Hermit 2/4 Chan.	EQ80250		yes/no	
Hermit 8 Chan.	EQ80270		yes/no	
Water Level Probe	EQ80681		yes/no	
Survey Equipment	EQ81137		yes/no	
GPS Unit	EQ80373		yes/no	
Interface Probe	EQ80685		yes/no	
Line Locator		Rolls of film:		
Photographs Taken:				

WORK PERFORMED

Drilling

Well Construction.

Hydro Signature: Jason W. Errickson Date 1 / 7 / 02.

Attendant Verification: Date ___ / ___ / ___

04

TIME & MATERIAL — HYDROGEOLOGIST

Work Date: 1 / 9 / 02
Work Day: Thursday
Client: Fort Monmouth Bldg. 886
Address:
Town:
Org. I. D.:
State: NJ

YR: ____ ORG ____ # 528537

CODED BY:
ENTERED BY:

Handex Project String

Loc Code	Contract	Handex Task Code	Client Code
125100	000	43075	900

Expense/UP Code: 89450

Mileage:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	AM- Prep. Time	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	Travel Time	Total Hours
Errickson, J	10597			1.0		X	O	X				L					X	O				1.0	11.75
												U											
												N											
												C											
												H											

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time Left and Return to Shop

Weather Conditions:

Sample(s) Shipment (Indicate Carrier used):

Handex V#		Hours Used	
______	Car	1.0	EV78080
599	Pickup Truck		EV78040

Materials	U.O.M.	Quant	Item #
Absorbent Pad	ea		ER0103000
Gripper Plug 4" (non-lock)	ea		AL4140400
Padlock	ea		DR4331003
Plastic Sheeling (6ml)	rl		AL4337000
Respirator Cartridges	ea		MS703100
Tyvek Suit	ea		AL7054000
Booties (Yellow)	pr		ER7053000
...ves (Nitrile Green)	pr		AL3932000
...s (Latex)	pr	5	AL3921000
... Water	gl		MS283100
... Materials:			

Meters Used

Description	Item #	Hours	Calibrated	Times
OVA/FID	EQ80320		yes/no	
HNU/PID	EQ80370		yes/no	
Kurz	EQ80310		yes/no	
MSA (Explosion)	EQ80311		yes/no	
Multimeter (Air)	EQ80402		yes/no	
Multimeter (Water)	EQ80401		yes/no	
Gas Chromatograph	EQ80694		yes/no	
Hermit 2/4 Chan.	EQ80250		yes/no	
Hermit 8 Chan.	EQ80270		yes/no	
Water Level Probe	EQ80681		yes/no	
Survey Equipment	EQ81137		yes/no	
GPS Unit	EQ80373		yes/no	
Interface Probe	EQ80685		yes/no	
Line Locator		Rolls of film: ______		
Photographs Taken:				

WORK PERFORMED

Drilling

Well Construction

wrote reports, secured site.

Hydro Signature: Jason W. Errickson Date 1 / 9 / 02

Attendant Verification: Date ___ / ___ / ___

TIME & MATERIAL — HYDROGEOLOGIST

Work Date: 1 / 10 / 02

Work Day: Friday /

YR: ____ ORG ____ # 528538

Client: Fort Monmouth

Address:

Town:

Org. I. D.:

State: NJ

CODED BY:

ENTERED BY:

Handex Project String

Loc Code	Contract	Handex Task Code	Client Code
125100	000	43075	900

Expense/UP Code: 89450

Mileage:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	AM- Prep. Time	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	Travel Time	Total Hours
Errickson, J	10597			0.5		X O	X					L	X O									1.0	7.5
												U											
												N											
												C											
												H											

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time Left and Return to Shop

Weather Conditions:

Sample(s) Shipment (Indicate Carrier used):

Handex V#	Hours Used	
# ____ Car	1.0	EV78080
# 599 Pickup Truck		EV78040

Materials	U.O.M.	Quant	Item #
Absorbent Pad	ea		ER0103000
Gripper Plug 4" (non-lock)	ea		AL4140400
Padlock	ea		DR4331003
Plastic Sheeling (6ml)	rl		AL4337000
Respirator Cartridges	ea		MS703100
Tyvek Suit	ea		AL7054000
Booties (Yellow)	pr		ER7053000
...ves (Nitrile Green)	pr	5	AL3932000
...s (Latex)	pr		AL3921000
...d Water	gl	3	MS283100
...l Materials:			
[illegible]	Bg	2	AL0031003

Meters Used

Description	Item #	Hours	Calibrated	Times
OVA/FID	EQ80320		yes/no	
HNU/PID	EQ80370		yes/no	
Kurz	EQ80310		yes/no	
MSA (Explosion)	EQ80311		yes/no	
Multimeter (Air)	EQ80402		yes/no	
Multimeter (Water)	EQ80401		yes/no	
Gas Chromatograph	EQ80694		yes/no	
Hermit 2/4 Chan.	EQ80250		yes/no	
Hermit 8 Chan.	EQ80270		yes/no	
Water Level Probe	EQ80681		yes/no	
Survey Equipment	EQ81137		yes/no	
GPS Unit	EQ80373		yes/no	
Interface Probe	EQ80685	2.0	yes/no	
Line Locator		Rolls of film:		
Photographs Taken:				
Measuring Wheel		~~HRS~~ 2.0		

WORK PERFORMED

Drilling

Well Construction

Took DTW, DTP, Well Depth measurements using probe interface

Developed site plan, using wheel measurements

Secured site.

Hydro Signature: Jason D. Errickson Date 1 / 10 / 02

Attendant Verification: Date ___ / ___ / ___

02

DRILLING/MASON

Contract	Handex Task Code	Client Code
00	U3075	900

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

Work Day: Tue

Client: FT. MONMOUTH

Address: RT. 35

Town: EATONTOWN State: NJ.

Code: 89450

Mileage:

# of per ft. sheets attached [ ]

Coded By:

Entered By:

Full Name (Last Name First) Initial	Emp. Code	Bill Code	Labor Class	AM Prep Time	6	7	8	9	10	11	12	PM 1	2	3	4	5	6	7	8	9	Travel Time	Total Hours
OShaughnessy	10175		D	2			X				L			X							1	~~10~~ 9
Marchesi	1069		D	2			X				L				X						1	10.5
Brophy	10669		H	2			X								X						1	10.5
Barcanzi	1206		H	2			X								X						1	10.5
Padilla	1234		H	2			X								X						1	10.5

Item		Item#	Hours
Multipurpose Rig		EV74050	
Heavy Duty Auger	B59	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	Day	EQ72061	
Generator 5K	Day	EQ50393	

Geoprobe

	Item#	
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-A-Dig - 8.5 Hrs

3 - 6" x 5' PVC Casing

3 - 6" x 10' PVC Screen

3 - 6" Caps - PL1340600

3 - 6" Gripper Plugs AL4040600

Drilling Materials		Item#	Quantity	U.O.M.
PVC 3/4" x 5' Casing	(Th)	DR1840075		Ea.
PVC 2" x10' 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
4" Well Bottom/Cone		DR9440400		Slip
Padlock		DR4331003		Ea.
Well Gravel		DR2850000	54	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 (Sakrete)		CN2819000		Bag
Blacktop		AL2813000		Bag
Safety Cone		AL7040000	3	Ea.

DR1740600

DR7140600

Work Descriptions:

Drilled and installed 3 Recovery/Monitoring Wells

Drilled and sampled — Soil/Test Borings

Drilling Complete: Yes/No

Split Spoons: NO

Manholes Complete: Yes/No

Method of Drilling: 10 1/4" HSA

Cuttings left on site for Disposal: Yes/No 8 Cubic Yds.

Per Diem Charges: Yes/No ____ # of Employees (98000)

Subcontractors Used: Yes/No - Name:

Level of Protection: C

Employee No. Hours

Detailed Descriptions:

CLEARED 5 HOLES WITH VAC-A-DIG FOR PRE-DRILL PROTOCOL

DRILLED 3 6" PVC RECOVERY WELLS TO 15'.

BILLING INFORMATION

UP Task Name	U.O.M.	Quant.	Bill Code
Mob/Demob	ea	1	90000

UP Task Name	U.O.M.	Quant.	Bill code
Well Abandonment 2" Dia Well	ft.	—	91143
Well Abandonment 4" Dia Well	ft.	—	[illegible]

ILLING/MASON

Contract	Handex Task Code	Client Code
4450	43075	900

Work Date: 1-9-03 YR ___ ORG ___ # 59031

Work Day: THURSDAY

# of per ft. sheets attached [ ]

Client: FORT MONMOUTH

Coded By:

Address: RT 35.

Entered By:

Town: EATONTOWN State: NJ

Name (Last Name First) Initial	Emp. Code	Bill Code	Labor Class	AM Prep Time	6	7	8	9	10	11	12	PM 1	2	3	4	5	6	7	8	9	Travel Time	Total Hours
MARCHESI J.				1/2		X					L					X					1	11
BROPHY S.				1/2		X					U N					X					1	11
BARKASZI J.						X					C			X							1	8 1/2
PARTICIO E.						X					H			X							1	8 1/2

Item		Item#	Hours
Multipurpose Rig		EV74050	
Heavy Duty Auger	B59	EV74059	10 1/2
Light Duty Auger		EV74040	
Portable Drill Equip.		EQ74070	
Support Truck (Single Ax)		EV78050	10 1/2
Support Truck (Tandem)		EV78060	
Pickup Truck		EV78040	
Pressure Washer		EQ74019	
Grout Mixer		EQ74087	
Jackhammer		EQ72180	
Air Compressor 185 CFM	Day	EQ72061	
Generator 5K	Day	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: VAC N DIG 8 1/2 HRS

6" SCREEN, 5' PIECE - 4 EA. DR7240600

6" SCREEN - 10' PIECE - 4 EA. DR7140600

6" BOTTOM CONE - 4 EA. DR1140600

Drilling Materials		Item#	Quantity	U.O.M.
PVC 3/4" x 5' Casing	(Th)	DR1840075		Ea.
PVC 2" x10' Casing	(Th)	DR1740200		Ea.
PVC 4" x 10' Casing	(Th)	DR1740400		Ea.
PVC 6" x 10' Casing	(Th)	DR1740600	4 USED 5' CASINGS	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
4" Well Bottom/Cone		DR9440400		Slip
Padlock		DR4331003		Ea.
Well Gravel		DR2850000	60	Bag
Plastic Sheeting (6ml)		AL4337000		Roll
Bentonite, Hole plug	(bag)	DR2811000	4	Bag
Manhole 10" Bolted		DR5118M10		Ea.
Manhole 10" Plain		DR5016M10		Ea.
Manhole 9" Bolted		DR5116M09	1	Ea.
Cement (Portland)		DR2838000		Bag
Cement (Sakrete)		CN2819000	2	Bag
Blacktop		AL2813000		Bag
Safety Cone		AL7040000		Ea.

Work Descriptions:

Drilled and installed 4 Recovery/~~Monitoring~~ Wells

Cuttings left on site for Disposal: Yes/No 5 Cubic Yds.

Per Diem Charges: Yes/No ___ # of Employees (98000)

Drilled and sampled -0- ~~Soil/Test Borings~~

Subcontractors Used: Yes/No Name:

Drilling Complete: Yes/No Split Spoons: -0-

Level of Protection: C

Employee No. Hours

Manholes Complete: Yes/No

Method of Drilling: HOLLOW STEM AUGERS

Detailed Descriptions:

DRILLED & INSTALLED 4 (6") RECOVERY WELLS - NO SAMPLES - 1 MANHOLE.

BILLING INFORMATION

UP Task Name	U.O.M.	Quant.	Bill Code
Mob/Demob	ea.	2	90000
Mileage	ml.	-	90010
Drilling <30'	ft.	30	91000

UP Task Name	U.O.M.	Quant.	Bill code
Well Abandonment 2" Dia Well	ft.	-	91143
Well Abandonment 4" Dia Well	ft.	-	91144
Manholes Completed	ea	1	94000
Standby	hrs.	-	96000

...ILLING/MASON

...ring

Contract	Handex Task Code	Client Code
...0	43075	900

...94 50

...e: ____

Work Date: 1/8/03 YR ____ ORG ____ # 59029

Work Day: WEDNESDAY # of per ft. sheets attached [ ]

Client: FORT MONMOUTH Coded By: [signature]

Address: RT 35 Entered By:

Town: EATONTOWN State: NJ.

...ll Name (Last Name First) Initial	Emp. Code	Bill Code	Labor Class	AM Prep Time	6	7	8	9	10	11	12	PM 1	2	3	4	5	6	7	8	9	Travel Time	Total Hours
MARCHESI J			D	1/2		X					LU				X						1	10 1/2
BROPHY S			L	1/2		X					N				X						1	10 1/2
BARKASZI J			L	1/2		X					C				X						1	10 1/2
PARTILLO E			L			X					H				X						1	10

Item		Item#	Hours
Multipurpose Rig		EV74050	
Heavy Duty Auger	B59	EV74059	10 ✓
Light Duty Auger		EV74040	
Portable Drill Equip.		EQ74070	
Support Truck (Single Ax)		EV78050	10 ✓
Support Truck (Tandem)		EV78060	
Pickup Truck		EV78040	
Pressure Washer		EQ74019	
Grout Mixer		EQ74087	
Jackhammer		EQ72180	
Air Compressor 185 CFM	Day	EQ72061	
Generator 5K	Day	EQ50393	

Geoprobe

	Item#	
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 ✓

Drilling Materials		Item#	Quantity	U.O.M.
PVC 3/4" x 5' Casing	(Th)	DR1840075		Ea.
PVC 2" x10' Casing	(Th)	DR1740200		Ea.
PVC 4" x 10' Casing	(Th)	DR1740400	5 ✓	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	5 ✓	Ea.
PVC 2" x 5' Screen	(Th)	DR7240200		Ea.
PVC 4" x 5' Screen	(Th)	DR7240400	5 ✓	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	5 ✓	Ea.
4" Gripper Plug (non-locking)		AL4140400		Ea.
2" Well Bottom/Cone		DR9440200		Slip
4" Well Bottom/Cone		DR9440400	5 ✓	Slip
Padlock		DR4331003		Ea.
Well Gravel		DR2850000	60 ✓	Bag
Plastic Sheeting (6ml)		AL4337000		Roll
Bentonite, Hole plug	(bag)	DR2811000	5 ✓	Bag
Manhole 10" Bolted		DR5118M10		Ea.
Manhole 10" Plain		DR5016M10		Ea.
Manhole 9" Bolted		DR5116M09	1 ✓	Ea.
Cement (Portland)		DR2838000		Bag
Cement (Sakrete)		CN2819000	2	Bag
Blacktop		AL2813000	J	Bag
Safety Cone		AL7040000		Ea.

Work Descriptions:

Drilled and installed 5 Recovery/Monitoring Wells

Drilled and sampled -0- Soil/Test Borings

Drilling Complete: Yes/No

Manholes Complete: Yes/No

Method of Drilling: HOLLOW STEM AUGER

Split Spoons: -0-

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
Mob/Demob	ea.	2	90000
Mileage	mi.	—	90010
Drilling <30'	ft.	—	

UP Task Name	U.O.M.	Quant.	Bill code
Well Abandonment 2" Dia Well	ft.	—	91143
Well Abandonment 4" Dia Well	ft.	—	91144
Manholes Completed	ea	1	94000

...LING/MASON YR ____ ORG ____ # 59032

Contract	Handex Task Code	Client Code
89450	U3075	900

...ge: ____

Work Date: 1-10-03
Work Day: FRIDAY
Client: FORT MONMOUTH
Address: RT 35
Town: EATONTOWN State: NJ.

# of per ft. sheets attached [ ]
Coded By:
Entered By:

Full Name (Last Name First) Initial	Emp. Code	Bill Code	Labor Class	AM Prep Time	6	7	8	9	10	11	12	PM 1	2	3	4	5	6	7	8	9	Travel Time	Total Hours
MARCHESE J.			D	2			X			X	LUNCH										1	6½
BROPHY S.			L	1			X			X											1	5½

Item		Item#	Hours
Multipurpose Rig		EV74050	
Heavy Duty Auger	B59	EV74059	4½
Light Duty Auger		EV74040	
Portable Drill Equip.		EQ74070	
Support Truck (Single Ax)		EV78050	4½
Support Truck (Tandem)		EV78060	
Pickup Truck		EV78040	
Pressure Washer		EQ74019	
Grout Mixer		EQ74087	
Jackhammer		EQ72180	
Air Compressor 185 CFM	Day	EQ72061	
Generator 5K	Day	EQ50393	

Geoprobe

	Item#	
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	

DR503M06

Other Equipment & Materials: (2) STICKUP PROTECTIVE CASINGS

6" SCREEN 5' PIECE - 1 EA. ~~DR7240600~~

6" SCREEN 10' PIECE - 1 EA. DR7140600 ✓

6" BOTTOM CONE - 1 EA DR1440600 ✓

Drilling Materials		Item#	Quantity	U.O.M.
PVC 3/4" x 5' Casing	(Th)	DR1840075		Ea.
PVC 2" x10' Casing	(Th)	DR1740200		Ea.
PVC 4" x 10' Casing	(Th)	DR1740400		Ea.
PVC 6" x 10' Casing	(Th)	DR1740600	1 ✓	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
4" Well Bottom/Cone		DR9440400		Slip
Padlock		DR4331003	2	Ea.
Well Gravel		DR2850000	17	Bag
Plastic Sheeting (6ml)		AL4337000		Roll
Bentonite, Hole plug	(bag)	DR2811000	1	Bag
Manhole 10" Bolted		DR5118M10		Ea.
Manhole 10" Plain		DR5016M10		Ea.
Manhole 9" Bolted		DR5116M09		Ea.
Cement (Portland)		DR2838000		Bag
Cement (Sakrete)		CN2819000	5	Bag
Blacktop		AL2813000		Bag
Safety Cone		AL7040000		Ea.

Work Descriptions:

Drilled and installed 1 Recovery/~~Monitoring~~ Wells

Drilled and sampled -0- Soil/Test Borings

Drilling Complete: Yes/No

Split Spoons: -0-

Manholes Complete: Yes/No

Method of Drilling: HOLLOW STEM AUGERS

Cuttings left on site for Disposal: Yes/No 2 Cubic Yds.

Per Diem Charges: Yes/No — # of Employees (98000)

Subcontractors Used: Yes/No - Name: —

Level of Protection: C

Employee No. Hours

Detailed Descriptions:

DRILL & INSTALL 1 (6") RECOVERY WELL INSTALL 2 STICKUP PROTECTIVE CASINGS WITH PADS.

CLEANUP SITE & DEMOB ALL EQUIPMENT

BILLING INFORMATION

UP Task Name	U.O.M.	Quant.	Bill Code
Mob/Demob	ea.	2	90000
Mileage	ml.	-	90010
Drilling <30'	ft.	17	91000

UP Task Name	U.O.M.	Quant.	Bill code
Well Abandonment 2" Dia Well	ft.	-	91143
Well Abandonment 4" Dia Well	ft.	-	91144
Manholes Completed	ea	-	94000
Standby	hrs.	-	96000

TIME & MATERIAL — INSTALLATION

03

Handex Project String

125100 | 000 | U3075 | 902

Loc Code | Contract | Handex Task Code | Client Code

Unit Price Code: ? 85450

Mileage: ____

Work Date: 1-13-03
Work Day: Monday
Client: Fort Monmouth
Address: 886 building
Town: Eaton Town   State NJ
Org I.D.: NJ   Hydro Ehliss

YR: ____ ORG ____ # 145520

ORDER:
CODED BY:
ENTERED BY

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
		F2309L	Oper																				
		F3314L	Tech																				
		F3314L	Tech																				
9 SabiTini C		F1815L	Labor	1.0			0	X				L					X	0				1.5	11.5

"x" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
	Mobile (Box) Shop	[EV72530]	
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
759	Pickup Truck	[EV78040]	11.5
	Boom Truck (mounted crane)	[EV73030]	
	Back Hoe	[EQ72120]	
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	

Per Diem Charges: YES / NO If YES, Number of Employees: ____ (98000)
(attach receipts)

Subcontractors Used: YES / NO (1) ____ (2) ____
• Bill From: TM/PO   Work perf. ____
• Attach receipts

Level of Protection: C D Hours: ____ ea. Empl. # ____ Empl. # ____
Accounting Bill Code ____ Empl. # ____ Empl. # ____
Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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)

Materials:

Full Description (Incl. type of Mat.)	Item #
...dex diesel pump and hose 8.5 h.	
...gs carbon	N/N/B/D

Work Performed:
Well development
Pump Thru Carbon

Signature ____ Dated: 1/17/03 Checked by EH. 1/20/03.

TIME & MATERIAL — INSTALLATION

Handex Project String: 1 25 1 0 0 | 0 0 0 | N 3 0 7 5 | 9 0 0

Loc Code | Contract | Handex Task Code | Client Code

Unit Price Code: PP4VO

Mileage: ______

Work Date: 1/14/03

Work Day: Tuesday

Client: Fort Monmouth

Address: building 886

Town: EATONTOWN State NJ

Org I.D.: NJ Hydro E. Huss

YR: ____ ORG ____ # 145512

ORDER:

CODED BY:

ENTERED BY:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
		F2309L	Oper																				
		F3314L	Tech																				
		F3314L	Tech																				
SABITINI C		F1815L	Labor	15			0 X					L					X	0				1.0	11

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
	Mobile (Box) Shop	[EV72530]	
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
754	Pickup Truck	[EV78040]	11.0
	Boom Truck (mounted crane)	[EV73030]	
	Back Hoe	[EQ72120]	
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	

Per Diem Charges: YES / NO If YES, Number of Employees: ______ (98000)
(attach receipts)

Subcontractors Used: YES / NO (1) ______ (2) ______
• Bill From: TM/PO Work
• Attach receipts perf. ______

Level of Protection: C ~~D~~ Hours: ______ ea. Empl. # ______ Empl. # ______
Accounting Bill Code ______ Empl. # ______ Empl. # ______

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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)

Materials:

Full Description (Incl. type of Mat.)	Item #
carbon	NW/N/WO
Handex diesel pump and hose	8 M

Work Performed:

Well development
pump Thru Carbon

Signature ______ Dated: 1/17/03 Checked by EH. 1/16/03

TIME & MATERIAL — INSTALLATION

U3

Handex Project String

Loc Code	Contract	Handex Task Code	Client Code
125100	030	U3075	900

Unit Price Code: 89451

Mileage: ____________

Work Date: 1/14/03
Work Day: Tuesday
Client: Fort Monmouth
Address: 886 Building
Town: Eaton Town State: NJ
Org I.D.: NJ Hydro: E Nuss

YR: ____ ORG ____ # 145518

ORDER: ____
CODED BY: ____
ENTERED BY: ____

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
BARKASZI J	1300	F2309L	Oper	.5			O X					L					X	O				1	11
Padilla C	1234	F3314L	Tech	.5			O X					L					X	O				1	11
		F3314L	Tech																				
		F1815L	Labor																				

"x" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
-------	Mobile (Box) Shop	[EV72530]	—.—
-------	Dump Truck 2 yd.	[EV72500]	—.—
-------	Dump Truck 5 yd.	[EV72510]	—.—
-------	Dump Truck 18 yd. (Tandem)	[EV72520]	—.—
108	Pickup Truck	[EV78040]	11.0
-------	Boom Truck (mounted crane)	[EV73030]	—.—
-------	Back Hoe	[EQ72120]	—.—
-------	Trailer, Lowboy	[EV72490]	—.—
-------	Air Compressor (150/185 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]	—.—

...als:

Full Description (Incl. type of Mat.)	Item #
S Sand Fill	

Per Diem Charges: YES / NO If YES, Number of Employees: ____________(98000)
(attach receipts)
Subcontractors Used: YES / NO (1) ____________ (2) ____________
• Bill From: TM/PO Work
• Attach receipts perf. ____________

Level of Protection: C D Hours:______ea. Empl. # ____________ Empl. # ____________
Accounting Bill Code ____________ Empl. # ____________ Empl. # ____________
Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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:
System Trenching
LINE INSTALL - bed LINES with sand
~~gravel fill~~ partial Back fill

...ture [signature] Dated: 1/17/03 Checked by Ed. 1/20/03

TIME & MATERIAL — INSTALLATION

03

Handex Project String

1	2	5	1	0	0		0	0	0		N	3	0	7	5		9	0	0

Loc Code — Contract — Handex Task Code — Client Code

Unit Price Code: 89452   8845-2

Mileage: ____________

Work Date: 1/13/03
Work Day: Monday
Client: Fort Monmouth 886
Address: ____________
Town: EATONTOWN   State NJ
Org I.D.: NJ   Hydro E Huss

YR: ____ ORG ____ # 145519
ORDER: ____________
CODED BY: ____________
ENTERED BY: ____________

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time (AM)	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
6.5 BARKASZI J	1306	F2309L	Oper	1.0			X	O				L					X O					1.5	11
8.5 PARTILLA E	1234	F3314L	Tech	.5			X	O				L					X O					1.5	10.5
		F3314L	Tech																				
		F1815L	Labor																				

"X" - Denotes Start/Finish Time on Job Site   "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
	Mobile (Box) Shop	[EV72530]	
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
605	Dump Truck 18 yd. (Tandem)	[EV72520]	2.5
208	Pickup Truck	[EV78040]	11.0
	Boom Truck (mounted crane)	[EV73030]	
580M	Back Hoe	[EQ72120]	8.0
703	Trailer, Lowboy	[EV72490]	2.5
	Air Compressor (150/185 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]	

...als:

Full Description (Incl. type of Mat.)	Item #

Per Diem Charges: YES / NO If YES, Number of Employees: ____________ (98000)
(attach receipts)

Subcontractors Used: YES / NO (1) ____________ (2) ____________
• Bill From: TM/PO   Work
• Attach receipts   perf. ____________

Level of Protection: C D Hours: ______ ea. Empl. # ________ Empl. # ________
Accounting Bill Code ____________ Empl. # ________ Empl. # ________

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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:
LOAD equipment and materials, mobe - safety meeting
ONSITE - meet with engineers - LAY OUT
System - START Trenching -

...ure KM   Dated: 1 / 17 / 03   Checked by E H. 1/20/03

TIME & MATERIAL — INSTALLATION

Handex Project String

Loc Code	Contract	Handex Task Code	Client Code
125100	000	43075	900

Unit Price Code: 89451-3 men
89453-3 men
Mileage: 2 hr

Work Date: 1/16/03
Work Day: Thursday
Client: Fort Monmouth
Address: Building 886
Town: Eatontown State NJ
Org I.D.: NJ Hydro E Huss

YR: ____ ORG ____ # 145513
ORDER:
CODED BY:
ENTERED BY:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
Barkaszi J	1306	F2309L	Oper	.5			O X					L					X O					1.0	11
Partilla E	1234	F3314L	Tech	.5			O X					L					X O					1.0	11
Sabitini C		F3314L	Tech	.5			O X					L		X			[illegible]					.5	7
		F1815L	Labor																				

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
	Mobile (Box) Shop	[EV72530]	
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	11.0
	~~Boom Truck~~ (mounted crane)	[EV73030]	
	Back Hoe	[EQ72120]	8
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	

Materials:

Full Description (Incl. type of Mat.)	Item #

Per Diem Charges: YES / NO If YES, Number of Employees: ________ (98000)
(attach receipts)
Subcontractors Used: YES / NO (1) ________ (2) ________
• Bill From: TM/PO Work perf.
• Attach receipts

Level of Protection: C D Hours: ____ ea. Empl. # ____ Empl. # ____
Accounting Bill Code ____ Empl. # ____ Empl. # ____
Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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 mi ____ (91808)
[ ] Total Pounds of Carbon ____ Liquid/Vapor (circle one)

Work Performed:
Trenching - piping - secure area
paperwork. Form work -

Signature: [signature] Dated: 1/20/03 Checked by: G.G. 1/20/03

TIME & MATERIAL — INSTALLATION

Handex Project String

125	00	000	43075	900
Loc Code	Contract	Handex Task Code	Client Code	

Unit Price Code: 89451

Mileage: ______

Work Date: 1/20/03
Work Day: Monday
Client: Fort Monmouth
Address: Building 886
Town: Eatontown State NJ
Org I.D.: NA Hydro E HUSS

YR: ____ ORG ____ # 145571
ORDER:
CODED BY:
ENTERED BY:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
Sparhawg J	1306	F2309L	Oper	.5			O X					L				X O						1	10.0
Portilla E	1234	F3314L	~~Tech~~ LAB	.5			O X					L				X O						1	10.0
		F3314L	Tech																				
		F1815L	Labor																				

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
513	Mobile (Box) Shop	[EV72530]	9.0
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	~~10.0~~ 9.5
	Boom Truck (mounted crane)	[EV73030]	
580M	Back Hoe	[EQ72120]	8.0
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	

Materials: Full Description (Incl. type of Mat.)	Item #

Per Diem Charges: YES / NO If YES, Number of Employees: ______ (98000)
(attach receipts)
Subcontractors Used: YES / NO (1) ______ (2) ______
• Bill From: TM/PO — Work perf. ______
• Attach receipts

Level of Protection: C D Hours: ______ ea. Empl. # ______ Empl. # ______
Accounting Bill Code ______ Empl. # ______ Empl. # ______
Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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:
Finish Trenching - install lines
(Need more N-11) secure site

Signature GH. 1/22/03 Dated: ___ / ___ / ___ Checked by GH. 1/22/03

TIME & MATERIAL — INSTALLATION

Handex Project String

Loc Code	Contract	Handex Task Code	Client Code
125100	000	U3075	900

Unit Price Code: 89451

Mileage:

Work Date: 1/21/03
Work Day: Tuesday
Client: Fort Monmouth
Address: Building 886
Town: Eatontown State NJ
Org I.D.: NJ Hydro E Huss

YR: ___ ORG ___ # 145569
ORDER:
CODED BY:
ENTERED BY:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
Barkaszi J	1306	F2309L	Oper			O	X					L					X O					1	10.5
Pontillo E	1234	F3314L	Tech			O	X					L					X O					1	10.5
Sabitini C	10327	F3314L	Tech					O X				L					X O					1	9
		F1815L	Labor																				

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
513	Mobile (Box) Shop	[EV72530]	8.0
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	10.5
	Boom Truck (mounted crane)	[EV73030]	
580M	Back Hoe	[EQ72120]	8.0
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	

Per Diem Charges: YES / NO If YES, Number of Employees: ______ (98000)
(attach receipts)
Subcontractors Used: YES / NO (1) ______ (2) ______
• Bill From: TM/PO Work perf.
• Attach receipts

Level of Protection: C D Hours: ____ ea. Empl. # ____ Empl. # ____
Accounting Bill Code ____ Empl. # ____ Empl. # ____
Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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)

Full Description (Incl. type of Mat.)	Item #
5" Concrete Curing Pad - VISA	
" Nylon 11 - Vansant	
Shovel - Vansant	VISA

Work Performed: Build manhole forms - pick up materials - order sand fill - pressure test air lines secure site

Signature: [signature] Dated: 1/23/03 Checked by GA 1/23/03

TIME & MATERIAL — INSTALLATION

Handex Project String

Loc Code	Contract	Handex Task Code	Client Code
125100	000	03075	902

Unit Price Code: 89451

Mileage: ______

Work Date: 1/22/03
Work Day: Wed

Client: Fort Monmouth
Address: Building 886
Town: EATONTOWN State NJ
Org I.D.: NJ Hydro E Aluss

YR: ____ ORG ____ # 145570

ORDER: ______

CODED BY: ______

ENTERED BY: ______

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
Barkaszi J	1306	F2309L	Oper			O	X					L					X O					1	10.5
Partilla E	1234	F3314L	Tech			O	X					L					X O					1	10.5
Rule C	10436	F3314L	Tech			O	X					L					X O					1	10.5
		F1815L	Labor																				

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
513	Mobile (Box) Shop	[EV72530]	8.0
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	10.5
	Boom Truck (mounted crane)	[EV73030]	
580K	Back Hoe	[EQ72120]	9.0
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	

Per Diem Charges: YES / NO If YES, Number of Employees: ______ (98000)
(attach receipts)

Subcontractors Used: YES / NO (1) ______ (2) ______
• Bill From: TM/PO Work perf. ______
• Attach receipts

Level of Protection: C D Hours: ______ ea. Empl. # ______ Empl. # ______
Accounting Bill Code ______ Empl. # ______ Empl. # ______

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] pr. ___

...als:

Full Description (Incl. type of Mat.)	Item #
SAND FILL	

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:
Pressure test product line - pick up PARTS - ACCEPT load of Fill - bed Lines WITH SAND. SECURE SITE

...ature [signature] Dated: 1/23/03 Checked by [initials] 1/23/03

TIME & MATERIAL — INSTALLATION

Handex Project String

125100	000	U3075	900
Loc Code	Contract	Handex Task Code	Client Code

Unit Price Code: 89451

Mileage: ____

Work Date: 1/23/03
Work Day: Thursday
Client: Fort Monmouth
Address: Building 886
Town: Eatontown State NJ
Org I.D.: NJ Hydro E Huss

YR: ____ ORG ____ # 145568

ORDER: ____
CODED BY: ____
ENTERED BY: ____

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
9 Barkaszi J	1306	F2309L	Oper	.5			O X					L					X O					1	10.5
9 Partilla E	1234	F3314L	Tech	.5			O X					L					X O					1	10.5
9 D'Domenico T	1633	F3314L	Tech	.5			O X					L					X O					1	10.5
		F1815L	Labor																				

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
	Mobile (Box) Shop	[EV72530]	
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	10.5
	Boom Truck (mounted crane)	[EV73030]	
580 M	Back Hoe	[EQ72120]	8.0
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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.)	Item #

Per Diem Charges: YES / ~~NO~~ If YES, Number of Employees: ____ (98000)
(attach receipts)

Subcontractors Used: YES / ~~NO~~ (1) ____ (2) ____
• Bill From: TM/PO Work perf. ____
• Attach receipts

Level of Protection: C D Hours: ____ ea. Empl. # ____ Empl. # ____
Accounting Bill Code ____ Empl. # ____ Empl. # ____

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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. Paperwork

Signature: [signature] Dated: 1/24/03 Checked by ____

TIME & MATERIAL — INSTALLATION

Handex Project String

Loc Code	Contract	Handex Task Code	Client Code
125100	000	03075	900

Unit Price Code: 89451

Mileage: ______

Work Date: 1/24/03

Work Day: FRIDAY

Client: Fort Monmouth

Address: Building 886

Town: EatonTown State NJ

Org I.D.: NJ Hydro EHoss

YR: ____ ORG ____ # 145572

ORDER:

CODED BY:

ENTERED BY:

Last Name. First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
6 BARKASZI J	1306	F2309L	Oper	.5			O X					L		X O								1	7.5
7 PARTELLA E	1234	F3314L	Tech	.5			O X					L			X O							1	8.5
7 Rule C	10436	F3314L	Tech	.5			O X					L			X O							1	8.5
		F1815L	Labor																				

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
513	Mobile (Box) Shop	[EV72530]	8.0
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	8.5
	Boom Truck (mounted crane)	[EV73030]	
580 M	Back Hoe	[EQ72120]	8.0
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	

Per Diem Charges: YES / NO If YES, Number of Employees: ______ (98000) (attach receipts)

Subcontractors Used: YES / NO (1) ______ (2) ______
• Bill From: TM/PO Work perf. ______
• Attach receipts

Level of Protection: ~~C D~~ Hours: ____ ea. Empl. # ____ Empl. # ____
Accounting Bill Code ____ Empl. # ____ Empl. # ____

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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)

Full Description (Incl. type of Mat.)	Item #

Work Performed:

Scrape loose soil - Thaw soil for backfilling Trenches

Signature [signature] Dated: 1/27/03 Checked by ______

TIME & MATERIAL — INSTALLATION

Handex Project String

125100	000	03075	900
Loc Code	Contract	Handex Task Code	Client Code

Unit Price Code: 89451

Mileage:

Work Date: 1/27/03 PW

Work Day: Monday

Client: Fort Monmouth

Address: Building 886

Town: Eatontown State NJ

Org I.D.: NJ Hydro E Huss

YR: ____ ORG ____ # 145573

ORDER:

CODED BY:

ENTERED BY:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
Barkoszi J	1306	F2309L	Oper	.5			OX					L		XO								1	7.5
Brophy S		F3314L	Tech	.5			OX					L		XO								1	7.5
		F3314L	Tech																				
		F1815L	Labor																				

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
	Mobile (Box) Shop	[EV72530]	
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	7.5
	Boom Truck (mounted crane)	[EV73030]	
580M	Back Hoe	[EQ72120]	6.0
	Trailer, Lowboy	[EV72490]	
HNJ 185	Air Compressor (150/185 CFM)	[EQ72070]	6.0
	Concrete Cutting Saw	[EQ72460]	
	Hand Held Cutting Saw	[EQ72470]	
	Hand Held Cutting Saw Blades	[EQ72450]	
[illegible]	Jackhammer (Pavement Breaker)	[EQ72180]	6.0
	OVA Meter	[EQ80320]	
	HNU/PID Meter	[EQ80372]	
	Gas Chromatograph Meter (DY)	[EQ80693]	

...als:

Full Description (Incl. type of Mat.)	Item #

Per Diem Charges: YES / NO If YES, Number of Employees: ________ (98000)
(attach receipts)

Subcontractors Used: YES / NO (1) ________ (2) ________
• Bill From: TM/PO Work perf.
• Attach receipts

Level of Protection: C D Hours: ____ ea. Empl. # ____ Empl. # ____
Accounting Bill Code ____ Empl. # ____ Empl. # ____

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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: dig for manholes using jackhammer

Dated: 1/28/03 Checked by [signature] 2/6/03

TIME & MATERIAL — INSTALLATION

Handex Project String

Loc Code	Contract	Handex Task Code	Client Code
125100	000	U3075	900

Unit Price Code: 89451

Mileage: ______

Work Date: 1/28/03

Work Day: Tuesday

Client: Fort Monmouth

Address: Building 886

Town: Eatontown State NJ

Org I.D.: NJ Hydro E. Hess

YR: ____ ORG ____ # 145574

ORDER: ______

CODED BY: ______

ENTERED BY: ______

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
X		F1220L	Fore																				
Backaszi J	1306	F2309L	Oper			O	X					X										.5	5.5
Brophy S		F3314L	Tech				X					X											5
		F3314L	Tech																				
		F1815L	Labor																				

"x" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
	Mobile (Box) Shop	[EV72530]	
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	3.5
	Boom Truck (mounted crane)	[EV73030]	
580 M	Back Hoe	[EQ72120]	5.0
	Trailer, Lowboy	[EV72490]	
HNS	Air Compressor (150/185 CFM)	[EQ72070]	4.0
	Concrete Cutting Saw	[EQ72460]	
	Hand Held Cutting Saw	[EQ72470]	
	Hand Held Cutting Saw Blades	[EQ72450]	
[illegible]	Jackhammer (Pavement Breaker)	[EQ72180]	4.0
	OVA Meter	[EQ80320]	
	HNU/PID Meter	[EQ80372]	
	Gas Chromatograph Meter (DY)	[EQ80693]	

Materials:

Full Description (Incl. type of Mat.)	Item #

Per Diem Charges: (attach receipts) YES / NO If YES, Number of Employees: ______ (98000)

Subcontractors Used: YES / NO (1) ______ (2) ______
• Bill From: TM/PO
• Attach receipts
Work perf. ______

Level of Protection: C D Hours: ______ ea. Empl. # ______ Empl. # ______
Accounting Bill Code ______ Empl. # ______ Empl. # ______

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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: Jack out manhole areas that were frozen in prep for concrete stage soil in big pile.

Signature [signature] Dated: 1 / 30 / 03 Checked by [signature] 2/6/03 [redacted]rtheast Form) VW 02

[redacted]AL (Northeast Form) PW 02

YR ____ ORG ____ # 6320

[redacted] 900 Client Code

Work Date: 1-29-03

Work Day: wednesday

Client: Fort Monmouth

Address: Building 886

Town: Eatontown State: NJ

Org. I.D. ______ Hydro: ______

Coded By:

Entered By:

[redacted]451

[redacted]UP: X Worksheet: ______

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

PLUMBING PARTS

	1" Qty	Code	2" Qty	Code	3" Qty	Code
PVC Ball Valve		PL8540100		PL8540200		PL8540300
Brass Ball Valve		PL8514100		PL8514200		PL8514300
PVC Pipe (sch. 40)		PL5940100		PL5940200		PL5940300
PVC 90° Elbow		PL3140100		PL3140200		PL3140300
PVC Tee (sch. 40)		PL8140100		PL8140200		PL8140300
PVC Male Adapter		PL0340100		PL0340200		PL0340300
PVC Fem. Adapter		PL0240100		PL0240200		PL0240300
PVC Coupling		PL2440100		PL2440200		PL2440300
PVC Union		PL8440150		PL844020S		PL8440300

ELECTRICAL PARTS

	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
PVC 90° Sweep		EL7840075		EL7840100		EL7840200
PVC 45° Sweep		EL7740075		EL7740100		EL7740200
PVC Male Term. Adapter		EL0340075		EL0340100		EL0340200
PVC Fem. Tem. Adapter		EL0240075		EL0240100		EL0240200
PVC Elec. Coupling		EL2440075		EL2440100		EL2440200
PVC LB Box		EL0740075		EL0740100		EL0740200
Sealing Y (EXP)		EL7343075		EL7343100		EL7343200
Elec. Adpt. Straight (LT)		EL0328075		EL0328100		EL0328200
Flex. Conduit (LT)		EL2328075		EL2328100		EL2328200

MISCELLANEOUS MATERIALS

	Qty	Code		Qty	Code
10-3 SO Cord. (ft.)		EL9720W31	Warrick Relay #27AIEO		EL6831005
12-3 SO Cord. (ft.)		EL9720W33	Warrick Relay #27BIEO		EL6831007
14-3 SO Cord. (ft.)		EL9720W35	Warrick Relay #67 Series		EL6831008
#16 Wire Thhn (ft.)		EL9820W16	Time Delay Relay ATC 339		EL6831004
#14 Wire Thhn (ft.)		EL9820W14	Flip Flop Timer ATC 115V		EL4331004

PUMP PARTS

	Qty	Code
CH&E Diaphragm		MS6231001
CH&E Flap		MS6231002
Aro Pump O-ring Kit #637118C		MS6231004

Comments: Work on & prep parts for shed power.

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

ELEC Rev. 11/99

AL (Northeast Form)

ECTRICAL (Northeast Form) PW

02

YR ____ ORG ____ # 6322

ing

U 30 75 | 900

Contract | Handex Task Code | Client Code

Work Date: 1-30-03

Work Day: THURSDAY

Client: Fort Monmouth

Address: Building 886

Town: Eatontown State: NJ

Org. I.D. ____ Hydro: ____

Coded By:

Entered By

Code: ____

Price Code: 89451

Bill: TM: ____ UP: X Worksheet: ____

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep Time	AM 5	6	7	8	9	10	11	PM 12	1	2	3	4	5	6	7	8	9	10	Travel	Total
1. TAGLINO L	10019	F0616L	Electr.	1					X			L					X						1	9½
		F0616L	Electr.									U												
		F3314L	Tech.									N												
		F3314L	Tech.									C												
		F1200L	Foreman									H												

PLUMBING PARTS

	1" Qty	Code	2" Qty	Code	3" Qty	Code
PVC Ball Valve		PL8540100		PL8540200		PL8540300
Brass Ball Valve		PL8514100		PL8514200		PL8514300
PVC Pipe (sch. 40)		PL5940100		PL5940200		PL5940300
PVC 90° Elbow		PL3140100		PL3140200		PL3140300
PVC Tee (sch. 40)		PL8140100		PL8140200		PL8140300
PVC Male Adapter		PL0340100		PL0340200		PL0340300
PVC Fem. Adapter		PL0240100		PL0240200		PL0240300
PVC Coupling		PL2440100		PL2440200		PL2440300
PVC Union		PL8440150		PL844020S		PL8440300

ELECTRICAL PARTS

	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
PVC 90° Sweep		EL7840075		EL7840100		EL7840200
PVC 45° Sweep		EL7740075		EL7740100		EL7740200
PVC Male Term. Adapter		EL0340075		EL0340100		EL0340200
PVC Fem. Tem. Adapter		EL0240075		EL0240100		EL0240200
PVC Elec. Coupling		EL2440075		EL2440100		EL2440200
PVC LB Box		EL0740075		EL0740100		EL0740200
Sealing Y (EXP)		EL7343075		EL7343100		EL7343200
Elec. Adpt. Straight (LT)		EL0328075		EL0328100		EL0328200
Flex. Conduit (LT)		EL2328075		EL2328100		EL2328200

MISCELLANEOUS MATERIALS

Description	Quantity	ERS Code
1½" PVC Conduit	20 / 30'	6.5x PL5940150
	( )	
+ VISA Purchases	( )	
	( )	
	( )	
	( )	
	( )	
	( )	

PUMP PARTS

Description	Quantity	ERS Code
	( )	
	( )	
	( )	
	( )	
	( )	
	( )	
	( )	
	( )	

Comments: Mount load center and run conduit around top edge of building

Authorization: GU. 2/6/03 KD Date: 1/31/03 [redacted] (Northeast Form)

02

PW

YR ___ ORG ___ # 6330

Client Code: [redacted]

Work Date: 2-5-03

Work Day: Wednesday

Client: Fort Monmouth

Address: Building 886

Town: Eatontown State: NJ

Org. I.D. ______ Hydro: ______

Worksheet: ______

Coded By: [illegible]

Entered By: [illegible]

Name	Emp. Code	Bill Code	Labor Class	Prep Time	AM 5	6	7	8	9	10	11	PM 12	1	2	3	4	5	6	7	8	9	10	Travel	Total
[redacted]	10019	F0616L	Electr.					X			X													2½
[redacted]	1629	F0616L	~~Electr.~~ Laborer					X			X													2½
		F3314L	Tech.																					
		F3314L	Tech.																					
		F1200L	Foreman																					

PLUMBING PARTS

	1" Qty	Code	2" Qty	Code	3" Qty	Code
PVC Ball Valve		PL8540100		PL8540200		PL8540300
Brass Ball Valve		PL8514100		PL8514200		PL8514300
PVC Pipe (sch. 40)		PL5940100		PL5940200		PL5940300
PVC 90° Elbow		PL3140100		PL3140200		PL3140300
PVC Tee (sch. 40)		PL8140100		PL8140200		PL8140300
PVC Male Adapter		PL0340100		PL0340200		PL0340300
PVC Fem. Adapter		PL0240100		PL0240200		PL0240300
PVC Coupling		PL2440100		PL2440200		PL2440300
PVC Union		PL8440150		PL844020S		PL8440300

ELECTRICAL PARTS

	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
PVC 90° Sweep		EL7840075		EL7840100		EL7840200
PVC 45° Sweep		EL7740075		EL7740100		EL7740200
PVC Male Term. Adapter		EL0340075		EL0340100		EL0340200
PVC Fem. Tem. Adapter		EL0240075		EL0240100		EL0240200
PVC Elec. Coupling		EL2440075		EL2440100		EL2440200
PVC LB Box		EL0740075		EL0740100		EL0740200
Sealing Y (EXP)		EL7343075		EL7343100		EL7343200
Elec. Adpt. Straight (LT)		EL0328075		EL0328100		EL0328200
Flex. Conduit (LT)		EL2328075		EL2328100		EL2328200

MISCELLANEOUS MATERIALS

	Qty	Code		Qty	Code
10-3 SO Cord. (ft.)		EL9720W31	Warrick Relay #27AIEO		EL6831005

PUMP PARTS

	Qty	Code
CH&E Diaphragm		MS6231001

		ERS Code	Description	Quantity	ERS Code
	( )			( )	
	( )			( )	
	( )			( )	
	( )			( )	
	( )			( )	
	( )			( )	
	( )			( )	
	( )			( )	

Comments: Set up generator, lock out power to building install new fused disconnect.

Authorization: GH 2/11/03 KP Date: 2/10/03

ELEC Rev. 11/99

…AL (Northeast Form)

YR ____ ORG ____ # 6334

Task Code	Client Code: 900

Work Date: 5-7-03

Work Day: FRIDAY

Client: Fort Monmouth

Address:

Town: Eatontown State: NJ

Org. I.D. ____ Hydro: ____

Coded By:

Entered By:

89451

UP: X Worksheet: ____

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

PLUMBING PARTS

	1" Qty	Code	2" Qty	Code	3" Qty	Code
PVC Ball Valve		PL8540100		PL8540200		PL8540300
Brass Ball Valve		PL8514100		PL8514200		PL8514300
PVC Pipe (sch. 40)		PL5940100		PL5940200		PL5940300
PVC 90° Elbow		PL3140100		PL3140200		PL3140300
PVC Tee (sch. 40)		PL8140100		PL8140200		PL8140300
PVC Male Adapter		PL0340100		PL0340200		PL0340300
PVC Fem. Adapter		PL0240100		PL0240200		PL0240300
PVC Coupling		PL2440100		PL2440200		PL2440300
PVC Union		PL8440150		PL844020S		PL8440300

ELECTRICAL PARTS

	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
PVC 90° Sweep		EL7840075		EL7840100		EL7840200
PVC 45° Sweep		EL7740075		EL7740100		EL7740200
PVC Male Term. Adapter		EL0340075		EL0340100		EL0340200
PVC Fem. Tem. Adapter		EL0240075		EL0240100		EL0240200
PVC Elec. Coupling		EL2440075		EL2440100		EL2440200
PVC LB Box		EL0740075		EL0740100		EL0740200
Sealing Y (EXP)		EL7343075		EL7343100		EL7343200
Elec. Adpt. Straight (LT)		EL0328075		EL0328100		EL0328200
Flex. Conduit (LT)		EL2328075		EL2328100		EL2328200

MISCELLANEOUS MATERIALS

	Qty	Code		Qty	Code
10-3 SO Cord. (ft.)		EL9720W31	Warrick Relay #27AIEO		EL6831005
12-3 SO Cord. (ft.)		EL9720W33	Warrick Relay #27BIEO		EL6831007
14-3 SO Cord. (ft.)		EL9720W35	Warrick Relay #67 Series		EL6831008
#16 Wire Thhn (ft.)		EL9820W16	Time Delay Relay ATC 339		EL6831004
#14 Wire Thhn (ft.)		EL9820W14	Flip Flop Timer ATC 115V		EL4331004
#12 Wire Thhn (ft.)		EL9820W12	220V Pole Relay (gen. Purp.)		EL6831001
#10 Wire Thhn (ft.)		EL9820W10	8 Pin Octal Relay Base		EL6831002

PUMP PARTS

	Qty	Code
CH&E Diaphragm		MS6231001
CH&E Flap		MS6231002
Aro Pump O-ring Kit #637118C		MS6231004
Aro Pump Diaphragm #90533-2		MS6231000
Absorbent Pad (grade 100) (ea.)		ER0103000

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

Comments: Prep materials for system install.

C. U 7/11/02

KP Date: 2/10/03

ELEC Rev. 11/9

PW

TIME & MATERIAL — INSTALLATION

Handex Project String

1	25	100	800	43075	900

Loc Code / Contract / Handex Task Code / Client Code

Unit Price Code: 82452

Mileage: ________________

Work Date: 1-30-03
Work Day: Thursday
Client: Fort Mon monmouth
Address: Building 886
Town: EATONTOWN State NJ
Org I.D.: NJ Hydro E HUSS

YR: _____ ORG _____ # ___
ORDER: ________
CODED BY: [signature]
ENTERED BY: [signature]

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	
		F1220L	Fore																				
9 BARKASZI J	1306	F2309L	Oper	.50		O	X					L					X O					1	10.
1.5 PANTILLA E	1234	F3314L	Tech			O	X					L					X O					1	10.5
Brophy S	010669	F3314L	Tech				X					L					X						9.5
		F1815L	Labor																				

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
	Mobile (Box) Shop	[EV72530]	
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	10.5
	Boom Truck (mounted crane)	[EV73030]	
580M	Back Hoe	[EQ72120]	8.0
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	

Per Diem Charges: (attach receipts) YES / NO If YES, Number of Employees: __________ (98000)

Subcontractors Used: YES / NO (1) __________ (2) __________
• Bill From: TM/PO
• Attach receipts
Work perf. __________

Level of Protection: C D Hours: ______ ea. Empl. # ________ Empl. # ________
Accounting Bill Code ________ Empl. # ________ Empl. # ________

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] pr. ___

Misc. Materials:

QTY.	Full Description (Incl. type of Mat.)	Item #
	Rental Concrete Mixer	VISA

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:
Mix and set five 20"x20"
manholes. Assoc. duties with site work
paperwork

Supervisor Signature [signature] Dated: 2/3/03 Checked by GU 2/6/03 rw

TIME & MATERIAL — INSTALLATION

Handex Project String

Loc Code	Contract	Handex Task Code	Client Code
125100	000	U3075	900

Unit Price Code: 89452

Mileage: ________________

Work Date: 1-31-03
Work Day: Friday
Client: Fort Monmouth
Address: Building 886
Town: Eatontown State NJ
Org I.D.: NJ Hydro E Huss

YR: ____ ORG ____ # ____
ORDER: ____
CODED BY: ____
ENTERED BY: ____

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	
		F1220L	Fore																				
		F2309L	Oper									L											
1.5 Partilla E	1234	F3314L	Tech	1.5				X				U N				X						1.0	10
7.5 Brophy S	010669	F3314L	Tech	1.5				X				C				X						1.0	10.
		F1815L	Labor									H											

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
513	Mobile (Box) Shop	[EV72530]	7.5
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
733	Pickup Truck	[EV78040]	2.0
	Boom Truck (mounted crane)	[EV73030]	
510	Back Hoe	[EQ72120]	2.5
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	
Rental	Gas Chromatograph Meter (DY) Concrete Mixer	[EQ80693] Visa	7.5

Misc. Materials:

QTY.	Full Description (Incl. type of Mat.)	Item #

Per Diem Charges: (attach receipts) YES / NO If YES, Number of Employees: ____________ (98000)

Subcontractors Used: YES / NO (1) ____________ (2) ____________
• Bill From: TM/PO
• Attach receipts
Work perf. ____________

Level of Protection: C D Hours: ______ ea. Empl. # ______ Empl. # ______
Accounting Bill Code ______ Empl. # ______ Empl. # ______

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ____ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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:
Mobe Compresser And product Tank
Finish setting 20"x20" Manholes

Supervisor Signature ____________ Dated: 2 / 3 / 03 Checked by EH. 2/6/03

TIME & MATERIAL — INSTALLATION

Handex Project String

1	2	5	1	0	0		0	0	0		4	3	0	7	5		9	0	0

Loc Code | Contract | Handex Task Code | Client Code

Unit Price Code: 89453

Mileage:

Work Date: 1/29/03 RW
Work Day: Wed
Client: Fort Monmouth
Address: Building 886
Town: Eaton Town State NJ
Org I.D.: NJ Hydro EH

YR: ORG #
ORDER:
CODED BY:
ENTERED BY:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Trav
		F1220L	Fore																			
9 Barigazzi J	1306	F2309L	Oper	.5		P	O X					L					X O					1
9 Partilla Ed	1234	F3314L	Tech	.5		P	O X					L					X O					1
Brophy S	1669	F3314L	Tech				X					L					X					0 (9)
		F1815L	Labor																			

"x" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
	Mobile (Box) Shop	[EV72530]	
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	10.5
	Boom Truck (mounted crane)	[EV73030]	
580M	Back Hoe	[EQ72120]	8.0
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	

Per Diem Charges: YES / NO If YES, Number of Employees: ________ (98000)
(attach receipts)
Subcontractors Used: YES / NO (1) ________ (2) ________
• Bill From: TM/PO Work
• Attach receipts perf.

Level of Protection: C D Hours: ____ ea. Empl. # ____ Empl. # ____
Accounting Bill Code ____ Empl. # ____ Empl. # ____
Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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)

Misc. Materials:

QTY.	Full Description (Incl. type of Mat.)	Item #
	P/U Cement Mixer Rental - VISA	
3	yds concrete Jeff VISA	

Work Performed:
Secure Pad - Final Prep before concrete pour pad - Assoc. working of concrete. Load Sakrete for job. Paperwork

Supervisor Signature [signature] Dated: 2/3/03 Checked by 4U. 2/6/03

TIME & MATERIAL — INSTALLATION

Handex Project String

125100	000	43075	900
Loc Code	Contract	Handex Task Code	Client Code

Unit Price Code: 89453

Mileage: ______

Work Date: 2-3-03
Work Day: Monday
Client: Fort Monmouth
Address: Building 886
Town: EATonTown State NJ
Org I.D.: NJ Hydro EH

YR: ____ ORG ____ # 1
ORDER:
CODED BY:
ENTERED BY:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel
		F1220L	Fore																			
BARKASZI J	1306	F2309L	Oper								O X	L					X O					1
PATILLA E	1234	F3314L	Tech	.5			O X					L					X O					1
Brophy E	10669	F3314L	Tech				O X					L					X					0
		F1815L	Labor																			

"x" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
-------	Mobile (Box) Shop	[EV72530]	--.--
-------	Dump Truck 2 yd.	[EV72500]	--.--
-------	Dump Truck 5 yd.	[EV72510]	--.--
-------	Dump Truck 18 yd. (Tandem)	[EV72520]	--.--
762-733	Pickup Truck	[EV78040]	9.0 EA
380M	Boom Truck (mounted crane)	[EV73030]	
-------	Back Hoe	[EQ72120]	5.0
-------	Trailer, Lowboy	[EV72490]	--.--
-------	Air Compressor (150/185 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]	--.--

Misc. Materials:

QTY.	Full Description (Incl. type of Mat.)	Item #

Per Diem Charges: YES / NO If YES, Number of Employees: ______ (98000)
(attach receipts)
Subcontractors Used: YES / NO (1) ______ (2) ______
• Bill From: TM/PO Work perf. ______
• Attach receipts

Level of Protection: C D Hours: ______ ea. Empl. # ______ Empl. # ______
Accounting Bill Code ______ Empl. # ______ Empl. # ______
Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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 Shed - compressor
put FITTings on hoses for pump
install - clean Trash

Supervisor Signature [signature] Dated: 2 / 6 / 03 Checked by GY. 2/18/03

, **TIME & MATERIAL — INSTALLATION** 03

Handex Project String

125 00 | 000 | U3075 | 900

Loc Code | Contract | Handex Task Code | Client Code

Unit Price Code: 8945A

Mileage:

Work Date: 1/17/03

Work Day: FRIDAY

Client: Fort Monmouth

Address: Building 886

Town: EatonTown State NJ

Org I.D.: NJ Hydro E Huss

YR: ____ ORG ____ # 145514

ORDER:

CODED BY:

ENTERED BY:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
BARKASZI J	1306	F2309L	Oper	1.5			O	X				L					X	O				1	11
Pantilla E	1234	F3314L	Tech	1.5			O	X				L					X	O				1	11
Sabitini C		F3314L	Tech				X					L				X							9
		F1815L	Labor				~~X~~					~~L~~					~~X~~					~~O~~	

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
513	Mobile (Box) Shop	[EV72530]	4.0
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	
	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	11.0
	~~Boom Truck~~ (mounted crane)	[EV73030]	
	Back Hoe	[EQ72120]	8
	Trailer, Lowboy	[EV72490]	
	Air Compressor (150/185 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]	

Per Diem Charges: (attach receipts) YES / NO If YES, Number of Employees: ____________(98000)

Subcontractors Used: YES / NO (1) ____________ (2) ____________
- Bill From: TM/PO
- Attach receipts

Work perf. ____________

Level of Protection: C D Hours:______ea. Empl. # ______ Empl. # ______

Accounting Bill Code ______ Empl. # ______ Empl. # ______

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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)

Misc. Materials:

QTY.	Full Description (Incl. type of Mat.)	Item #
	4'x100' Roll orange fence	
	Aramichenter	ALL USA
	...yes Nails	
	...x6x12	
	...x12 12-2x4x10	
	...8	

Work Performed:

Trenching - Line connections

put up orange fence - set up for

pressure testing : paperwork

...r Signature ____________ Dated: 1 / 20 / 03 Checked by G.U. 11/20/03

TIME & MATERIAL — INSTALLATION

03

Handex Project String: 125 00 | 000 | 3075 | 800

Loc Code | Contract | Handex Task Code | Client Code

Unit Price Code: 89457

Mileage:

Work Date: 2-4-03

Work Day: Tuesday

Client: Fort Monmouth

Address: Building 886

Town: EatonTown State NJ

Org I.D.: NJ Hydro EH

YR: ____ ORG ____ # 145590

ORDER:

CODED BY:

ENTERED BY:

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep. Time	5 AM	6	7	8	9	10	11	12 PM	1	2	3	4	5	6	7	8	9	Travel	Total
		F1220L	Fore																				
9 Bakaszi J	1306	F2309L	Oper	1.0		P	O X					L					X O	P				1	11
9 Partilla E	1234	F3314L	Tech	.5		P	O X					L					X O					1	10.5
9 Brophy S	10669	F3314L	Tech	.5		P	O X					L					X O					1	10.5
		F1815L	Labor																				

"X" - Denotes Start/Finish Time on Job Site "O" - Denotes Time and Return to Shop

Number	Operating Equipment Used Today		Hours Used
	Mobile (Box) Shop	[EV72530]	
	Dump Truck 2 yd.	[EV72500]	
	Dump Truck 5 yd.	[EV72510]	0.5
769	Dump Truck 18 yd. (Tandem)	[EV72520]	
762	Pickup Truck	[EV78040]	20.0
	Boom Truck (mounted crane)	[EV73030]	
580M	Back Hoe	[EQ72120]	8.0
703	Trailer, Lowboy	[EV72490]	0.5
	Air Compressor (150/185 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]	

Misc. Materials:

QTY.	Full Description (Incl. type of Mat.)	Item #
	Fence Enclosure } VISA	
	Tube Chalking	

Per Diem Charges: (attach receipts) YES / NO If YES, Number of Employees: ____________ (98000)

Subcontractors Used: YES / NO (1) ____________ (2) ____________
• Bill From: TM/PO
• Attach receipts
Work perf. ____________

Level of Protection: C D Hours: ______ ea. Empl. # ________ Empl. # ________
Accounting Bill Code ________ Empl. # ________ Empl. # ________

Resp. Cart. [MS703100] ea. ___ Tyvek [AL7054000] ea. ___ Booties [ER705300] pr. ___ Gloves, Nitrile [AL3932000] 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:

Install fan - Install fence

Subgrade around manholes

Demobe - paperwork

Signature ____________ Dated: 2 / 6 / 03 Checked by GG. 2/10/03

ELECTRICAL (Northeast Form)

PW

02

...ct String

0	03075	900
Contract	Handex Task Code	Client Code

YR ____ 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: ____

Entered By: ____

...se Code: ____

...nit Price Code: 89454

Bill: TM: ____ UP: X Worksheet: ____

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep Time	AM 5	6	7	8	9	10	11	PM 12	1	2	3	4	5	6	7	8	9	10	Travel	Total
4.5 TAGUINOT	10019	F0616L	Electr.								X	L				X							1	5½
4.5 MAGLEY	1629	F0616L	Laborer ~~Electr.~~	1½							X	U				X							1	7
		F3314L	Tech.									N												
		F3314L	Tech.									C												
		F1200L	Foreman									H												

PLUMBING PARTS

	1" Qty	Code	2" Qty	Code	3" Qty	Code
PVC Ball Valve		PL8540100		PL8540200		PL8540300
Brass Ball Valve		PL8514100		PL8514200		PL8514300
PVC Pipe (sch. 40)		PL5940100		PL5940200		PL5940300
PVC 90° Elbow		PL3140100		PL3140200		PL3140300
PVC Tee (sch. 40)		PL8140100		PL8140200		PL8140300
PVC Male Adapter		PL0340100		PL0340200		PL0340300
PVC Fem. Adapter		PL0240100		PL0240200		PL0240300
PVC Coupling		PL2440100		PL2440200		PL2440300
PVC Union		PL8440150		PL844020S		PL8440300

ELECTRICAL PARTS

	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
PVC 90° Sweep		EL7840075		EL7840100		EL7840200
PVC 45° Sweep		EL7740075		EL7740100		EL7740200
PVC Male Term. Adapter		EL0340075		EL0340100		EL0340200
PVC Fem. Tem. Adapter		EL0240075		EL0240100		EL0240200
PVC Elec. Coupling		EL2440075		EL2440100		EL2440200
PVC LB Box		EL0740075		EL0740100		EL0740200
Sealing Y (EXP)		EL7343075		EL7343100		EL7343200
Elec. Adpt. Straight (LT)		EL0328075		EL0328100		EL0328200
Flex. Conduit (LT)		EL2328075		EL2328100		EL2328200

MISCELLANEOUS MATERIALS

	Qty	Code		Qty	Code
10-3 SO Cord. (ft.)		EL9720W31	Warrick Relay #27AIEO		EL6831005
12-3 SO Cord. (ft.)		EL9720W33	Warrick Relay #27BIEO		EL6831007
14-3 SO Cord. (ft.)		EL9720W35			

PUMP PARTS

	Qty	Code
CH&E Diaphragm		MS6231001

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

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

Authorization: gy KP Date: 2/10/03

ELEC Rev. 11/99

02

ECTRICAL (Northeast Form) PW

ing

3	6	7	5		9	0	4

Handex Task Code — Client Code

YR ____ ORG (070) # 6341

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: X Worksheet: ____

Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep Time	AM 5	6	7	8	9	10	11	PM 12	1	2	3	4	5	6	7	8	9	10		Travel	Total
1 AGUINO T	10019	F0616L	Electr.					X				L				X								1	8
		F0616L	Electr.									U													
		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
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. Tem. 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
10-3 SO Cord. (ft.)		EL9720W31	Warrick Relay #27AIEO		EL6831005
12-3 SO Cord. (ft.)		EL9720W33	Warrick Relay #27BIEO		EL6831007
14-3 SO Cord. (ft.)		EL9720W35	Warrick Relay #67 Series		EL6831008
#16 Wire Thhn (ft.)		EL9820W16	Time Delay Relay ATC 339		EL6831004
#14 Wire Thhn (ft.)		EL9820W14	Flip Flop Timer ATC 115V		EL4331004
#12 Wire Thhn (ft.)		EL9820W12	220V Pole Relay (gen. Purp.)		EL6831001
#10 Wire Thhn (ft.)		EL9820W10	8 Pin Octal Relay Base		EL6831002
#8 Wire Thhn (ft.)		EL9820W08	Warrick Probe End #3W2		EL6831000

	Qty	Code
CH&E Diaphragm		MS6231001
CH&E Flap		MS6231002
Aro Pump O-ring Kit #637118C		MS6231004
Aro Pump Diaphragm #90533-2		MS6231000
Absorbent Pad (grade 100) (ea.)		ER0103000
Chico Seal (Sealing Comp.) (bg/bx)		EL7308000

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

Comments: Conduit work in shed

Authorization: KP Date: 2/18/03

ELEC Rev. 11/99

ELECTRICAL (Northeast Form) YW (070)

02

YR ____ ORG ____ # 6342

String: 4 3075 910 (Contract / Handex Task Code / Client Code)

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

Coded By: [signature]
Entered By: [signature]

ode: ____
Code: 89454
: ____ UP: X Worksheet: ____

Name, First	Emp. Code	Bill Code	Labor Class	Prep Time	AM 5	6	7	8	9	10	11	PM 12	1	2	3	4	5	6	7	8	9	10		Travel	Total
		F0616L	Electr.									L													
STAGUINOT	10019	F0616L	Electr.					X				U	/x											1	6
Barkaszi	1306	F3314L	Tech.	1½				X				N	/x											1	7½
		F3314L	Tech.									C													
		F1200L	Foreman									H													

PLUMBING PARTS

	1" Qty	Code	2" Qty	Code	3" Qty	Code
PVC Ball Valve		PL8540100		PL8540200		PL8540300
Brass Ball Valve		PL8514100		PL8514200		PL8514300
PVC Pipe (sch. 40)		PL5940100		PL5940200		PL5940300
PVC 90° Elbow		PL3140100		PL3140200		PL3140300
PVC Tee (sch. 40)		PL8140100		PL8140200		PL8140300
PVC Male Adapter		PL0340100		PL0340200		PL0340300
PVC Fem. Adapter		PL0240100		PL0240200		PL0240300
PVC Coupling		PL2440100		PL2440200		PL2440300
PVC Union		PL8440150		PL844020S		PL8440300

ELECTRICAL PARTS

	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
PVC 90° Sweep		EL7840075		EL7840100		EL7840200
PVC 45° Sweep		EL7740075		EL7740100		EL7740200
PVC Male Term. Adapter		EL0340075		EL0340100		EL0340200
PVC Fem. Tem. Adapter		EL0240075		EL0240100		EL0240200
PVC Elec. Coupling		EL2440075		EL2440100		EL2440200
PVC LB Box		EL0740075		EL0740100		EL0740200
Sealing Y (EXP)		EL7343075		EL7343100		EL7343200
Elec. Adpt. Straight (LT)		EL0328075		EL0328100		EL0328200
Flex. Conduit (LT)		EL2328075		EL2328100		EL2328200

MISCELLANEOUS MATERIALS

	Qty	Code		Qty	Code
10-3 SO Cord. (ft.)		EL9720W31	Warrick Relay #27AIEO		EL6831005
12-3 SO Cord. (ft.)		EL9720W33	Warrick Relay #27BIEO		EL6831007
14-3 SO Cord. (ft.)		EL9720W35	Warrick Relay #67 Series		EL6831008
#16 Wire Thhn (ft.)		EL9820W16	Time Delay Relay ATC 339		EL6831004
#14 Wire Thhn (ft.)		EL9820W14	Flip Flop Timer ATC 115V		EL4331004
#12 Wire Thhn (ft.)		EL9820W12	220V Pole Relay (gen. Purp.)		EL6831001
#10 Wire Thhn (ft.)		EL9820W10	8 Pin Octal Relay Base		EL6831002
#8 Wire Thhn (ft.)					

PUMP PARTS

	Qty	Code
CH&E Diaphragm		MS6231001
CH&E Flap		MS6231002
Aro Pump O-ring Kit #637118C		MS6231004
Aro Pump Diaphragm #90533-2		MS6231000
Absorbent Pad (grade 100) (ea.)		

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

Comments: System piping and wiring.

Authorization: KP Date: 2/18/03

ELEC Rev. 11/99

02

ELECTRICAL (Northeast Form)

String: U3075 | 900

Contract | Handex Task Code | Client Code

YR ___ ORG (070) # 6344

Work Date: 2-20-03

Work Day: Thursday

Client: Fort Monmouth

Address: ______

Town: Eatontown State: NJ

Org. I.D. ______ Hydro: ______

Coded By: ______

Entered By: ______

ode: ______

ce Code: 89455

TM: ______ UP: X Worksheet: ______

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep Time	AM 5	6	7	8	9	10	11	PM 12	1	2	3	4	5	6	7	8	9	10		Travel	Total
TAGUINOT	T0019	F0616L	Electr.					X		X														/	1 1/2
		F0616L	Electr.																						
		F3314L	Tech.																						
		F3314L	Tech.																						
		F1200L	Foreman																						

PLUMBING PARTS

	1" Qty	Code	2" Qty	Code	3" Qty	Code
PVC Ball Valve		PL8540100		PL8540200		PL8540300
Brass Ball Valve		PL8514100		PL8514200		PL8514300
PVC Pipe (sch. 40)		PL5940100		PL5940200		PL5940300
PVC 90° Elbow		PL3140100		PL3140200		PL3140300
PVC Tee (sch. 40)		PL8140100		PL8140200		PL8140300
PVC Male Adapter		PL0340100		PL0340200		PL0340300
PVC Fem. Adapter		PL0240100		PL0240200		PL0240300
PVC Coupling		PL2440100		PL2440200		PL2440300
PVC Union		PL8440150		PL844020S		PL8440300

ELECTRICAL PARTS

	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
PVC 90° Sweep		EL7840075		EL7840100		EL7840200
PVC 45° Sweep		EL7740075		EL7740100		EL7740200
PVC Male Term. Adapter		EL0340075		EL0340100		EL0340200
PVC Fem. Tem. Adapter		EL0240075		EL0240100		EL0240200
PVC Elec. Coupling		EL2440075		EL2440100		EL2440200
PVC LB Box		EL0740075		EL0740100		EL0740200
Sealing Y (EXP)		EL7343075		EL7343100		EL7343200
Elec. Adpt. Straight (LT)		EL0328075		EL0328100		EL0328200
Flex. Conduit (LT)		EL2328075		EL2328100		EL2328200

MISCELLANEOUS MATERIALS

	Qty	Code		Qty	Code
10-3 SO Cord. (ft.)		EL9720W31	Warrick Relay #27AIEO		EL6831005
12-3 SO Cord. (ft.)		EL9720W33	Warrick Relay #27BIEO		EL6831007
14-3 SO Cord. (ft.)		EL9720W35	Warrick Relay #67 Series		EL6831008
#16 Wire Thhn (ft.)		EL9820W16	Time Delay Relay ATC 339		EL6831004
#14 Wire Thhn (ft.)		EL9820W14	Flip Flop Timer ATC 115V		EL4331004
#12 Wire Thhn (ft.)		EL9820W12	220V Pole Relay (gen. Purp.)		EL6831001
#10 Wire Thhn (ft.)		EL9820W10	8 Pin Octal Relay Base		EL6831002
#8 Wire Thhn (ft.)		EL9820W08	Warrick Probe End #3W2		[illegible]

PUMP PARTS

	Qty	Code
CH&E Diaphragm		MS6231001
CH&E Flap		MS6231002
Aro Pump O-ring Kit #637118C		MS6231004
Aro Pump Diaphragm #90533-2		MS6231000
Absorbent Pad (grade 100) (ea.)		ER0103000

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

Comments: Order and prep parts

Authorization: KP Date: 2/21/03

ELEC Rev. 11/99

ELECTRICAL (Northeast Form)

0'10   02

...et String: ...P | 4 3 0 > 5 | 9 0 0

Contract | Handex Task Code | Client Code

04 P84V4

YR ____ ORG ____ # 6360

Work Date: 3-6-03

Work Day: THURSDAY

Client: Fort Monmouth

Address:

Town: Eatontown State: NJ

Org. I.D. ____ Hydro: ____

...Code: ____

...ice Code: ____

...: TM: ____ UP: ____ Worksheet: ____

Coded By: [signature]

Entered By: [signature]

Last Name, First Initial	Emp. Code	Bill Code	Labor Class	Prep Time	AM 5	6	7	8	9	10	11	PM 12	1	2	3	4	5	6	7	8	9	10	Travel	Total
		F0616L	Electr.											L										
Taguinot	10019	F0616L	Electr.					X					X	U									1	6
Granit	10179	F3314L	Tech.	1				X						N	/k								1	9
Lockwood	20339	F3314L	Tech.	1				X						C	/k								1	9
		F1200L	Foreman											H										

PLUMBING PARTS

	1" Qty	Code	2" Qty	Code	3" Qty	Code
PVC Ball Valve		PL8540100		PL8540200		PL8540300
Brass Ball Valve		PL8514100		PL8514200		PL8514300
PVC Pipe (sch. 40)		PL5940100		PL5940200		PL5940300
PVC 90° Elbow		PL3140100		PL3140200		PL3140300
PVC Tee (sch. 40)		PL8140100		PL8140200		PL8140300
PVC Male Adapter		PL0340100		PL0340200		PL0340300
PVC Fem. Adapter		PL0240100		PL0240200		PL0240300
PVC Coupling		PL2440100		PL2440200		PL2440300
PVC Union		PL8440150		PL844020S		PL8440300

ELECTRICAL PARTS

	3/4" Qty	Code	1" Qty	Code	2" Qty	Code
PVC 90° Sweep		EL7840075		EL7840100		EL7840200
PVC 45° Sweep		EL7740075		EL7740100		EL7740200
PVC Male Term. Adapter		EL0340075		EL0340100		EL0340200
PVC Fem. Tem. Adapter		EL0240075		EL0240100		EL0240200
PVC Elec. Coupling		EL2440075		EL2440100		EL2440200
PVC LB Box		EL0740075		EL0740100		EL0740200
Sealing Y (EXP)		EL7343075		EL7343100		EL7343200
Elec. Adpt. Straight (LT)		EL0328075		EL0328100		EL0328200
Flex. Conduit (LT)		EL2328075		EL2328100		EL2328200

MISCELLANEOUS MATERIALS

	Qty	Code		Qty	Code
10-3 SO Cord. (ft.)		EL9720W31	Warrick Relay #27AIEO		EL6831005
12-3 SO Cord. (ft.)		EL9720W33	Warrick Relay #27BIEO		EL6831007
14-3 SO Cord. (ft.)		EL9720W35	Warrick Relay #67 Series		EL6831008
#16 Wire Thhn (ft.)		EL9820W16	Time Delay Relay ATC 339		EL6831004
#14 Wire Thhn (ft.)		EL9820W14	Flip Flop Timer ATC 115V		EL4331004
#12 Wire Thhn (ft.)		EL9820W12	220V Pole Relay (gen. Purp.)		EL6831001
#10 Wire Thhn (ft.)		EL9820W10	8 Pin Octal Relay Base		EL6831002
#8 Wire Thhn (ft.)		EL9820W08	Warrick Probe End #3W2		EL6831000
#8 Wire Thhn (ft.)					

PUMP PARTS

	Qty	Code
CH&E Diaphragm		MS6231001
CH&E Flap		MS6231002
Aro Pump O-ring Kit #637118C		MS6231004
Aro Pump Diaphragm #90533-2		MS6231000
Absorbent Pad (grade 100) (ea.)		ER0103000
Chico Seal (Sealing ...		

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

Comments: Dig out RW5 and set pump. Pull wires from load center to shed. Pipe & wire holding tank.

Authorization: [signature] KP Date: 3/7/03 FH

ELEC Rev. 11/99

AL (Northeast Form) YW 0'10 02

YR ____ ORG ____ # 6361

Client Code: 909

Work Date: 3-7-03
Work Day: FRIDAY
Client: Fort Monmouth
Address: Bld # 886

454

Town: Eatontown State: NJ
Worksheet: ____
Org. I.D. ____ Hydro: ____

Coded By: ____
Entered By: ____

	Emp. Code	Bill Code	Labor Class	Prep Time	AM 5	6	7	8	9	10	11	PM 12	1	2	3	4	5	6	7	8	9	10	Travel	Total
		F0616L	Electr.																					
...UINOT	10019	F0616L	Electr.					X				L					X						1	9
...ANITT	10179	F3314L	Tech.				X					L					X						1	10½
...CKWOOD	20339	F3314L	Tech.				X										X						1	10½
9.5		F1200L	Foreman																					

PLUMBING PARTS	1" Qty	Code	2" Qty	Code	3" Qty	Code	ELECTRICAL PARTS	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)	6	EL0328075	2	EL0328100		EL0328200
PVC Union	/	PL8440150		PL844020S		PL8440300	Flex. Conduit (LT)	15'	EL2328075	15'	EL2328100		EL2328200

MISCELLANEOUS MATERIALS	Qty	Code		Qty	Code	PUMP PARTS	Qty	Code
10-3 SO Cord. (ft.)		EL9720W31	Warrick Relay #27AIEO	1	EL6831005	CH&E Diaphragm		MS6231001
12-3 SO Cord. (ft.)	30'	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	Aro Pump Diaphragm #90533-2		MS623100(
#14 Wire Thhn (ft.)		EL9820W14	Flip Flop Timer ATC 115V		EL4331004	Absorbent Pad (grade 100) (ea.)		ER010300(
#12 Wire Thhn (ft.)	50'	EL9820W12	220V Pole Relay (gen. Purp.)		EL6831001	Chico Seal (Sealing Comp.) (bo/bx)		
#10 Wire Thhn (ft.)	60'	EL9820W10	8 Pin Octal Relay Base		EL6831002			
#8 Wire Thhn (ft.)		EL9820W08	Warrick Probe End #3W2		EL6831000			
#8 Wire Thhn (ft.)		EL9820W06	120V Contactor #ACC20					

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

Comments: installed 2nd pump, complete strapping conduit to building, complete wiring of shed. Test run system.

Ready for start up.

KP Date: 3/10/03 PH

ELEC Rev. 1

Authorization: ____

Form 11/99

 Location BLDG. 886 AST Date 1-10-02

Project / Client

1-10 BEGAN EXCAVATION OF CONTAMINATED SOILS USING KOMATSU EXCAVATOR (PC 228USLC) REMOVED 4 TRUCKLOADS (40 CY) CONTAMINATED SOIL

1-13 EXCAVATED AND STOCKPILED 4 TRUCKLOADS (40 CY) CONTAMINATED SOIL

1-15

[illegible]

[illegible] EXCAVATED 4 TRUCKLOADS (40 CY) CONTAMINATED SOILS. STOPPED @ 1200 DUE TO RAIN

[illegible] EXCAVATED INTO 6 TRUCKLOADS (60 CY) CONTAMINATED SOILS

[illegible] EXCAVATED + TRANSPORTED 4 TRUCKLOADS (40 CY) COLLECT 2 POST-EX SOIL SAMPLES

[illegible] EXCAVATED + STOCKPILED 6 TRUCKLOADS (60 CY)

1-30 EXCAVATED + STOCKPILED 6 TRUCKLOADS (60 CY) OF CONTAMINATED SOIL

2-4 EXCAVATED + STOCKPILED 5 TRUCKLOADS (50 CY) OF CONTAMINATED SOIL

2-5 EXCAVATED + STOCKPILED 7 TRUCKLOADS (90 CY) OF CONTAMINATED SOIL

Location Date

Project / Client

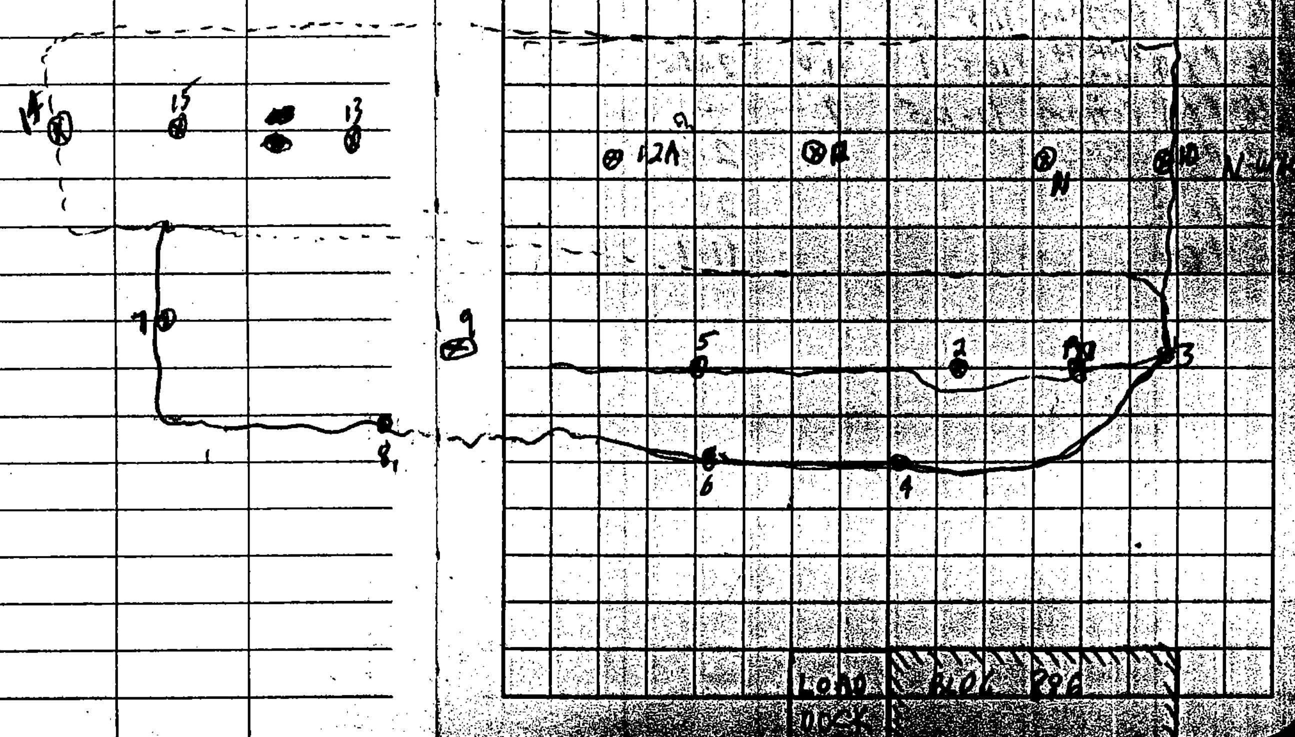
Location BLDG. 886 AST Date

Project / Client

Location BLDG. 886AST Date

Project / Client

SCALE 1 IN = 20 FT.



 Location ______ Date ______

Project / Client ______

SAMPLE#	LOCATION	DEPTH	PID	DATE
886-PX1	BOTTOM	12-12.5	2	1-16-02
886-PX2	BOTTOM	12-12.5	3.5	"
886-PX3	NORTH WALL	9.5-10	2.2	"
886-PX4	EAST WALL	10-10.5	1.8	"
886-PX5	BOTTOM	12-12.5	1	1-25-02
886-PX6	EAST WALL	11-11.5	3	"
886-PX7	SOUTH WALL	11-11.5	1	1-30-02
886-PX8	EAST WALL	10.5-11	1.5	"
886-PX9	BOTTOM	11.5-12	1	"
886-PX10	NORTH WALL	10.5-11	11.0	2-4-02
886-PX11	BOTTOM	12-12.5	8	"
886-PX12	BOTTOM / WA BOTTOM			2-6
886-PX13				2-'
PX14				11-1

Location ______ Date ______

Project / Client ______

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

886

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

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

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-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.)

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

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-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

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

PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

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-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.)

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
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

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-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

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)

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Name of Owner: U.S Army

Name of Facility: Fort Monmouth, Eatontown, NJ

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): 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.)

Station Eleven 2 (NAVD 88)

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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-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.)

Station Eleven 2 (NAVD 88)

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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-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.)

Station Eleven 2 (NAVD 88)

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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-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

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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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): 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

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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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): 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

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

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-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

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

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): 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

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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HANDEX®
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

RECEIVED
SEP 25 2003

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 Howlett

Fred M. Howlett
Associate Project Manager

Enclosure(s)

Cc: Handex – File Copy

500 Campus Drive, Morganville, New Jersey 07751-0451 • (732) 536-8500 • FAX (732) 536-7751

CEE

GNE/200/SOS

Down-well Controllerless Genie Product Only Recovery System

SPECIFICATIONS

The GNE/200/SOS System is a controllerless Product Only Recovery System that removes free-floating hydrocarbon down to a sheen (≤ 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 olleophilic 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 (≤ 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

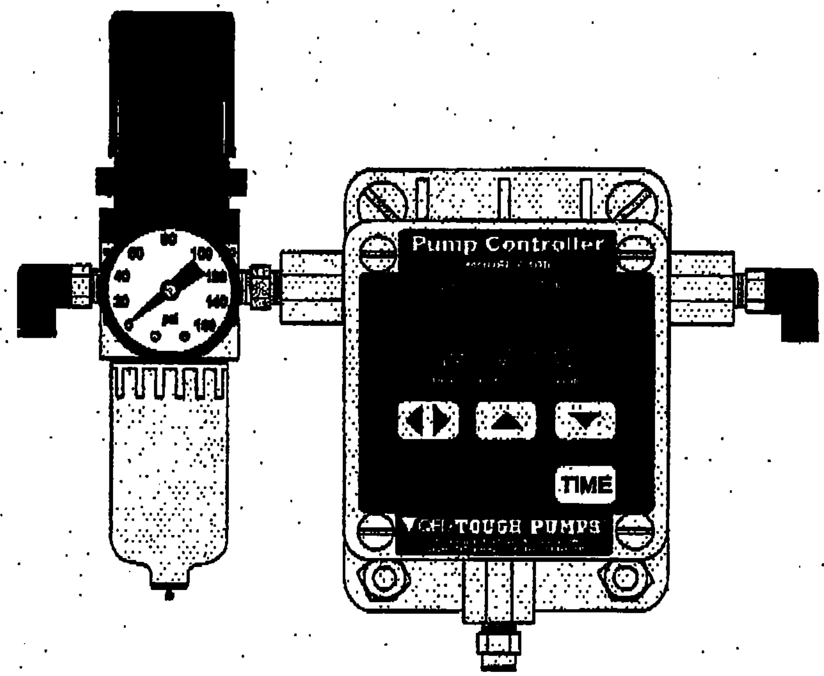
COMPONENT AND SHIPPING WEIGHTS

ITEM		COMPONENT [illegible]	SHIPPING [illegible]
Skimmers:	SOS-2	1.5 / 0.7	3 / 1.4
	SOS-4	3.5 / 1.6	5 / 2.3
Genie Pump		6.0 / 2.7	9 / 4.1
Hoses		Varies	Varies

TOUGH PUMPS

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.

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

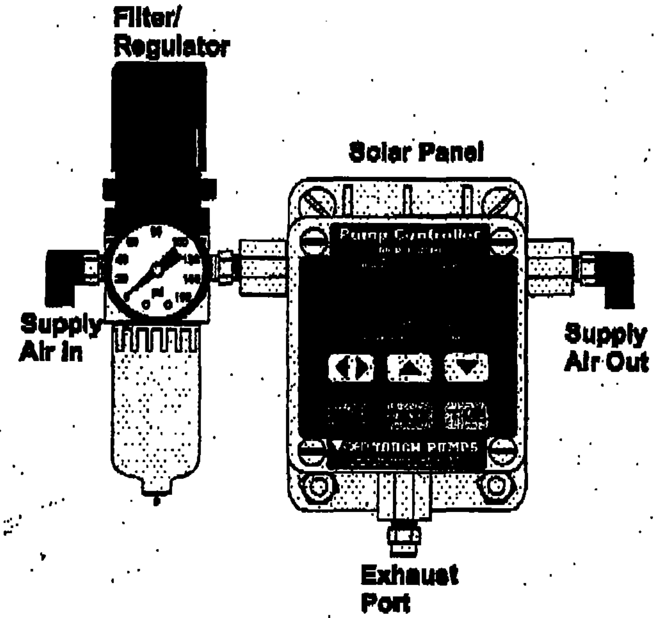
FERRET™ IN WELL SEPARATOR

QED Environmental Systems, Inc.

P.O. Box 3726, Ann Arbor, Michigan 48106 • 734-995-2547 800-624-2026 Fax: 734-995-1170 • E-Mail: info@qedenv.com Website: http://www.qedenv.com

P/N 2240 REV. #1 2-25-99

TECHNICAL DATA / SPECIFICATION SHEET — SOLAR/ELECTRICAL/PNEUMATIC PUMP CONTROLLER — C100



CONTROL KEYS:

Allows manual toggling of valve and system ON & OFF cycles. Also allows enabling & disabling of system.

DATA — Multi screen key to sequentially display well status, battery status, solar panel voltage, ON/OFF and system valve.

TIME — 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.

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 508

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:

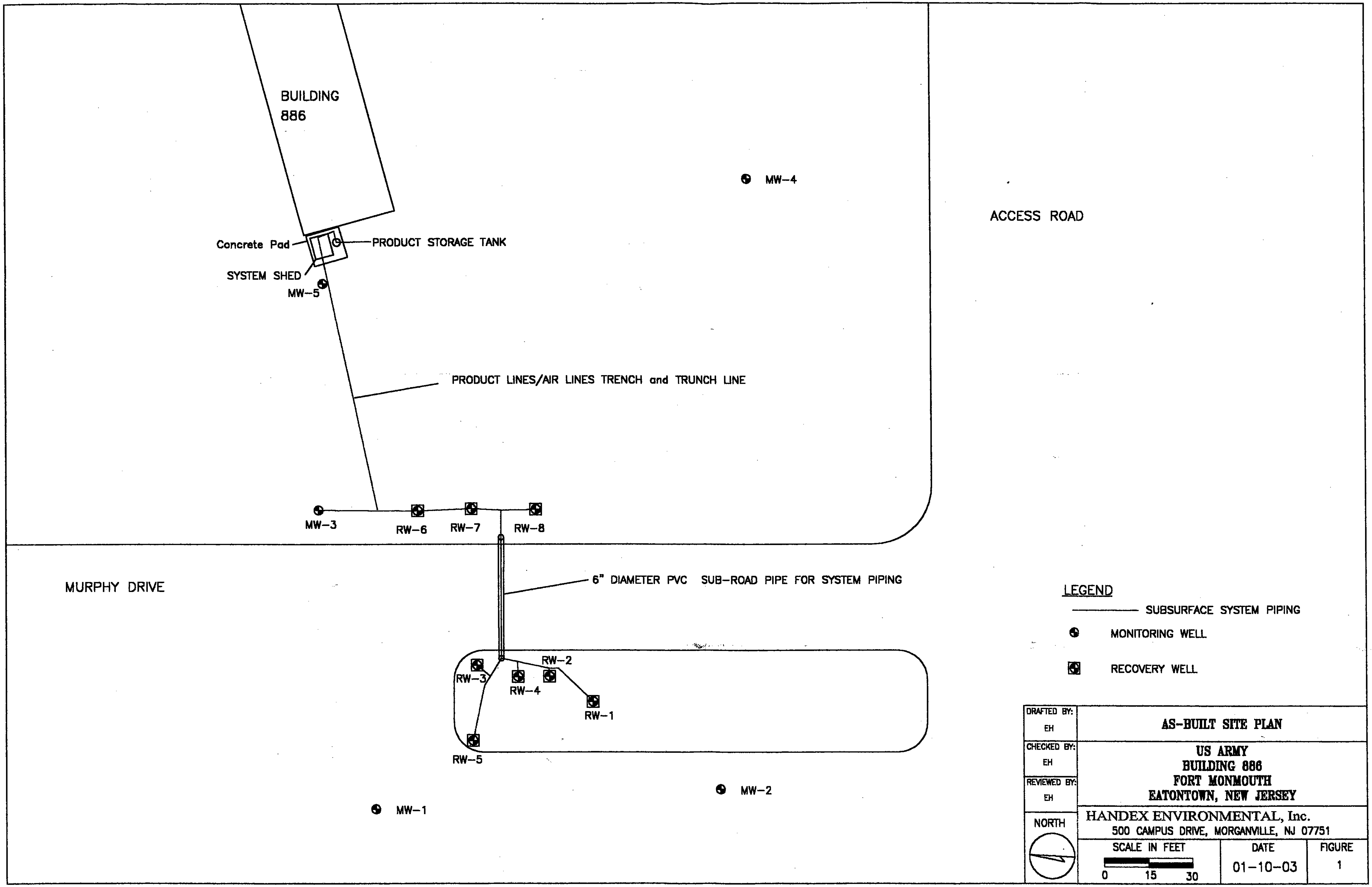
TYPE - Latching solenoid w/ dual port manifold

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



DRAFTED BY: EH	**AS-BUILT SITE PLAN**
CHECKED BY: EH	**US ARMY BUILDING 886 FORT MONMOUTH EATONTOWN, NEW JERSEY**
REVIEWED BY: EH	
	HANDEX ENVIRONMENTAL, Inc. 500 CAMPUS DRIVE, MORGANVILLE, NJ 07751
	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

See report for full appendix

APPENDIX D

Laboratory Data Sheets for Remedial Investigation Soil Sampling

See report for full appendix

APPENDIX E

Laboratory Data Sheets for Geoprobe Groundwater Sampling

See report for full appendix

APPENDIX F

Laboratory Data Sheets for Monitoring Well Groundwater Sampling

See report for full appendix

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5000

REPLY TO
ATTENTION OF

Directorate of Public Works

OCT 22 2010

Mr. Larry Quinn, Site Manager
New Jersey Department of Environmental Protection
Bureau of Investigation, Design and Construction
401 East State Street, P.O. Box 413
Trenton, New Jersey 08625-0413

Re: Site 886 (FTMM-66) Remedial Action Progress Report
April 2003 through December 2008 (2nd Quarter 2003 – 4th Quarter 2008)
Dated: September 2010
Fort Monmouth, New Jersey

Dear Mr. Quinn:

U.S. Army Fort Monmouth, New Jersey is pleased to submit the *Remedial Action Progress Report* (RAPR) for Site 886 (FTMM-66), Fort Monmouth, New Jersey. This RAPR was prepared in accordance with the voluntary cleanup agreement between U.S. Army and the New Jersey Department of Environmental Protection (NJDEP) dated August 2000, and the NJDEP's *Technical Requirements for Site Remediation (TRSR)*, New Jersey Administrative Code 7:26E-6.5 (February 2002). Enclosed please find the Electronic Data Delivery (EDD) documents and the completed RAPR Checklist.

Should you have any questions or require any additional information, please contact Mr. Charles Appleby, Environmental Protection Specialist, at 732-532-2692 or email: **Charles.Appleby@US.Army.mil**

Sincerely,

Joseph M. Fallon

Joseph M. Fallon, CHMM
Chief, Environmental Branch

Encl. 1: RAPR, (2nd Quarter 2003 through 4th Quarter 2008)
Encl. 2: Completed RAPR Checklist
Encl. 3: EDD, one disk

Encl. 2, Completed RAPR Checklist

SRP CHECKLIST:		**REMEDIAL ACTION PROGRESS REPORT 2nd Quarter 2003 through 4th Quarter 2008 Site 886 (FTMM-66)**		
	N.J.A.C. 7:26E-	**Use this checklist to assure that the remedial action progress report is complete and meets all technical requirements.**	**Included: Yes/No/NA**	**Page #**
	6.6(a)	Have progress reports been submitted as required?	NA	
	6.6(b)1	Is a description of each remedial action included and adequate?	Yes	3-1
	6.6(b)2	Is a discussion of problems and proposal for correction included and adequate?	NA	
	6.6(b)3	Are proposals for deviation from approved WP adequately addressed?	NA	
		6.3(e)3iii If requesting to reduce sampling frequency have the requirements at 6.3(e)3iii and in Appendix C been met?	NA	
	6.6(b)4	Is a revised schedule included and adequate?	Yes	6-2 & App.E
	6.6(b)5	Is the status of permit applications included and adequate?	NA	
	6.6(b)6	Is a list of upcoming remedial actions included and adequate?	Yes	6-2 & App.E
	6.6(b)7	Is the cost of each remedial action adequately documented?	Yes	6-1 & App.E
	6.6(b)8	Is a table of sampling results, summary of data and conclusions included and adequate?	Yes	6-1 & Tables Section
	6.6(b)9	Is information for active GW remediation included and adequate?	NA	
		6.6(b)9i Has a ground water Contour Map Reporting Form (Appendix G) been completed and included?	Yes	Figures Section
	6.6(b)10	Is information for natural GW remediation included and adequate?	Yes	4-1 & 5-1
	6.6(b)11	Is a description of wastes generated included and adequate?	Yes	4-2
	6.6(b)12	Has other important information been included:	NA	
		If not previously provided, has a map of the CEA been included along with a CEA Factsheet from Appendix F?	NA	
		If the RAPR includes a proposal to revise the CEA, has all the necessary information per 6.3 and Appendix F been included?	NA	
		Does the report indicate whether biennial certifications have been submitted for CEAs &/or DERs?	NA	

United States Army
Fort Monmouth, New Jersey

Site 886 (FTMM-66)
Remedial Action Progress Report
(2^{nd} Quarter 2003 through 4^{th} Quarter 2008)
NJDEP Case Number # 97-1-11-0938-02

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

Prepared By:

VEETech, P. C.

113 Centrewest Court
Cary, N.C. 27513
919-388-0037

Work Order No. 1042-06-017

July 2010

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EXECUTIVE SUMMARY

This *Remedial Action Progress Report* (RAPR) documents the quarterly sampling of five monitoring wells and eight recovery wells at Site 886 (FTMM-66) from the 2nd Quarter 2003 through the 4th Quarter 2008 (Rounds 2 through 24) to monitor the progress of the natural attenuation program in reducing contaminant levels in ground water.

Site 886 is located at the Main Post Area of Fort Monmouth, New Jersey (Figure 2-1). Site 886 includes Building 886, a former equipment-storage building, and is located in the south part of the Main Post Area at the intersection of Murphy Road and Lane Avenue, approximately 950 feet south of Husky Brook. A 250,000-gallon aboveground storage tank (AST) for #2 fuel oil was removed from the site in the 1970s. The AST was remotely filled from a railroad siding and connected underground piping which started approximately 200 feet to the West of the AST site at a historic railroad siding. During the removal of a 1,000-gallon #2 fuel underground storage tank (UST) in April 1998, extensive subsurface petroleum contamination was found. On January 11, 1997, New Jersey Department of Environmental Protection (NJDEP) Case #97-1-11-0938-02 was assigned to Site 886.

The Directorate of Public Works (DPW) subsequently conducted a Remedial Investigation (RI) to delineate impacts of petroleum product on soils and ground water. The RI was conducted in two phases, followed by excavation of contaminated soils and confirmation sampling. This work was completed between January 2002 and February 2003. 4,000 tons of fuel-impacted soils were excavated, and a product-recovery system was installed in January 2003 to remove free product from the ground water table. The recovery system included five monitoring wells and eight recovery wells and was first sampled in February 2003. This system is used for long term monitoring, but the amount of recoverable free product has been minimal and the recovery system has not been activated on a full-time basis.

Based on the results of the initial sampling, benzene was identified as a Contaminant of Concern (COC) in ground water. Predictive modeling in the *Remedial Action Report* (RAR) indicated that after source removal, benzene concentrations would degrade naturally to below NJDEP Class II-A Ground Water Quality Standard (GWQS), and the plume would not migrate offsite.

During the current sampling period, benzene was detected above the NJDEP standard of 1.0 µg/L in samples collected at wells 886RW01, 886RW02 and 886RW08 at concentrations ranging from not detected (ND) to 7.95 µg/L. Benzene concentrations have generally decreased with time.

The reduction of benzene concentrations in these wells and the absence of benzene exceeding GWQS in wells downgradient and in the source area confirm that the plume is degrading and not migrating offsite. Benzene concentrations continue to be detected in 886RW01 on the same order of magnitude as the GWQS. Benzene concentrations continue to be detected in 886RW02; however, concentrations have not exceeded the GWQS for the last three years of monitoring. Benzene has not been detected in 886RW08 in the last five years of monitoring.

The RAR prepared by Versar, Inc. (VERSAR) dated January 2006 stated N-Nitrosodiphenylamine as a potential COC based on a concentration of 38.99 µg/L detected in 886MW03 once on February 12, 2003. N-Nitrosodiphenylamine was not detected in 886MW03 since its detection in February 2003 and therefore is no longer a potential COC.

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1.0 INTRODUCTION

A monitored natural attenuation program to remediate benzene at Site 886 is being conducted in accordance with the RAR prepared by VERSAR dated January 2006. Site 886 is located at the Main Post Area of Fort Monmouth, New Jersey (Figure 2-1). The U.S. Army Garrison Fort Monmouth, DPW and Chenega Technology Services Corporation issued the contract under Chenega purchase order number C06-02456 to VEETech, P.C. (VEETech) to prepare this RAPR. This report documents ground water monitoring during the current reporting period of the 2nd Quarter 2003 through the 4th Quarter 2008 (Rounds 2 through 24).

1.1 Objectives

The objective of this RAPR is to document the implementation of the remedial action program performed at Site 886 during the current reporting period of the 2nd Quarter 2003 through the 4th Quarter 2008. Monitored natural attenuation was implemented by the DPW as a Remedial Action (RA). The purpose of the RA was to monitor the contaminant-affected areas at the site to evaluate the effectiveness of natural attenuation to reduce the contaminant concentrations to comply with the NJDEP Class II-A aquifer GWQS. The remedial activities were conducted in accordance with the NJDEP *Technical Requirements for Site Remediation* (September 2, 2008), N.J.A.C. 7:26E *et seq*. and the Site 886 RAR (Appendix A).

The RA and subsequent preparation of this RAPR encompassed the following:

- Conducting quarterly rounds of ground water sampling and documenting the results to evaluate the effectiveness of the RA,
- Comparing the results of the ground water sampling with the NJDEP GWQS,
- Identifying and discussing recommendations with the DPW for the continuation of this RA, and
- Documenting remedial activities as required by the NJDEP *Technical Requirements for Site Remediation*, N.J.A.C. 7:26E *et seq*.

1.2 Report Organization

Section 2.0 discusses the site history and background information for Site 886. Section 3.0 discusses the remedial activities (natural attenuation) conducted at Site 886. Section 4.0 discusses ground water monitoring and sampling activities at the site. Section 5.0 presents the analytical results of the ground water sampling. Section 6.0 discusses the effectiveness of the RA and provides recommendations to the DPW for Site 886. Section 7.0 is the reference section.

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2.0 SITE BACKGROUND

The following sections describe the site background of Site 886. Included is a description of the site location, site history, and background investigations.

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). The U.S. Army Garrison Fort Monmouth incorporates the Main Post and a subpost, the Charles Wood Area. The Main Post is approximately 630 acres and is linked to the State Highway 35. Figure 2-1 shows the location of Site 886. Site 886 includes Building 886 and is located in the south part of the Main Post Area at the intersection of Murphy Road and Lane Avenue, approximately 950 feet south of Husky Brook. A site layout map is provided in Figure 2-2.The environmental setting (regional/local geology and hydrogeology) of the site is described in the RAR prepared by VERSAR, dated January 2006 (Appendix A).

2.2 Site History and Background Investigations

In the early 1990s, the DPW developed an underground storage tank (UST) program for managing approximately 506 USTs located throughout the Fort Monmouth installation (Main Post and Charles Wood areas). This program was created to work toward replacing the use of heating oil as a major energy source with natural gas. The program also included the closure of regulated waste oil and gasoline USTs.

Building 886 was used for equipment storage. A 250,000-gallon above ground storage tank (AST) for #2 fuel oil was removed from the site in the 1970s. During the removal of a 1,000-gallon #2 fuel UST in April 1998, holes were observed in the tank walls and extensive soil and ground water contamination was discovered. Further investigation was conducted to delineate the extent of impact to the site. This was followed by excavation and removal of limited volumes of petroleum impacted soils. The DPW conducted additional Remedial Investigation (RI) to fully delineate the extent of contamination and initiated further remediation. The results of this additional activity were presented in the RAR, summarized in the following section.

2.2.1 Remedial Action Report (RAR), 2006 - VERSAR

VERSAR prepared and submitted a RAR dated January 2006 to Fort Monmouth (Appendix A) that analyzed data collected by the Fort Monmouth DPW RI and documented the remedial activities conducted at the site.

The Phase I RA conducted from January through March 2002 included excavation and off-site disposal of contaminated soils in the areas of the former storage tanks. Excavation and confirmation sampling occurred in several stages. The confirmation sampling indicated that contamination was more extensive and product was observed at the water table in the excavations.

A Phase I RI was conducted from March through June 2002 to define the aerial extent of remaining contamination in soils and ground water in the vicinity of Building 886. This included Geoprobe borings for soil sampling and limited excavation of contaminated soils. 345 subsurface soil samples were collected and analyzed for Total Petroleum Hydrocarbons (TPHC).

27 soil samples from borings that contained TPHC concentrations over 1,000 milligram per kilogram (mg/Kg) were analyzed for Volatile Organic Compounds (VOCs).

Because free product was observed in the excavation, 27 temporary well points were installed. Free hydrocarbon product was observed in 12 of the temporary wells. Ground water samples were collected in June 2002 from two of the impacted wells. Samples were analyzed for VOCs and Semi-Volatile Organic Compounds (SVOCs). VOCs and SVOCs were not detected in either sample exceeding the NJDEP GWQS.

The Phase II RI was conducted in November 2002 and included 31 additional samples from 12 Geoprobe locations to complete the soils delineation. Based on the results of the investigation, additional remedial action was implemented from November 2002 through February 2003. This included the excavation and disposal of over 4,000 tons of hydrocarbon impacted soils that exceeded the NJDEP Residential Direct Contact Soil Cleanup Standard (RDCSCS) for TPHC (10,000 mg/Kg) and post excavation sampling. These soils were removed from an area separate from the UST area. This release may have been associated with the 250,000 gallon AST removed in the 1970s.

A system to recover product from the ground water surface was installed in January 2003. The system included five monitoring wells outside of the source area, eight recovery wells within the source area, and an automated product recovery system.

Initial sampling of the monitoring and recovery wells in February 2003 resulted in detection of benzene above the NJDEP GWQS in three wells (886RW02, 886RW05 and 886RW07) at concentrations ranging from 1.09 to 2.16 micrograms per liter (µg/L). 2-Butanone (methyl ethyl ketone or MEK) was also detected in two recovery wells (886RW01 and 886RW08) at very high concentrations 29,510.7 – 30,039.7 µg/L. The source of the MEK was suspected to be the result of use of pipe joint glue in the recovery system installation. A SVOC, N-Nitrosodiphenylamine was also detected in one well, 886MW03, at a concentration exceeding the GWQS. The source of this compound was not identified, and the distribution did not appear to be extensive. Based on these results, benzene was designated as a COC, and N-Nitrosodiphenylamine was designated as a potential COC pending further analytical results.

Ground water modeling results presented in the RAR (Appendix A) indicated that benzene would not migrate from the source area at Site 886 to a nearby Husky Brook within the time period that it was predicted to degrade below the GWQS. Based on these results and the removal of the contaminant sources, the proposed additional RA was to allow the benzene plume to naturally attenuate until concentrations reduced to comply with the NJDEP Class II-A GWQS. Progress would be confirmed by quarterly monitoring of ground water.

3.0 REMEDIAL ACTIVITIES

An LNAPL (light non-aqueous phase liquid) skimmer system to recover free phase separating hydrocarbon (PSH) product from the ground water surface was installed in January 2003. The system included eight recovery wells within the source area, five monitoring wells outside of the source area, and an automated LNAPL recovery system. The amount of recoverable PSH product has been minimal and the recovery system has not been activated on a full-time basis. The product recovery system was operated by Handex Inc. until March 2004. The system has not been operational since that time.

Manual product gauging has taken place at recovery well 886RW04. Eight recovery events occurred at 886RW04 during the period from April 6, 2005 to September 1, 2005. Two pints of product were removed on April 6, 2005. Six of the following recovery events discovered a trace of product, and measurable product was not found in the final recovery event (September 1, 2005). Table 3-1 summarizes the product recovery measurements.

Sampling results documented in the VERSAR's RAR (January 2006) for Site 886 indicated that the shallow ground water contained the COC benzene at concentrations that exceeded the NJDEP GWQS. The benzene concentrations in ground water were expected to gradually decrease through natural attenuation.

The existing monitoring wells (886MW01 through 886MW05) and recovery wells (886RW01 though 886RW08) were adequately placed to monitor downgradient ground water; therefore, the DPW proposed natural attenuation with LTM as the remediation remedy for Site 886. Ground water samples are collected on a quarterly basis.

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4.0 MONITORING AND SAMPLING ACTIVITIES

As part of the Long Term Monitoring (LTM) program at Site 886, quarterly ground water monitoring continued from the 2nd Quarter 2003 through the 4th Quarter 2008 (Rounds 2 through 24). Ground water samples were collected from five monitoring wells (886MW01, 886MW02, 886MW03, 886MW04, and 886MW05) and eight recovery wells (886RW01, 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, 886RW07, and 886RW08) during twenty-three quarterly sampling events. Laboratory analytical reports for the Site 886 LTM during this reporting period are presented in Appendix B, and the analytical results are presented and discussed in the following Section 5.0 and Tables 5-1 through 5-13 of this RAPR.

Sampling was conducted by the DPW in accordance with the established protocols as described in the *Fort Monmouth Standard Sampling Operating Procedure* (SOP No.: SAM-0205, August 1999, Revision #1 January 2003, Revision #2 September 2004, Revision #3 January 2006, and Revision #4 April 2008, Appendix C) and the *NJDEP Field Sampling Procedures Manual*, August 2005. Ground water samples were analyzed for VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs) and Target Analyte List (TAL) metals. Analysis of pesticides/PCBs and Metals was discontinued in November 2004 after approval from NJDEP (Appendix D). Laboratory analyses of the samples were conducted at the Fort Monmouth Environmental Testing Laboratory (FMETL), a New Jersey certified laboratory (Certification No. 13461).

4.1 Ground Water Monitoring

During this reporting period at Site 886 (2nd Quarter 2003 through the 4th Quarter 2008), ground water was encountered at elevations ranging from 7.23 to 14.45 feet above mean sea level (msl). Static depth to water from the top of the well casings were measured at each monitoring well on a quarterly basis except for 886MW05, which was not measured during the 4th Quarter 2004 (Round 8) and the 1st Quarter 2005 (Round 9). Measurements were taken at 886RW01 and 886RW08 on a quarterly basis in 2003. All recovery wells were measured on an annual basis from the 1st Quarter 2004 (Round 5) to the 1st quarter 2006 (Round 13) then quarterly thereafter, with two exceptions. Recovery well 886RW07 was not sampled in the 1st Quarter 2005 (Round 9). Additionally, measurements were not taken at any recovery wells in the 3rd Quarter 2006 (Round 15).

On January 24, 2006 (Round 13) during the regular quarterly sampling event, 0.03 foot of PSH product was observed in recovery well 886RW04. As a result of the product thickness, recovery well 886RW04 was not sampled. Figure 2-2 illustrates the locations of the monitoring wells. Depth to water measurement results are summarized in Table 4-1.

Ground water-elevation contour maps were generated for 15 of 23 rounds of sampling. Contour maps were not constructed for Round 5, Round 9, Round 13, Round 16, Round 17, Round 18, Round 20, and Round 21 due to depth to ground water gauging activities conducted on multiple days. To prevent inconsistency in ground water direction and contour lines, these ground water-elevation contour maps were eliminated from reporting. The contour maps are presented in Figures 4-1 through Figure 4-23 along with the required NJDEP contour map reporting forms.

The contour maps indicate that shallow ground water underlying Site 886 consistently flows to the north-northwest. Significant variations in ground water flow conditions were not observed through the current monitoring period.

4.2 Ground Water Sampling

Quarterly ground water sampling of the five monitoring wells and eight recovery wells was conducted by the DPW. Quality control samples for the monitoring period included 33 method blanks, 31 trip blanks, 31 field blanks, and 31 field duplicate samples.

Sampling equipment was thoroughly decontaminated before and after each use. Following collection, the ground water samples were immediately placed in laboratory-supplied bottle ware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

Copies of the chain-of-custody forms and the laboratory analytical data sheets are presented in Appendix B. A summary of the ground water sampling activities for the remediation monitoring (Rounds 2 through 24) including round numbers, well IDs, sample IDs, sample locations, collection dates, analytical parameters, and analysis methods is provided in Table 4-2. Figure 2-2 illustrates the locations of the monitoring wells. The analytical results are discussed in Section 5.1.

4.3 Types of Waste Generated and Disposal Methods

The waste types generated by the remedial activities included three-gallon polyethylene pails, polyethylene tubing, Teflon® bailers, mason string, and personal protective equipment (PPE). The pails were recycled, and the other materials were disposed of in accordance with the Fort Monmouth Solid Waste Management Plan.

5.0 SITE ANALYTICAL RESULTS

This section includes a summary discussion of the chemical characterization of Site 886 based on the samples collected and analyzed for the current reporting period, including twenty-three quarterly rounds of ground water monitoring for five monitoring wells (886MW01 through 886MW05) and eight recovery wells (886RW01 through 886RW08).

5.1 Ground Water Sampling Results

Analytical results from each of the five monitoring wells and eight recovery wells on Site 886 for Rounds 2 through 24 are summarized in Tables 5-1 through Table 5-13. Ground water summary tables include detected analytical results for Site 886 and are divided by monitoring well number and sampling date. The characterization of ground water quality at Site 886 contains 23 quarterly ground water sampling events conducted from May 2003 through November 2008. The ground water results are compared to the NJDEP GWQS and are presented in three different tabs reflecting changes to the NJDEP standard. The first set of data is compared against the January 7, 1993 standard; the next is when a standard change occurred on November 7, 2005; followed by another standard change on July 27, 2007.

The results in the ground water summary tables include analyte detections as well as exceedances of the NJDEP GWQS, which are bolded and shaded. VOCs, SVOCs, pesticides/PCBs, and metals are presented as required to summarize results for detected compounds. Detections are presented in the ground water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m,p*-xylenes).
- Tentatively Identified Compounds (TICs) are added and reported as a total concentration for the sum of TICs detected for VOCs and SVOCs.
- Duplicate samples are included after the respective primary sample.
- A “J” value is a concentration exceeding the Method Detection Limit (MDL) but less than the Reporting Limit (RL) for VOCs, SVOCs, and pesticides/PCBs.
- Estimated Results “ER” are concentrations exceeding the MDL and less than the RL for metals.
- A “B” value is a compound detected in the sample and its associated blank sample.
- Sample suites that were discontinued are recorded in the footnotes along with a date of NJDEP case manager approval.
- If a particular sample suite or analyte was not detected in a monitoring well, the suite/analyte is not presented in the monitoring well summary table.

VOCs

During twenty-three quarterly sampling events for the current reporting period, eight VOCs were detected in Site 886 ground water samples. One VOC (benzene) was detected at concentrations that exceeded the GWQS. Benzene was detected above GWQS in more than one sample. Seven VOCs (acetone, ethylbenzene, 2-butanone, methyl *tert*-butyl ether, toluene, xylenes, and *cis*-1,2-dichloroethene) were detected below their respective GWQS.

Analytical results for wells sampled during the current reporting period exceeded the NJDEP GWQS for benzene in recovery wells 886RW01, 886RW02, and 886RW08. Benzene has been identified as the Contaminant of Concern (COC).

SVOCs

During the sampling events for the current reporting period, 11 SVOCs were detected in Site 886 ground water samples. One SVOC (bis (2-ethylhexyl) phthalate) was detected at a concentration exceeding its GWQS. Bis (2-ethylhexyl) phthalate was detected in only one ground water sample. 10 SVOCs (2-methylnaphthalene, acenaphthene, dibenzofuran, diethyl phthalate, fluorene, naphthalene, n-nitrosodiphenylamine, phenanthrene, anthracene, and 4-methylphenol) were detected below their respective GWQS.

The concentration of bis (2-ethylhexyl) phthalate exceeded the NJDEP GWQS in monitoring well 886MW04 for only one quarterly ground water monitoring event (Round 20) and is not considered a COC. The remaining SVOCs were detected below their respective GWQS.

Metals

During sampling events taking place up to November 2004, ten metals were detected in Site 886 ground water samples. Four metals (aluminum, arsenic, cadmium, and lead) were detected at concentrations that exceeded their respective GWQS. Samples that exceeded the GWQS did not exceed the Maximum Background Concentration (MBC) for ground water established in the Weston (1995) report.

Table 5-14 summarizes the analytical results which exceeded the GWQS during the current reporting period. Figure 5-1 illustrates the analytical results for benzene on the site layout map.

5.1.1 Contaminants of Concern (COCs)

Benzene was detected in 886RW01 at concentrations ranging from not detected to 7.95 µg/L (Round 2) during the current reporting period. The NJDEP GWQS for benzene is 1 µg/L. Figure 5-2 illustrates the benzene concentration trend over time in recovery well 886RW01, including all quarters of the Long Term Monitoring (LTM) program since May 2003.

Benzene was detected above NJDEP GWQS in 886RW02 at concentrations ranging from not detected to 2.14 µg/L (Round 5). Benzene concentrations in 886RW02 have generally decreased over time and have been below the NJDEP GWQS since January 2005. Figure 5-3 illustrates the benzene concentration trend over time in recovery well 886RW02, including all quarters of the Long Term Monitoring (LTM) program since February 2004.

Benzene was detected above NJDEP GWQS in 886RW08 at concentrations ranging from not detected to 2.13 µg/L (Round 2). Benzene concentrations in 886RW08 have not been detected since October 2003.

N-Nitrosodiphenylamine was not detected in 886MW03 since its detection in February 2003. N-Nitrosodiphenylamine is no longer a potential COC as it has not been detected since that first round of sampling.

5.2 Tentatively Identified Compounds (TICs)

During the reporting period, all of the thirteen wells sampled had VOC TICs detected for at least one sampling event. Twelve of the wells had TIC concentrations below the NJDEP GWQS. 886RW01 had VOC TIC concentrations detected that exceeded the NJDEP GWQS in one round

(Round 19). Round 19 had an individual TIC estimated concentration of 120 µg/L for an unknown TIC and 150 µg/L for 2-methylnaphthalene, which exceeded the individual TIC GWQS of 100 µg/L. The total concentration of 15 TICs for Round 19 was 519 µg/L, which also exceeded the GWQS for total TICs of 500 µg/L. Table 5-15 summarizes the analytical results for the VOC TICs during this reporting period.

During this reporting period, all of the thirteen wells sampled had SVOC TICs detected for at least four sampling events. On five sampling events (Round 3, Round 9, Round 13, Round 18, and Round 21) analytical results indicated concentrations of TICs exceeding the NJDEP GWQS of 100 µg/L for an individual compound or 500 µg/L for total TIC concentrations.

- In Round 3 monitoring well 886MW05 had a total concentration of 722 µg/L for 25 TICs, which exceeded the GWQS of 500 µg/L for total TICs.
- In Round 9 recovery well 886RW04 had a total concentration of 789 µg/L for 25 TICs, which exceeded the GWQS of 500 µg/L for total TICs.
- In Round 13 recovery well 886RW01 had a total concentration of 732 µg/L for 25 TICs, which exceeded the GWQS of 500 µg/L for total TICs.
- In Round 18 monitoring well 886MW04 had an individual TIC estimated concentration of 170 µg/L for 4-hydroxy-4-methyl-2-pentanone, which exceeded the individual TIC GWQS of 100 µg/L.
- In Round 21 recovery well 886RW01 had a total concentration of 516.23 µg/L for 25 TICs, which exceeded the GWQS of 500 µg/L for total TICs.

5.3 Quality Assurance/Quality Control (QA/QC)

To verify the reliability of the analytical results, VEETech reviewed the holding times for each sample and the results of the analyses of 33 method blanks, 31 trip blanks, 31 field blanks, and 31 field duplicate samples for the ground water samples. The discussion below is based on QA/QC for the ground water samples. Samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical methods.

<u>Method Blanks</u>

Laboratory method blanks were prepared by the laboratory for each batch of analyses performed for Site 886. These method blanks consisted of laboratory-grade water that is processed identically to the samples and analyzed with the sample batch. A total of 33 VOC method blanks were analyzed with the Site 886 samples during this reporting period.

Acetone was detected in two method blank samples at concentrations of 2.60 µg/L (Round 17) and 4.57 µg/L (Round 18), below the NJDEP GWQS of 6,000 µg/L for acetone. Acetone is a common laboratory contaminant and detection in the method blank sample is not indicative of a widespread laboratory contamination problem.

Chloroform was detected in two of the method blank samples at concentrations of 4.07 µg/L (Round 4) and 1.30 µg/L (Round 14), below the NJDEP GWQS of 70 µg/L for chloroform. Chloroform is also a common laboratory contaminant, and detection in two of the method blank samples is not indicative of a widespread laboratory contamination problem.

Benzene (the only COC) was not detected in the method blank samples.

<u>Trip Blanks</u>

A total of 31 trip blanks were included as part of the Site 886 sampling program for this reporting period to check for the potential for volatile organics to have been 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 along with the ground water samples.

Chloroform was detected in nine of the trip blanks at concentrations ranging from 0.37 µg/L (Round 17) to 6.31 µg/L (Round 4), below the NJDEP GWQS of 70 µg/L for chloroform.

Acetone was also detected in two of the trip blanks at concentrations of 27.86 µg/L (Round 23) and 5.60 µg/L (Round 24), below the NJDEP GWQS of 6,000 µg/L for acetone.

The detection of chloroform and acetone in trip blanks indicates that sample handling procedures, including sample containers, may have introduced VOC contamination into the sampling and analysis process. However, benzene (the only COC) was not detected in any of the trip blank samples.

<u>Field Blanks</u>

One field blank sample was obtained during each day's sampling activities to check for potential introduction of contaminants from the field sampling and equipment decontamination procedures. A total of 31 field blanks were collected during the Site 886 sampling program during this reporting period. The field blanks were collected by rinsing deionized water, supplied by the laboratory, over the sampling equipment used for daily activities. The water was collected in clean laboratory-supplied containers and submitted for analysis along with the Site 886 ground water samples.

Two VOCs (Chloroform and Acetone) were detected in the Field Blank analyses.

Chloroform was detected in ten field blank samples collected at concentrations ranging from 0.31 µg/L (Round 17) to 6.31 µg/L (Round 4), below the NJDEP GWQS of 70 µg/L.

Acetone was detected in two field blanks at concentrations of 27.79 µg/L (Round 22) and 5.08 µg/L (Round 23), below the NJDEP GWQS of 6,000 µg/L for acetone.

As noted for the trip blanks, these detections indicate that sample handling procedures, including sample containers, may have introduced contamination into the sampling and analysis process. However, benzene (the only COC) was not detected in any of the field blanks.

<u>Duplicate Samples</u>

A total of 31 field duplicate samples were also collected during this reporting period for the Site 886 sampling events to verify the consistency of the entire sampling and analytical procedure. Results from two of the field duplicates collected (Round 21) were not reported in the analytical data report for that quarter. Two field duplicate samples were collected for two days of sampling for Rounds 5, 9, 13, 16, 17, 18, 20, and 21.

A total of 28 sets of duplicate analyses were available for comparison. Two duplicate sets were not analyzed (Round 21). In Round 9 a duplicate (Sample ID # 5000903) had an unknown original. As a result, these duplicate sets could not be included in the Relative Percent Differences (RPDs) analysis.

The results for all of the duplicate sample analyses were close to those obtained for the primary sample analyses. The RPDs for the duplicate sample analyses ranged from 0.00 percent to 151.07 percent. The average RPD for the total sets of duplicate analyses was 11.41 percent. The duplicate sample analyses indicate a reasonable level of precision relative to typical environmental laboratory analytical result data sets. Table 5-17 summarizes the RPD calculations for duplicate samples collected for ground water.

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6.0 REMEDIAL ACTION PROGRESS

The long-term ground water monitoring results indicate the concentrations of benzene have generally decreased in ground water at Site 886. There is also no indication of plume migration offsite. The LNAPL recovery system discontinued operating in March 2004 due to lack of efficiency in recovering PSH from the Site.

6.1 Cost of Remediation Incurred To Date

The total cost to date for the annual implementation of the remedial actions performed at Site 886 is approximately $137K (Appendix E). This includes the preliminary assessment phase, site investigation, remedial investigation/feasibility study (RI/FS), remedial design (RD), long term monitoring (LTM), and reporting.

6.2 Conclusions

Benzene was detected above the NJDEP GWQS in 886RW01 during the current reporting period. Concentrations ranged from not detected to 7.95 µg/L (Round 2). The NJDEP GWQS for benzene is 1 µg/L. Figure 5-2 illustrates the trend in concentration of benzene relative to the current GWQS in well 886RW01 over time.

Benzene was detected above the NJDEP GWQS in 886RW02 during the current reporting period. Concentrations ranged from not detected to 2.14 µg/L (Round 5). Benzene concentrations have been below the GWQS since 2005. Figure 5-3 illustrates the trend in concentration of benzene relative to the current GWQS in well 886RW02.

Benzene was detected above the NJDEP GWQS in 886RW08 during the current reporting period. Concentrations ranged from not detected to 2.13 µg/L (Round 2). Benzene has not been detected in 886RW08 since 2003.

Benzene was detected below NJDEP GWQS in wells 886MW01 and 886RW05. Benzene was not detected in wells 886MW02, 886MW03, 886MW04, 886MW05, 886RW03, 886RW04, 886RW06, and 886RW07.

The January 2006 RAR submitted to NJDEP stated N-Nitrosodiphenylamine as a potential COC based on a concentration of 38.99 µg/L detected in 886MW03 detected once on February 12, 2003. N-Nitrosodiphenylamine was not detected in 886MW03 since its detection in February 2003. N-Nitrosodiphenylamine is no longer a potential COC as it has not been detected since that first round of sampling.

6.3 Recommendations

VEETech recommends that the DPW continue quarterly ground water sampling and monitoring activities, as concentrations of benzene in ground water (886RW01) continue to exceed NJDEP GWQS. Due to a decrease in detection of the COC (benzene) throughout Site 886, a significant reduction in the sampling program is warranted. Future sampling and analysis recommendations are summarized by well in the following section. Only one SVOC exceedance has been detected in the current reporting period (Round 20). The SVOC has not been detected since this exceedance. Remedial action progress will be monitored and reported to the NJDEP periodically.

During the current reporting period, several wells had VOC TICs and SVOC TICs detected above the NJDEP GWQS of 100 µg/L for an individual compound or 500 µg/L for total TIC concentrations. These TIC concentrations were not significant to warrant remedial action for TICs. Wells at Site 886 will continue to be monitored quarterly for TICs.

6.3.1 Sampling Program

The existing sampling plan will continue to monitor the site. The following table provides a summary of the current quarterly ground water sampling program at Site 886.

Monitoring Well	Analyzed for	Recommended Future Sampling	Reason
886MW01	VOCs, SVOCs	Continue Sampling	Downgradient Well
886MW02	VOCs, SVOCs	Continue Sampling	Side Gradient Well
886MW03	VOCs, SVOCs	Continue Sampling	Downgradient Well
886MW04	VOCs, SVOCs	Continue Sampling	Upgradient Well
886MW05	VOCs, SVOCs	Continue Sampling	Side Gradient Well
886RW01	VOCs, SVOCs	Continue Sampling	COC exceedances of GWQS for benzene.
886RW02	VOCs, SVOCs	Continue Sampling	COC exceedances of GWQS for benzene and detection of COC throughout the current reporting period.
886RW03	VOCs, SVOCs	Continue Sampling	Downgradient Well
886RW04	VOCs, SVOCs	Continue Sampling	COC not detected.
886RW05	VOCs, SVOCs	Continue Sampling	Downgradient Well
886RW06	VOCs, SVOCs	Continue Sampling	Side Gradient Well
886RW07	VOCs, SVOCs	Continue Sampling	Side Gradient Well
886RW08	VOCs, SVOCs	Continue Sampling	Upgradient Well

6.4 Remedial Action Schedule

The table and Gantt Chart provided in Appendix E is a schedule summary for remedial activities at Site 886 from the Preliminary Assessment phase through the end of this reporting period and estimated into the future. This table/chart includes actual costs and schedule to date and estimated/anticipated costs and schedule projected for future activities.

7.0 REFERENCES

U.S. Geological Survey, Photorevised 1981, *Long Branch Quadrangle Map*.

Roy F. Weston, Inc. (Weston), December 1995, *Site Investigation Report – Main Post and Charles Wood Areas*, Fort Monmouth, New Jersey.

New Jersey Department of Environmental Protection, August 2005, *Field Sampling Procedures Manual.*

New Jersey Department of Environmental Protection, September 2008, *Technical Requirements for Site Remediation*, N.J.A.C. 7:26E

U.S. Army Garrison, Fort Monmouth, New Jersey, Directorate of Public Works (DPW), August 1999, Revision #1 January 2003, Revision #2 September 2004, Revision #3 January 2006, and Revision #4 April 2008, *Fort Monmouth Standard Sampling Operating Procedure (SOP No.: SAM-0205)*

Versar Inc., January 2006, *Remedial Action Report (RAR) – Building 886, Main Post*, Fort Monmouth, New Jersey.

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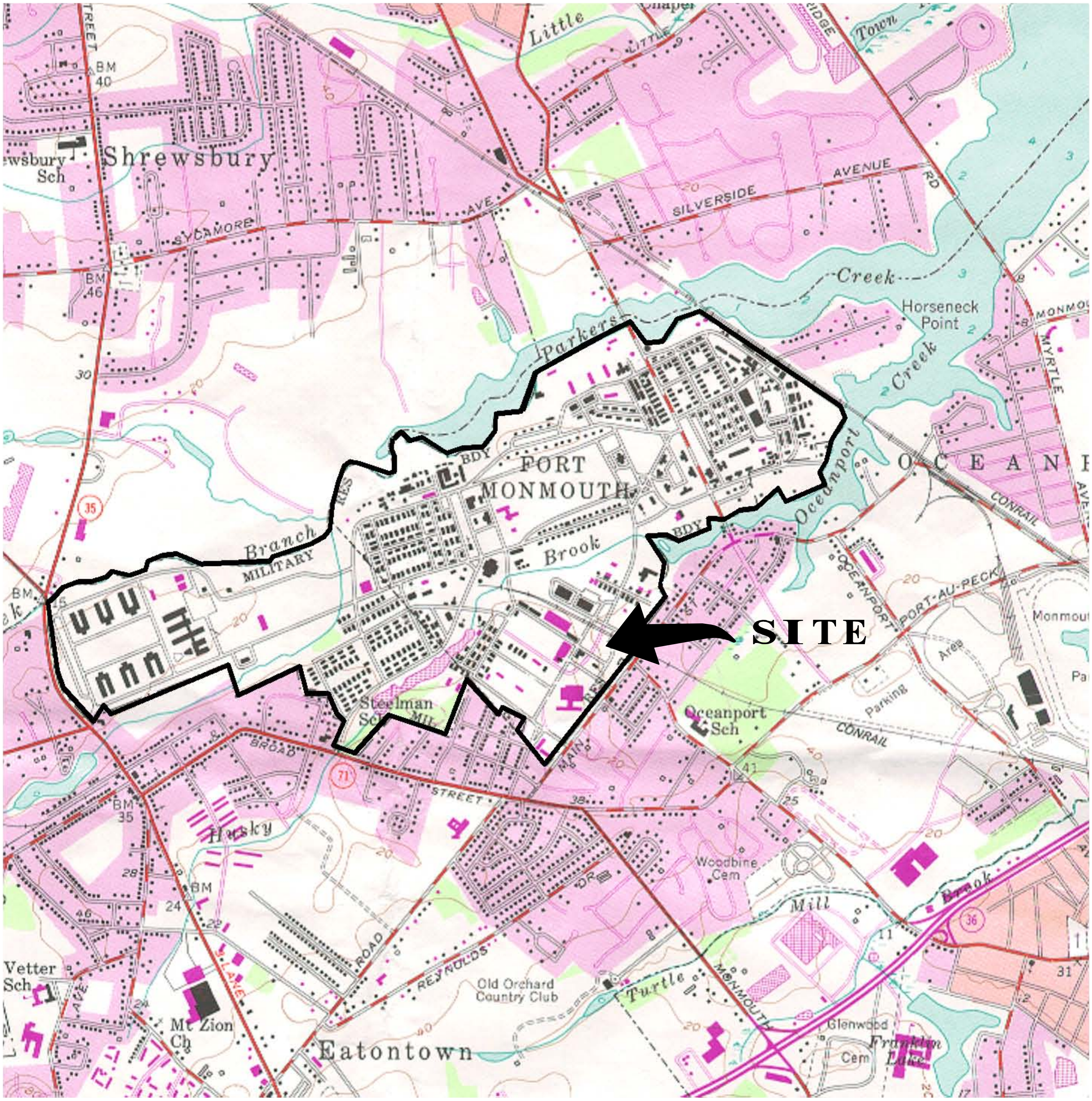
FIGURES



LONG BRANCH, N. J.
40073-C8-TF-024

1954
PHOTOREVISED 1981
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QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

Fig 2-1
Site 886 Location Map
Fort Monmouth, New Jersey

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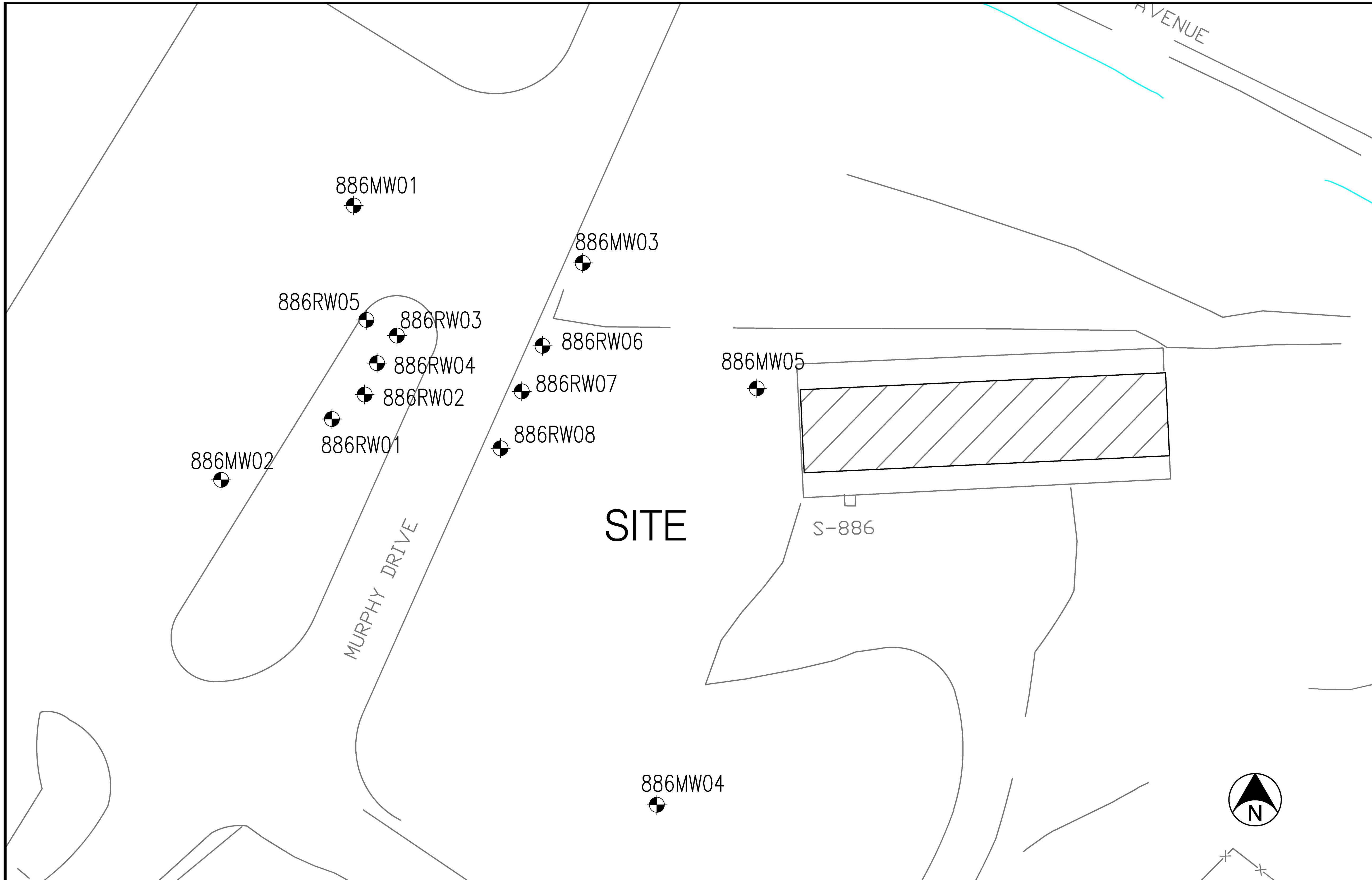


VEETech, P.C. 113 Centrewest Court Cary, NC 27513 Ph. 919-388-0037 Fx. 919-388-0038 www.veetechpc.com Technologists, Engineers and Designers For a Cleaner Environment	SITE LAYOUT MAP	PROJECT NO.: 1042-06-017	
	SITE 886 FORT MONMOUTH, NEW JERSEY	SCALE 1"=40'	22-DEC-09 FIGURE NO. 2-2

NOTE: THIS IS A COURTESY COPY OF THIS RULE. ALL OF THE DEPARTMENT'S RULES ALL COMPILED IN TITLE 7 OF THE NJ ADMINISTRATIVE CODE.

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-1 (May 22, 2003)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X__. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Recovery wells 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, and 886RW07 are omitted from the contour map, as these recovery wells were not monitored during this quarter.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X__. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

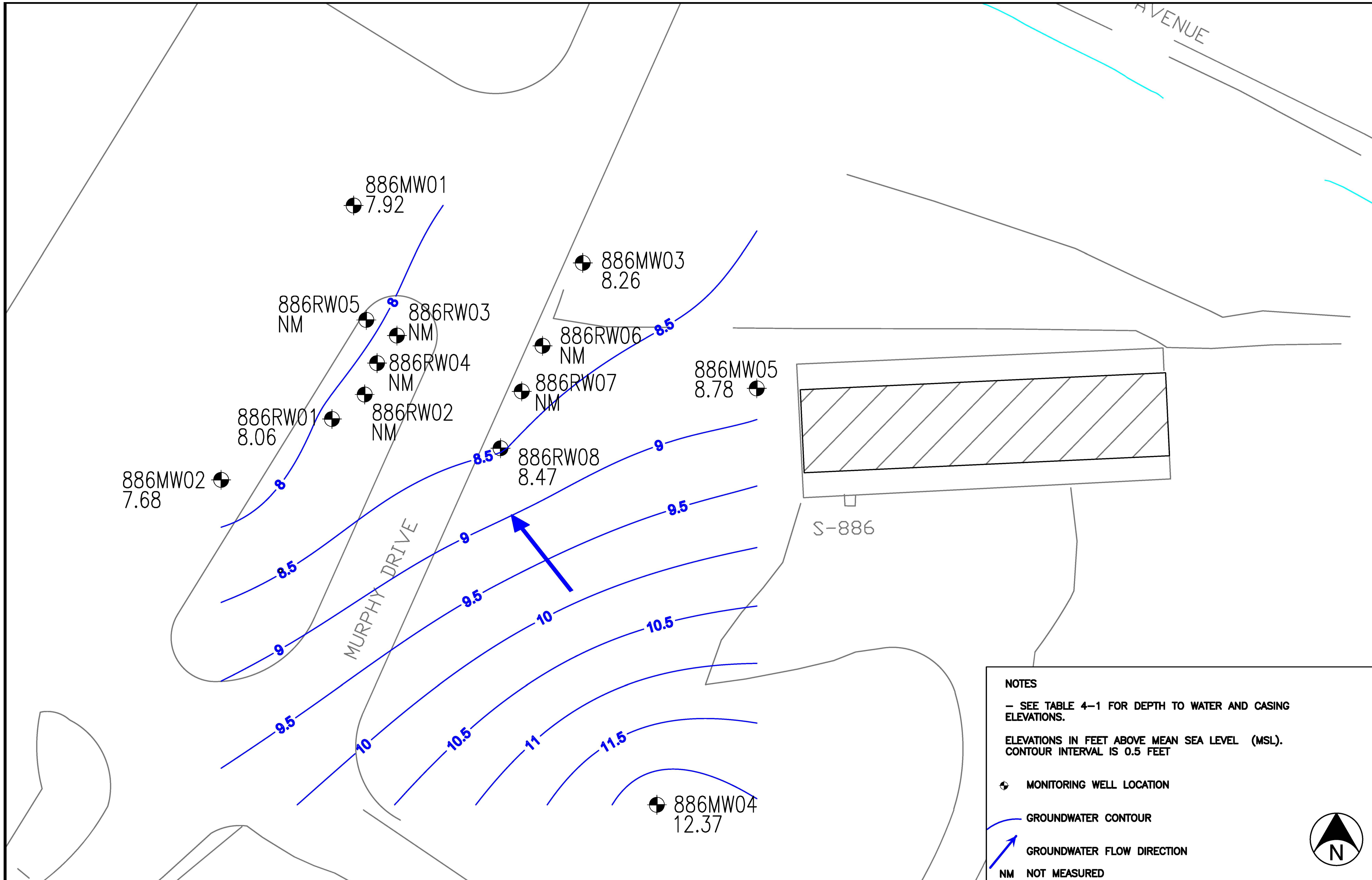
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (MAY 22, 2003)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE 1″=40′

21 JAN 10

FIGURE NO. 4-1

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-2 (July 22, 2003)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Recovery wells 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, and 886RW07 are omitted from the contour map, as these recovery wells were not monitored during this quarter.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

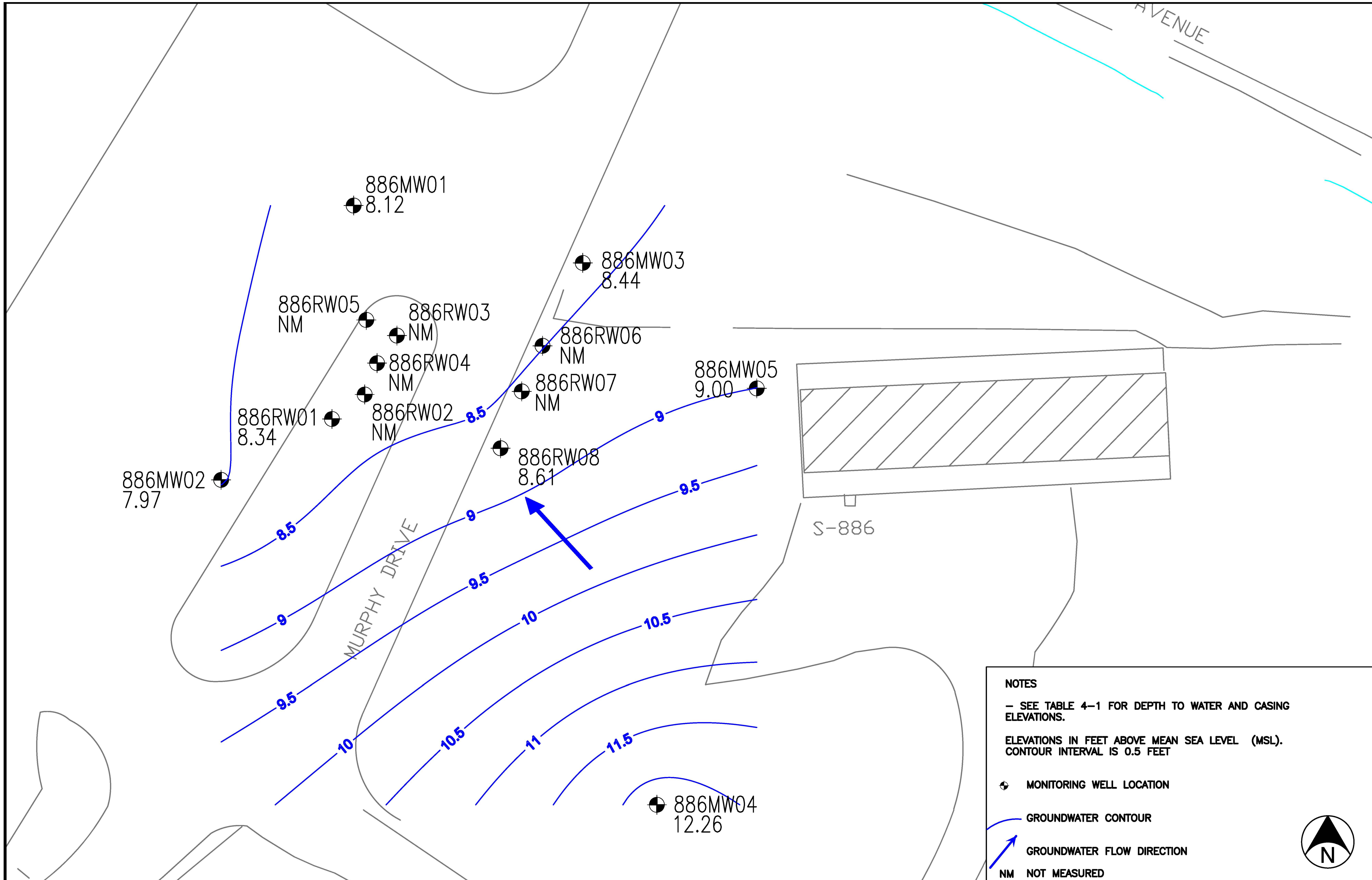
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (JULY 22, 2003)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE 1″=40′

21 JAN 10

FIGURE NO. 4-2

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-3 (October 14, 2003)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Recovery wells 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, and 886RW07 are omitted from the contour map, as these recovery wells were not monitored during this quarter.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

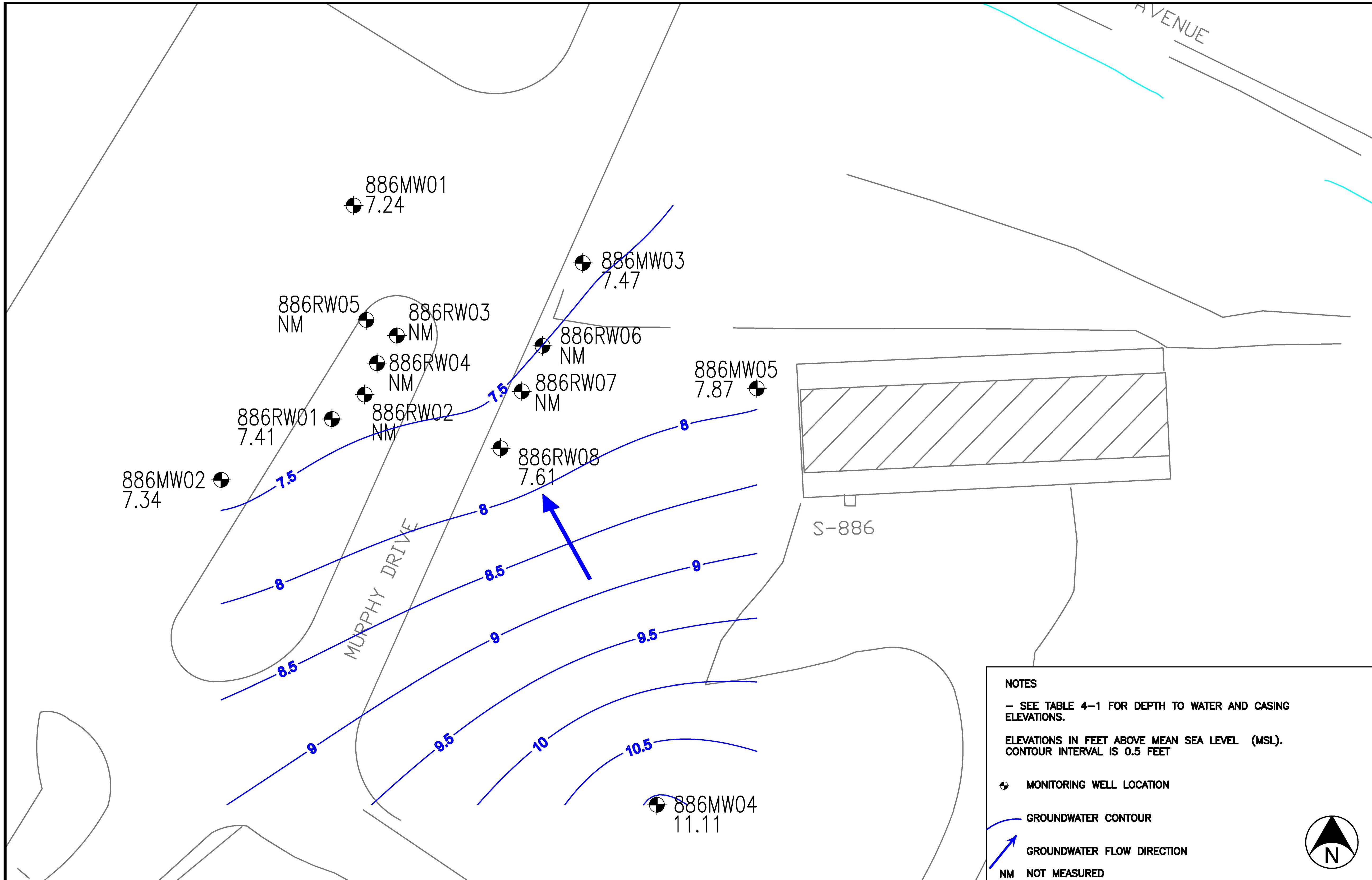
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (OCT 14, 2003)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE 1″=40′

21 JAN 10

FIGURE NO. 4-3

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-4 (contour map not constructed)
(February 2 & 3, 2004)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurred on two separate days, this contour map is omitted.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No___. If yes, discuss the reasons for the change. N/A

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No___. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

N/A

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

N/A

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-5 (May 25, 2004)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Recovery wells 886RW01, 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, 886RW07 and 886RW08 are omitted from the contour map, as these recovery wells were not monitored during this quarter.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

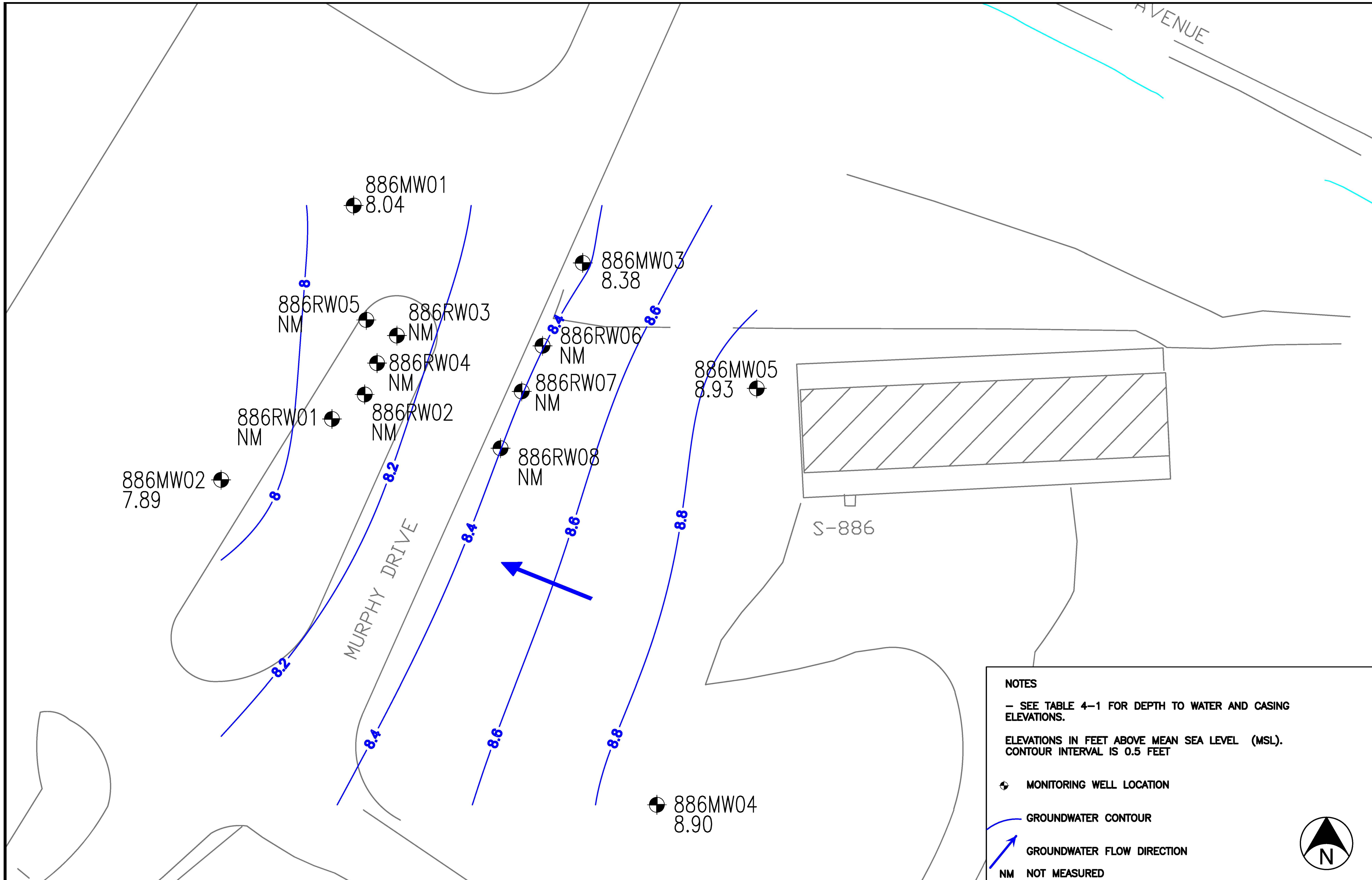
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (MAY 25, 2004)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE
1"=40'

21 JAN 10

FIGURE NO.
4-5

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-6 (August 4, 2004)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the “Guide for the Submission of Remedial Action Workplans” (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Recovery wells 886RW01, 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, 886RW07 and 886RW08 are omitted from the contour map, as these recovery wells were not monitored during this quarter.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

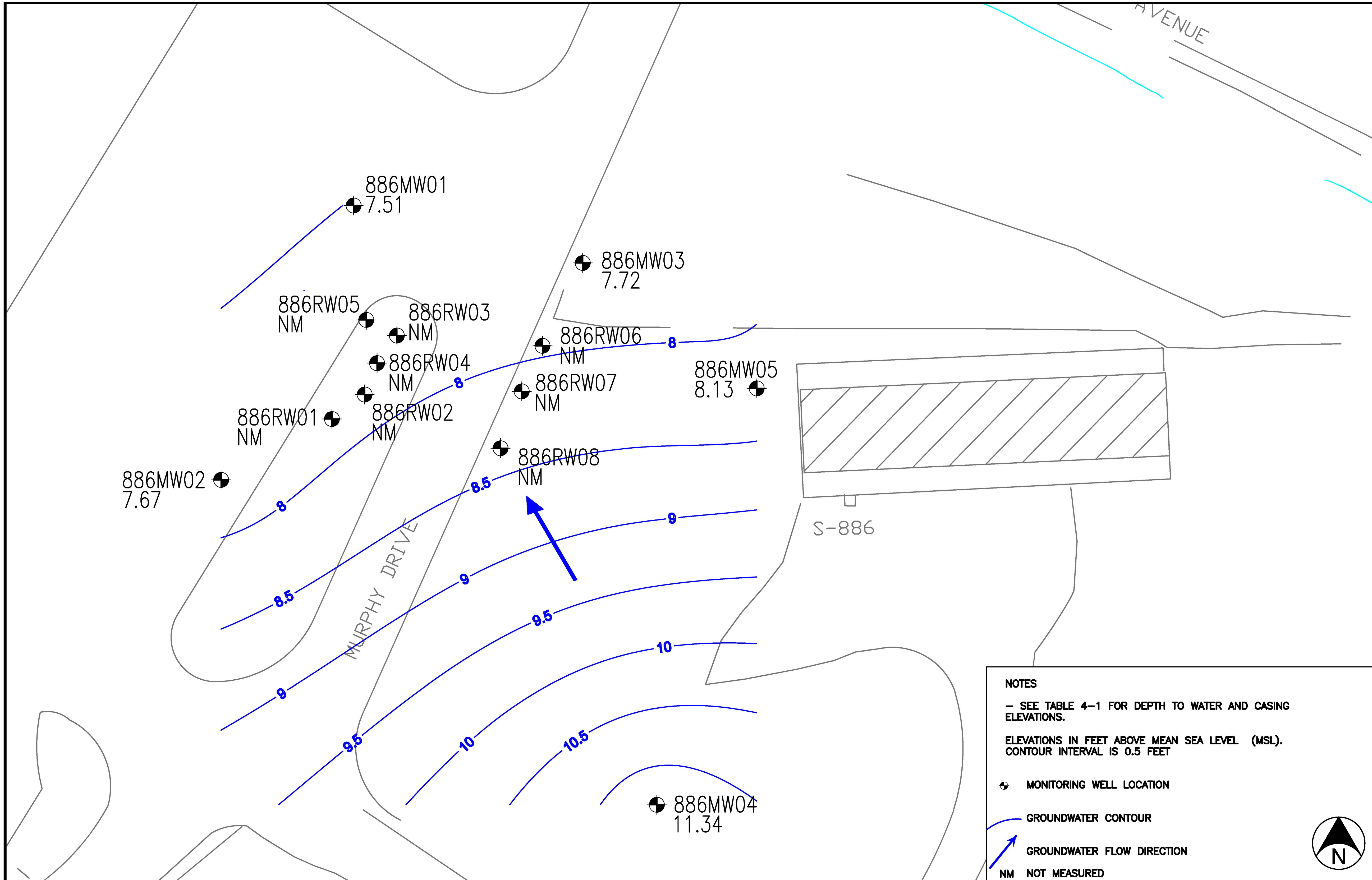
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (AUG 4, 2004)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE
1"=40'

21 JAN 10

FIGURE NO.
4-6

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-7 (October 20, 2004)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Recovery wells 886RW01, 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, 886RW07 and 886RW08 are omitted from the contour map, as these recovery wells were not monitored during this quarter.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

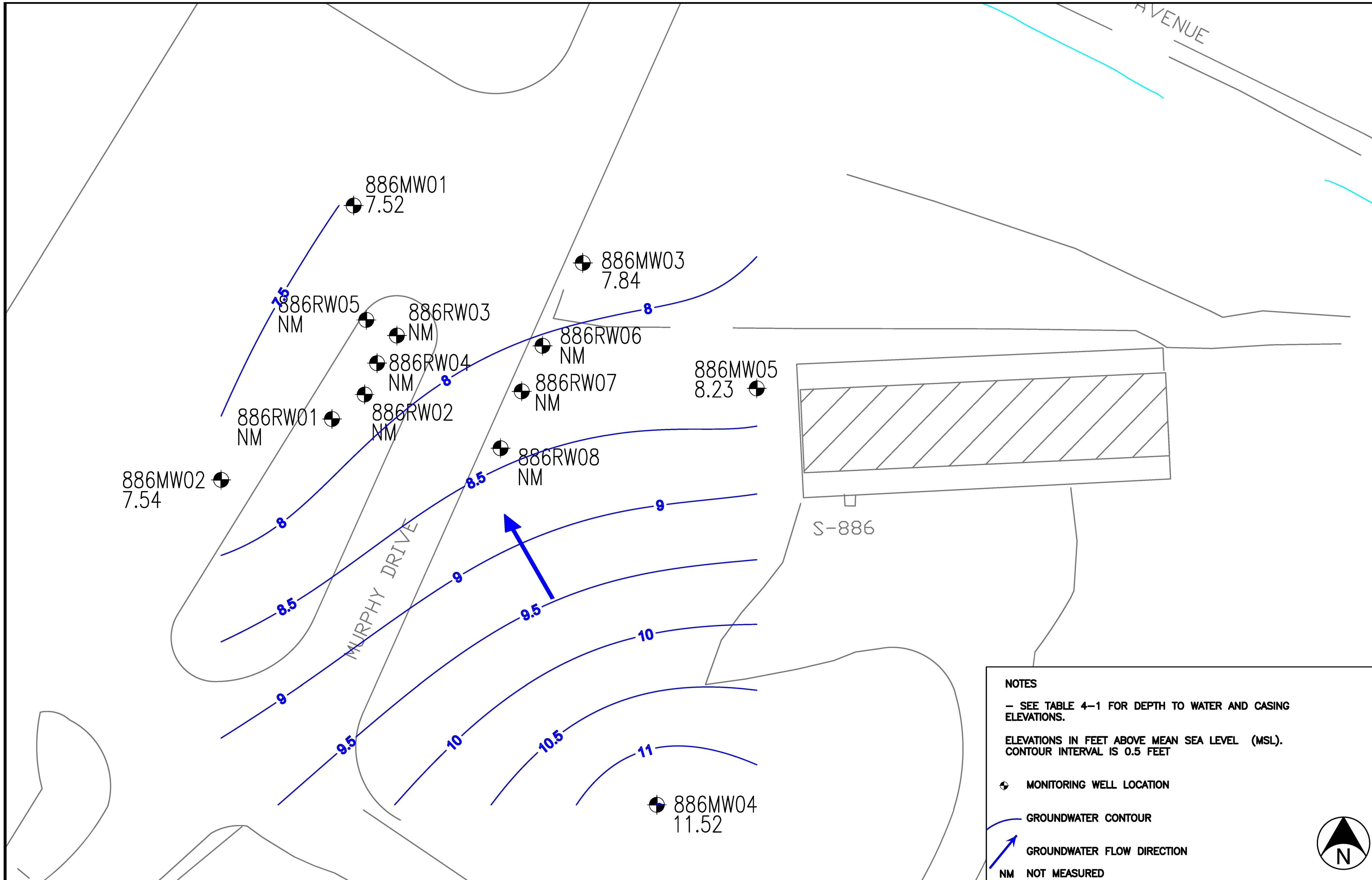
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (OCT 20, 2004)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE 1"=40'

21 JAN 10

FIGURE NO. 4-7

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-8 (contour map not constructed)
(January 6 & 7, 2005)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X__. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X__. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurred on two separate days, this contour map is omitted.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-9 (April 6, 2005)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Recovery wells 886RW01, 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, 886RW07 and 886RW08 are omitted from the contour map, as these recovery wells were not monitored during this quarter.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

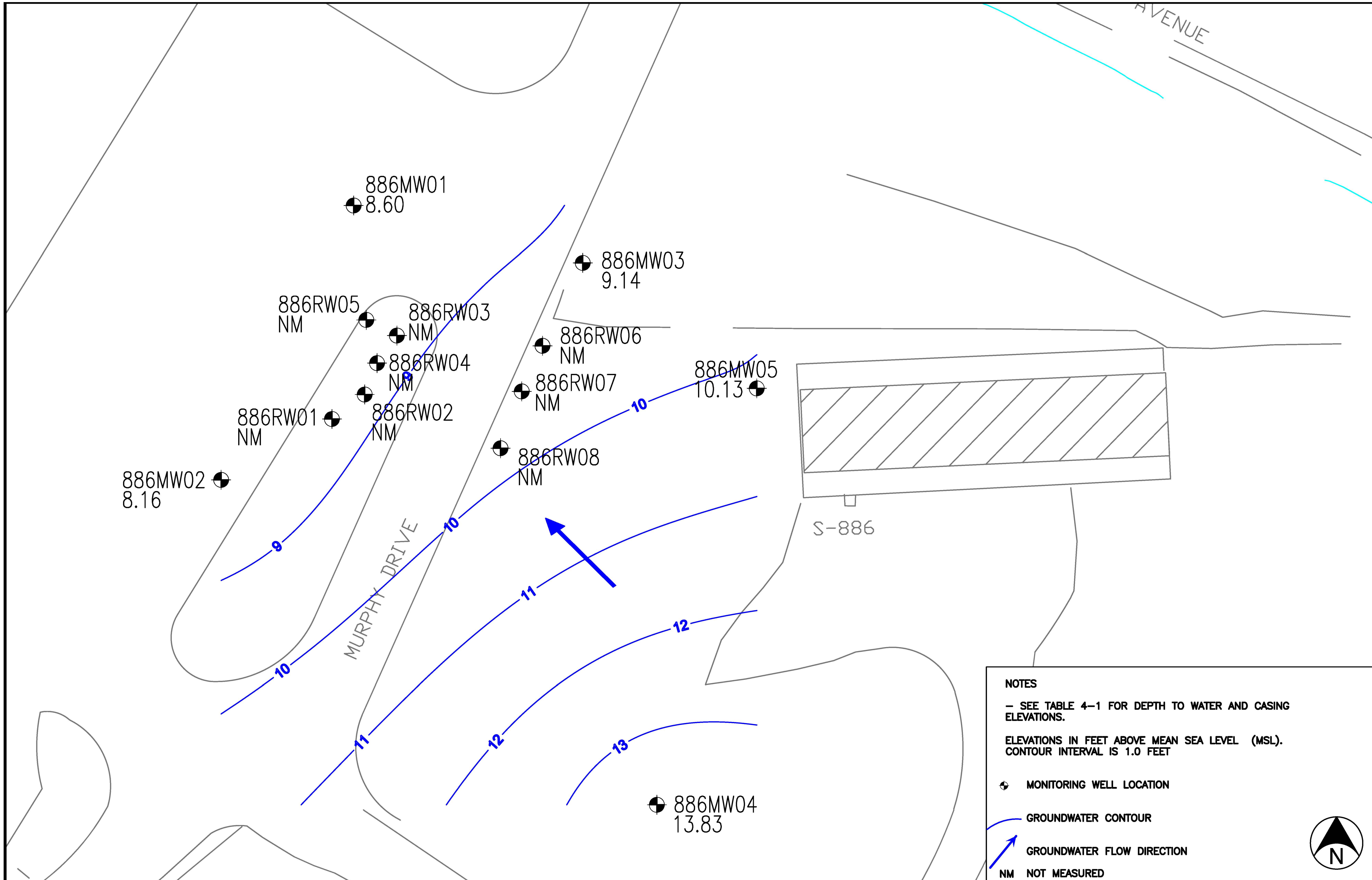
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6.   Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7.   Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8.   Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (APR 6, 2005)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE 1″=40′

21 JAN 10

FIGURE NO. 4-9

NOTE: THIS IS A COURTESY COPY OF THIS RULE. ALL OF THE DEPARTMENT'S RULES ALL COMPILED IN TITLE 7 OF THE NJ ADMINISTRATIVE CODE.

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-10 (July 12, 2005)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Recovery wells 886RW01, 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, 886RW07 and 886RW08 are omitted from the contour map, as these recovery wells were not monitored during this quarter.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

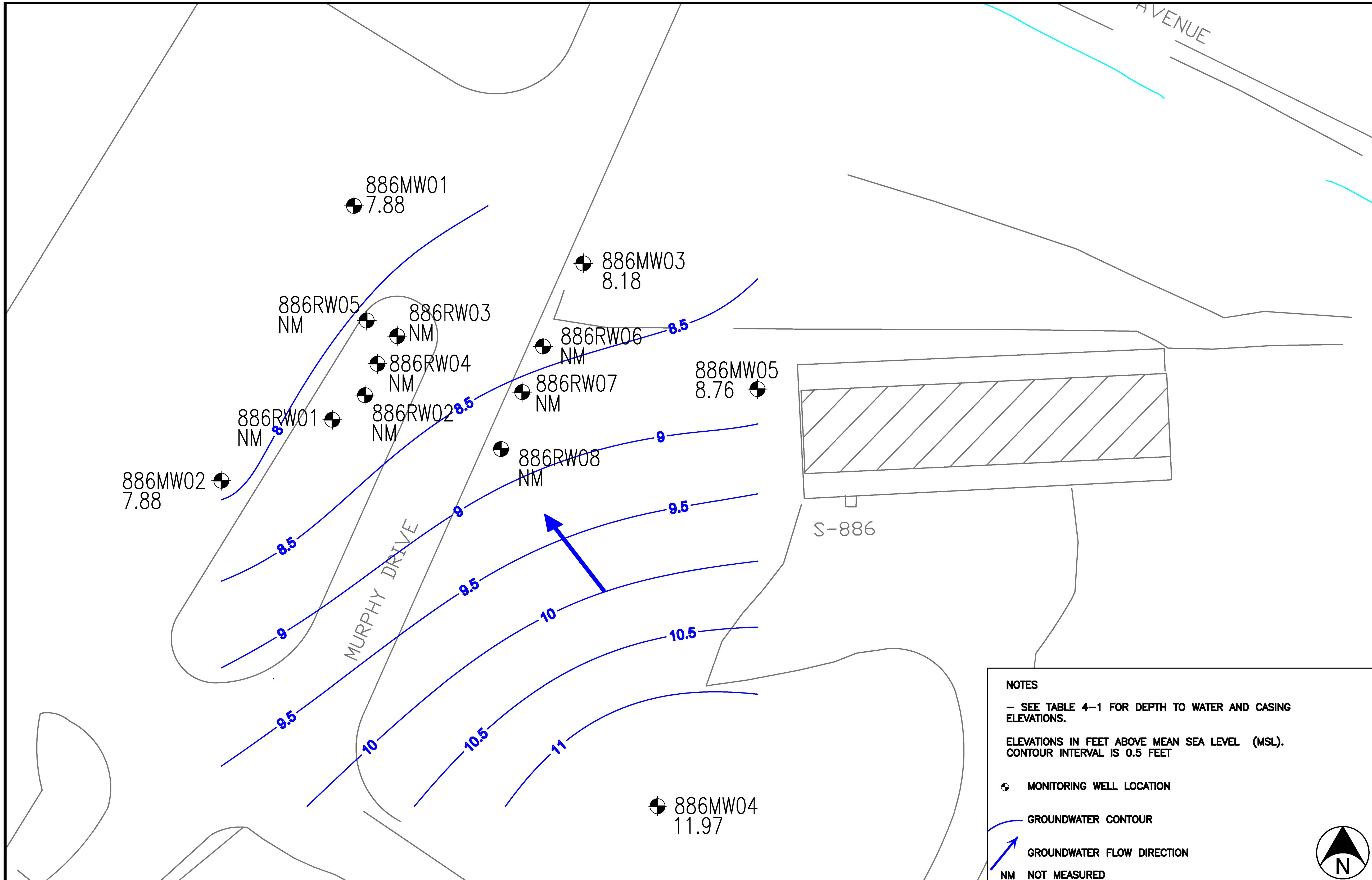
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (JULY 12, 2005)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE 1″=40′

21 JAN 10

FIGURE NO. 4-10

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-11 (October 19, 2005)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

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3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Recovery wells 886RW01, 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, 886RW07 and 886RW08 are omitted from the contour map, as these recovery wells were not monitored during this quarter.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

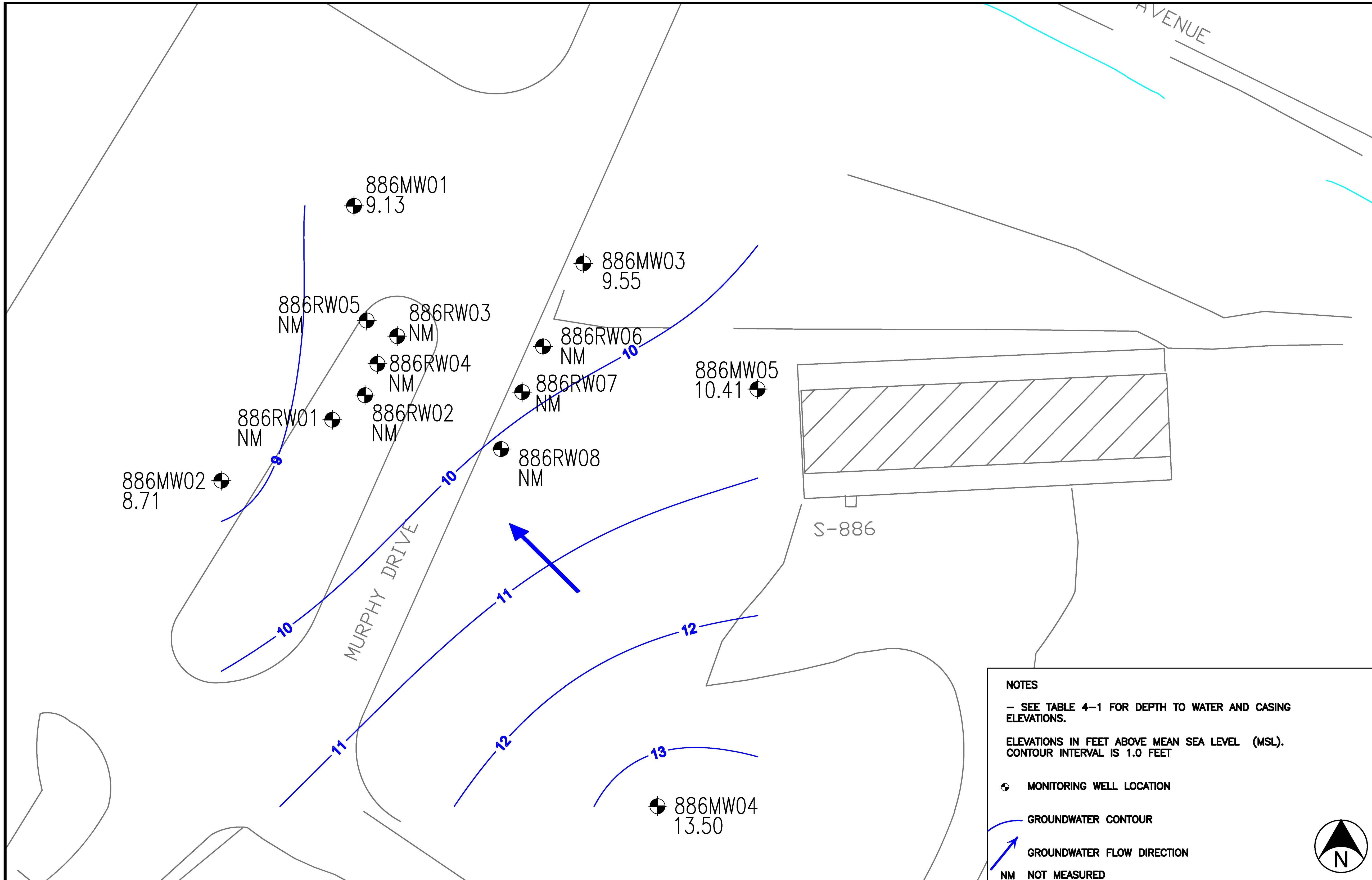
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (OCT 19, 2005)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE
1″=40′

21 JAN 10

FIGURE NO.
4-11

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-12 (contour map not constructed)
(January 24 & 25, 2006)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurred on two separate days, this contour map is omitted.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

Recovery well 886RW04 had 0.03 foot of LNAPL
Depth to ground water was corrected for LNAPL using formula
DTW(corrected)=DTW(measured) - [DTW(measured)-DTP(measured)]x0.8

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No___. If yes, discuss the reasons for the change. N/A

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No___. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

N/A

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

N/A

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-13 (April 11, 2006)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

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4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

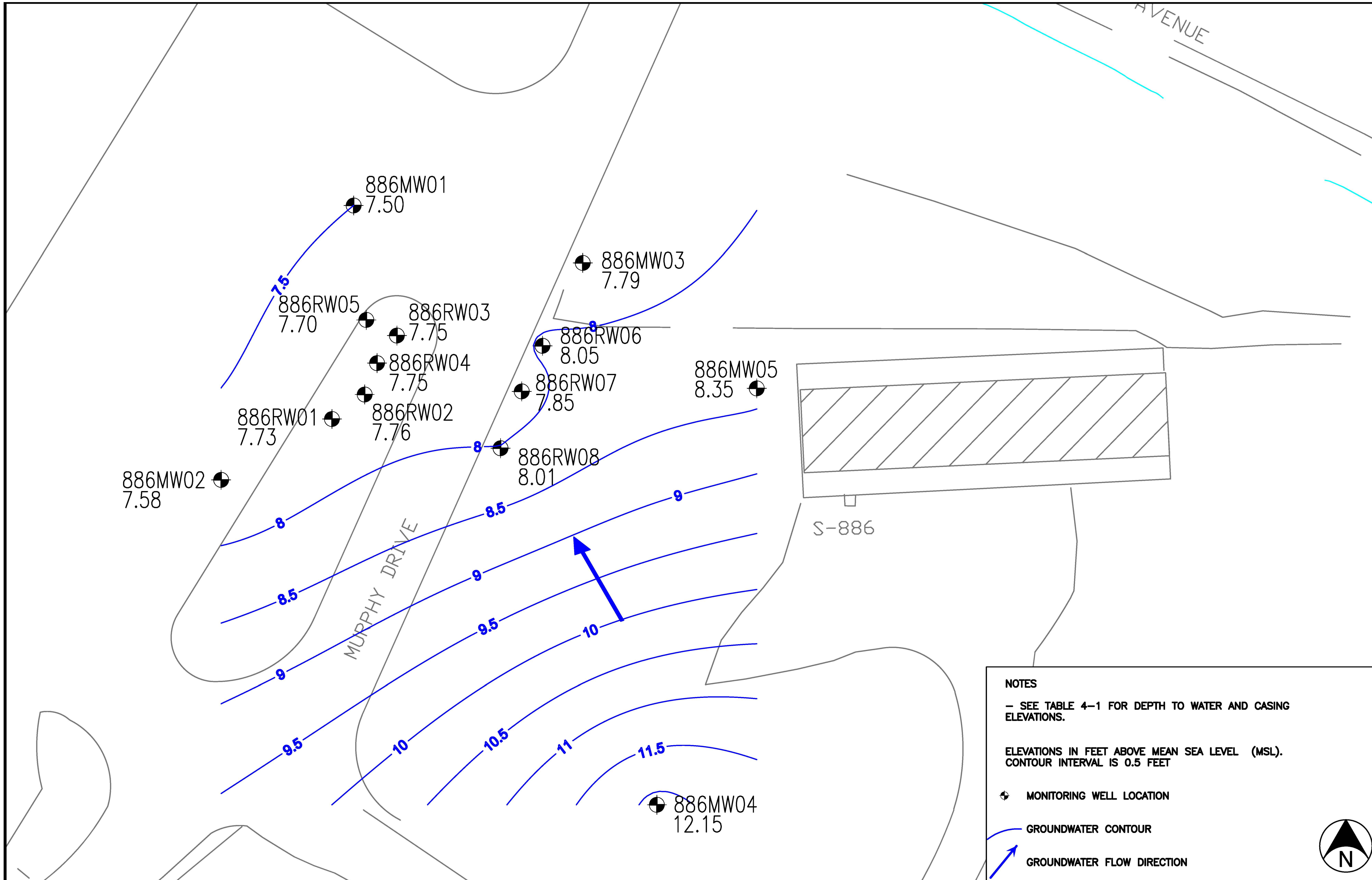
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUNDWATER CONTOUR MAP (APR 11, 2006)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE 1"=40'

21 JAN 10

FIGURE NO. 4-13

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-14 (July 11, 2006)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

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3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Recovery wells 886RW01, 886RW02, 886RW03, 886RW04, 886RW05, 886RW06, 886RW07, and 886RW08 are omitted from the contour map, as these recovery wells were not monitored during this quarter.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

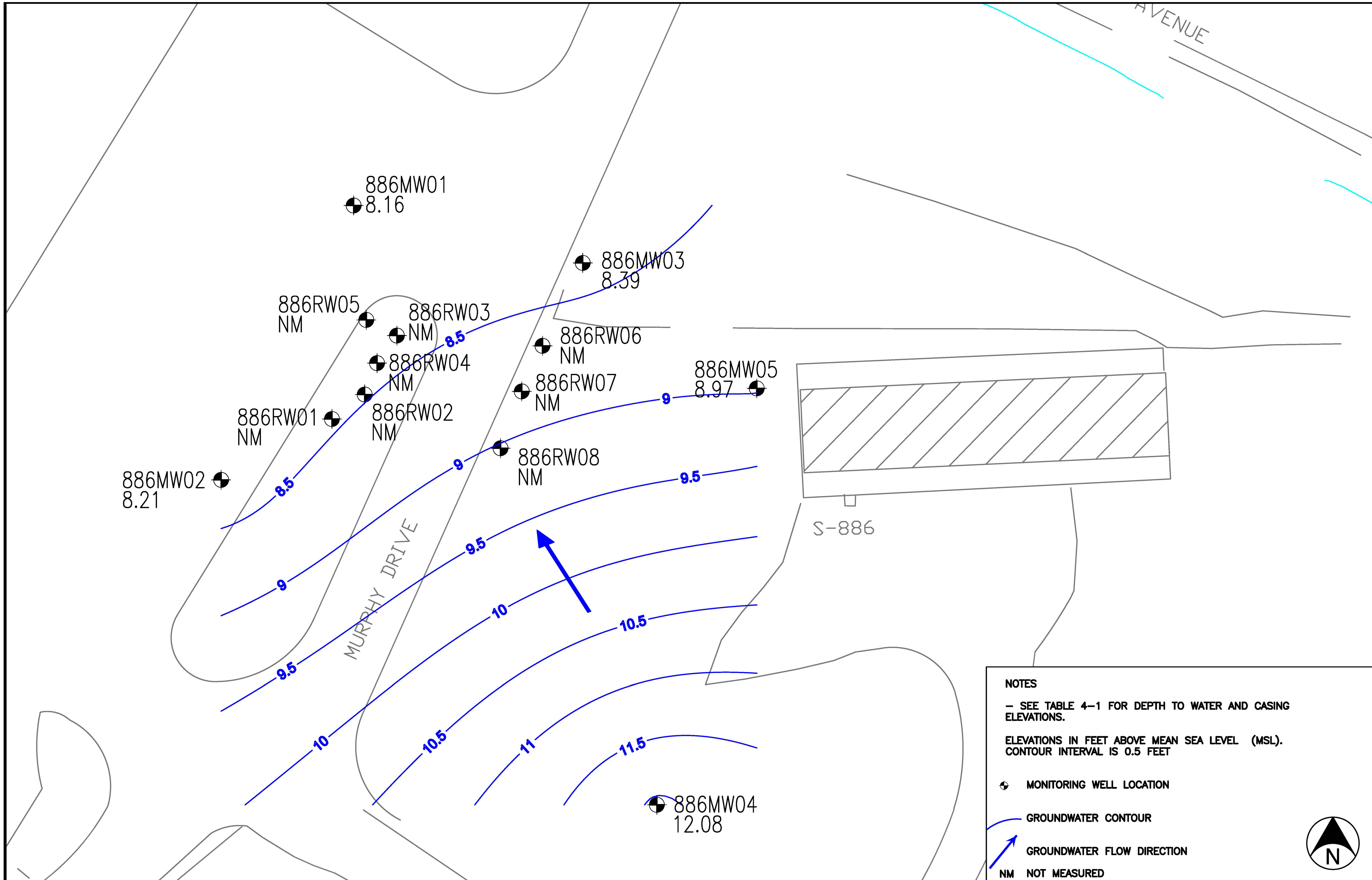
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (JULY 11, 2006)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE
1″=40′

21 JAN 10

FIGURE NO.
4-14

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-15 (contour map not constructed)
(November 14 & 15, 2006)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurred on two separate days, this contour map is omitted.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No___. If yes, discuss the reasons for the change. N/A

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No___. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

N/A

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

N/A

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APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-16 (contour map not constructed)
(January 25 & 26, 2007)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurred on two separate days, this contour map is omitted.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No___. If yes, discuss the reasons for the change. N/A

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No___. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

N/A

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

N/A

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-17 (contour map not constructed)
(April 18 & 19, 2007)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurred on two separate days, this contour map is omitted.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No___. If yes, discuss the reasons for the change. N/A

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No___. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

N/A

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

N/A

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-18 (August 2, 2007)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

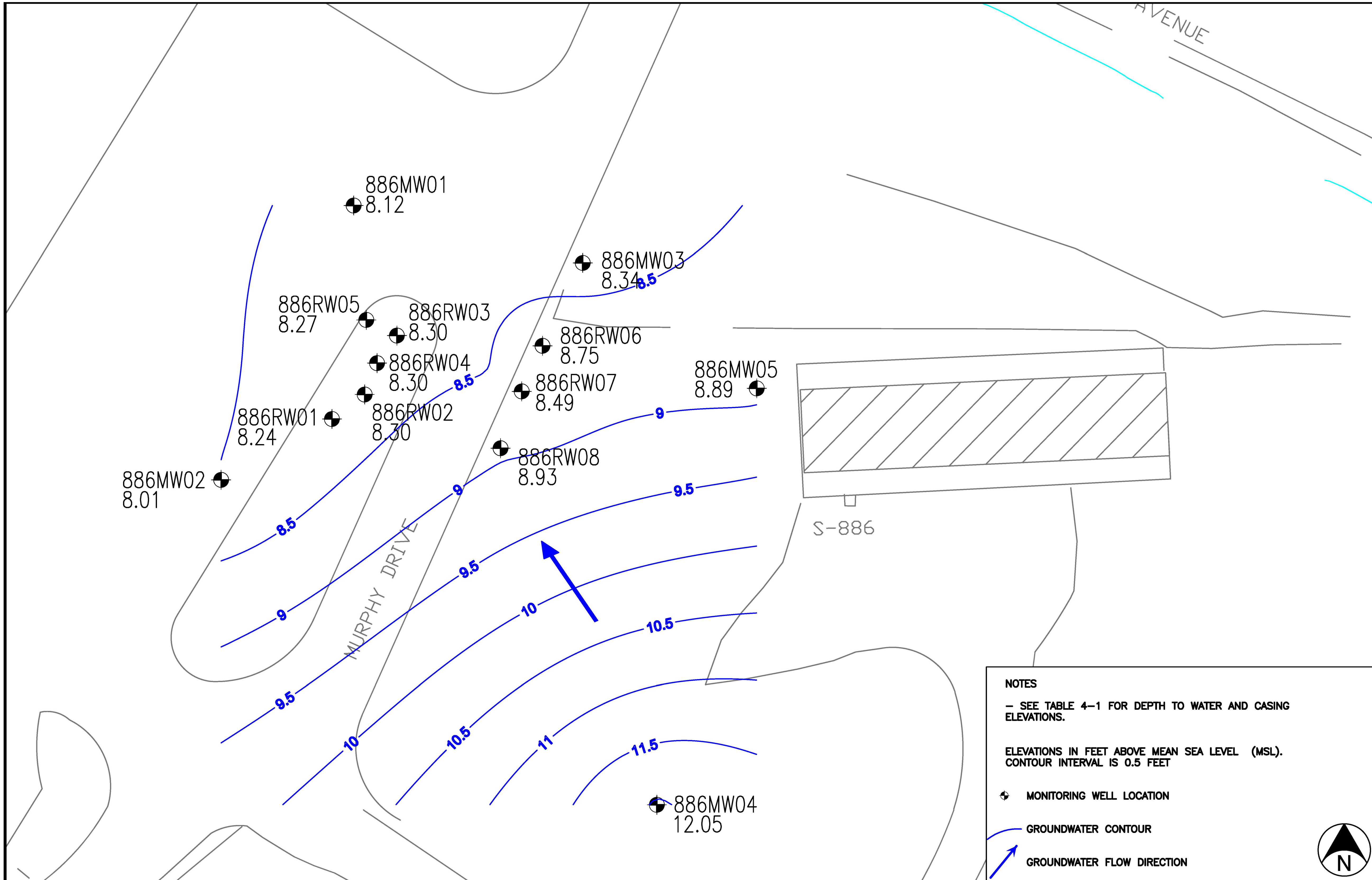
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (AUG 2, 2007)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE
1″=40′

21 JAN 10

FIGURE NO.
4-18

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-19 (contour map not constructed)
(October 11 & 12, 2007)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X__. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurred on two separate days, this contour map is omitted.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No___. If yes, discuss the reasons for the change. N/A

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No___. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

N/A

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

N/A

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-20 (contour map not constructed)
(March 27 & 28, 2008)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X__. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X__. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X__ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurred on two separate days, this contour map is omitted.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X__. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No___. If yes, discuss the reasons for the change. N/A

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No___. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

N/A

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

N/A

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-21 (June 25, 2008)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

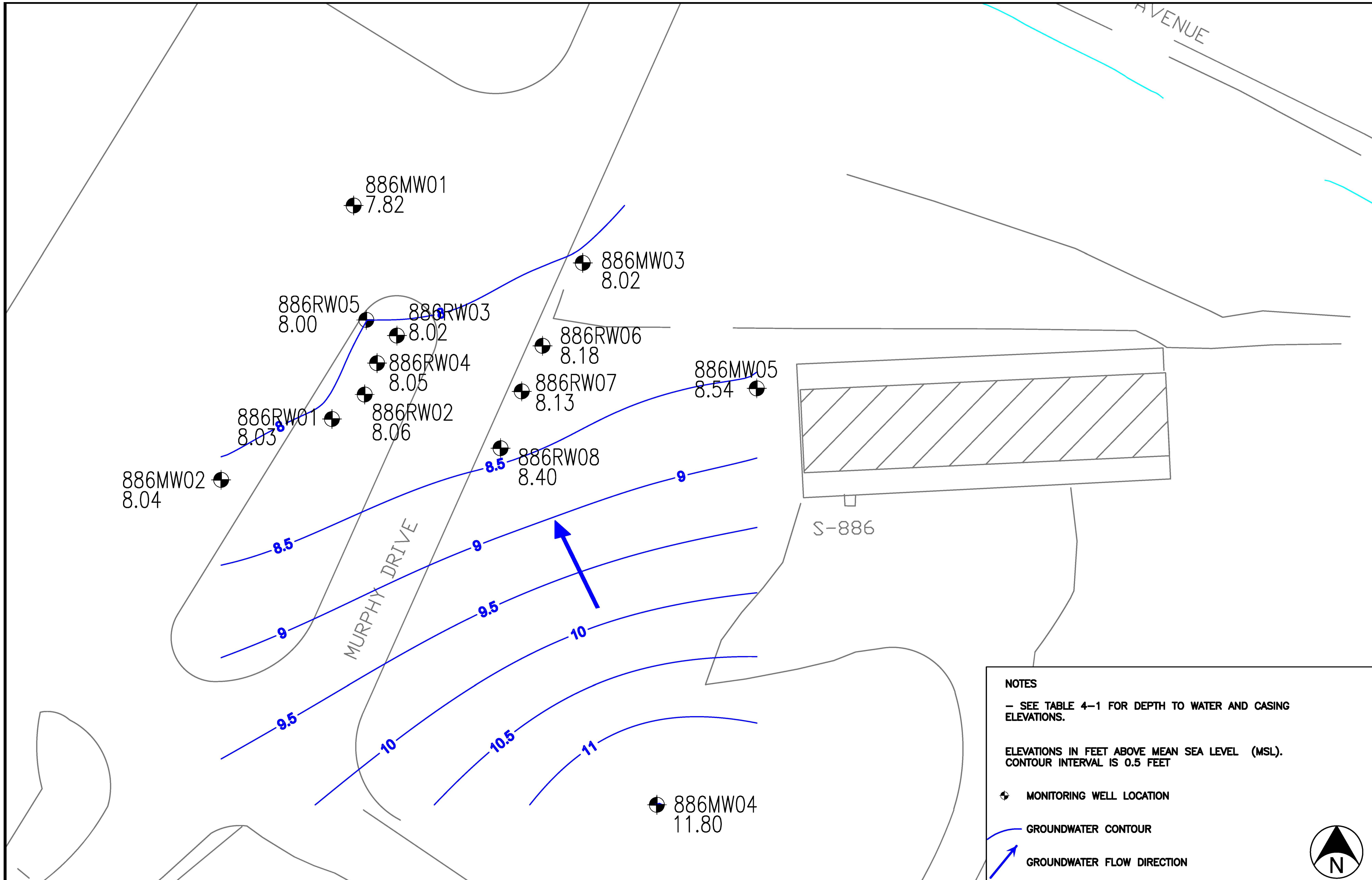
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (JUNE 25, 2008)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE 1″=40′

21 JAN 10

FIGURE NO. 4-21

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-22 (September 16, 2008)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X__. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X__. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X__. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X__. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

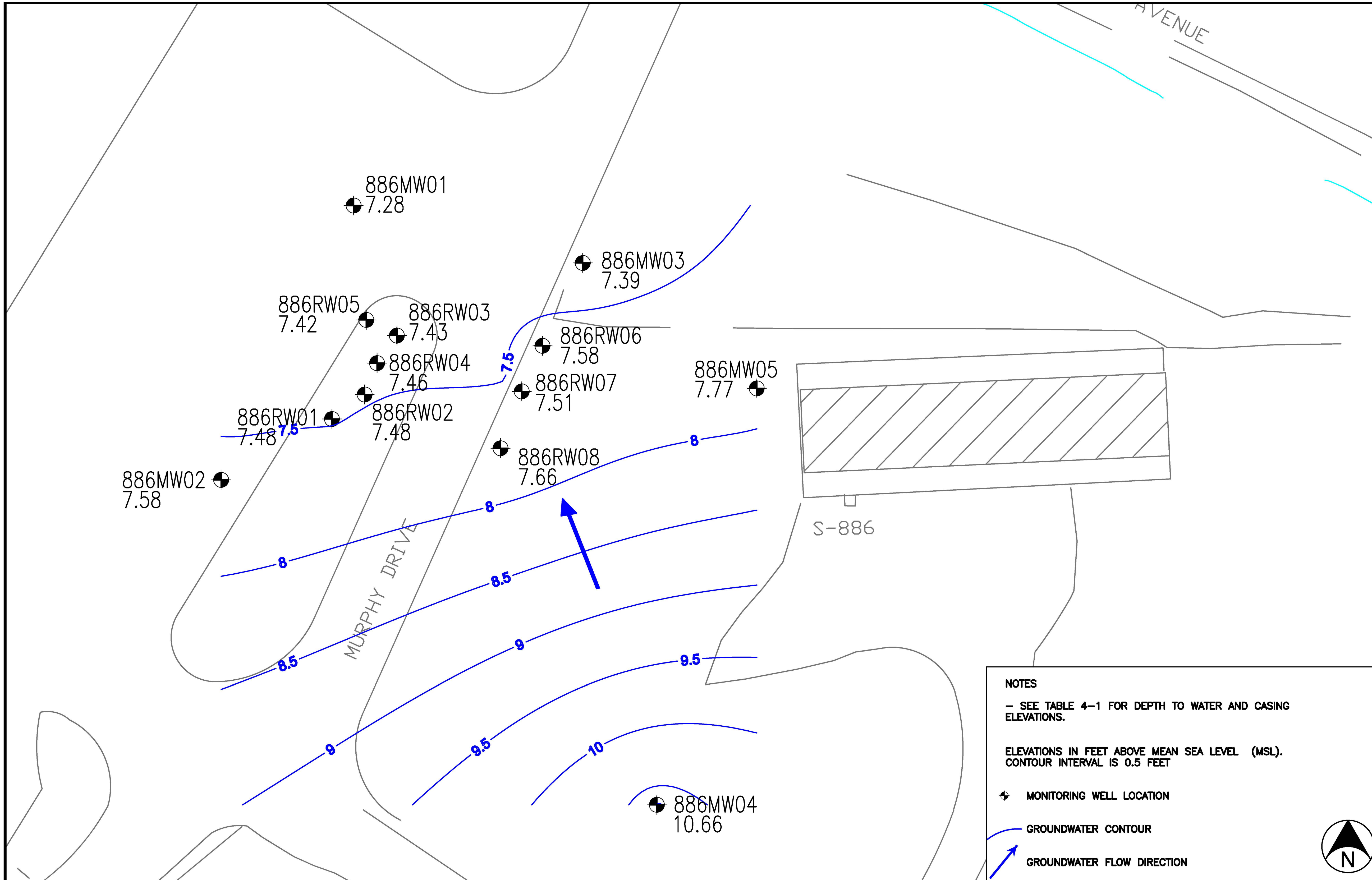
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X__. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (SEPT 16, 2008)

SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE
1″=40′

21 JAN 10

FIGURE NO.
4-22

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Site 886 Figure 4-23 (November 12, 2008)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

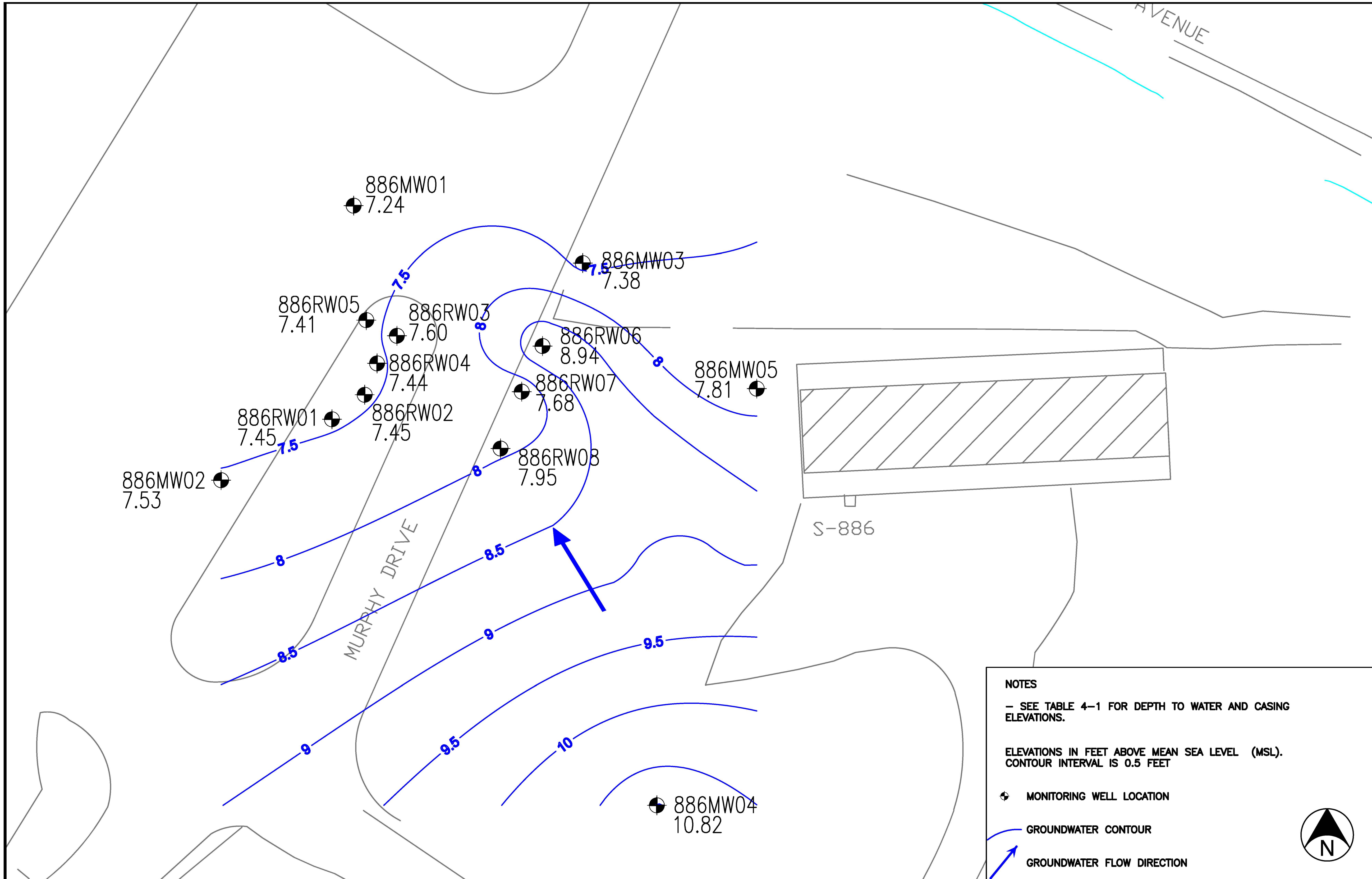
5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (NOV 12, 2008)

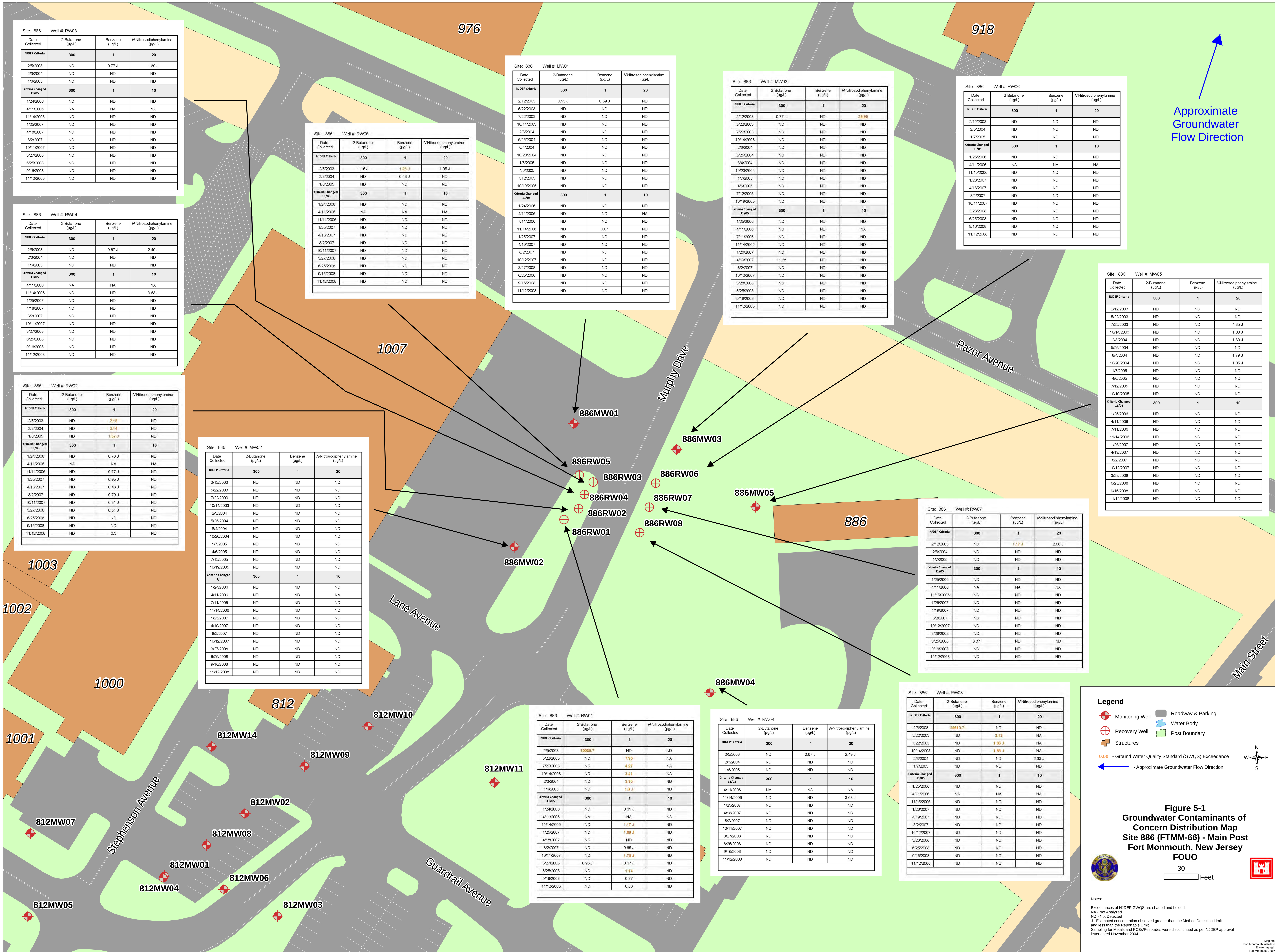
SITE 886
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

SCALE
1″=40′

21 JAN 10

FIGURE NO.
4-23



Site: 886 Well #: RW03

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/5/2003	ND	0.77 J	1.89 J
2/3/2004	ND	ND	ND
1/6/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/24/2006	ND	ND	ND
4/11/2006	NA	NA	NA
11/14/2006	ND	ND	ND
1/25/2007	ND	ND	ND
4/18/2007	ND	ND	ND
8/2/2007	ND	ND	ND
10/11/2007	ND	ND	ND
3/27/2008	ND	ND	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Site: 886 Well #: RW04

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/5/2003	ND	0.67 J	2.49 J
2/3/2004	ND	ND	ND
1/6/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
4/11/2006	NA	NA	NA
11/14/2006	ND	ND	3.68 J
1/25/2007	ND	ND	ND
4/18/2007	ND	ND	ND
8/2/2007	ND	ND	ND
10/11/2007	ND	ND	ND
3/27/2008	ND	ND	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Site: 886 Well #: RW02

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/5/2003	ND	**2.16**	ND
2/3/2004	ND	**2.14**	ND
1/6/2005	ND	**1.57 J**	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/24/2006	ND	0.78 J	ND
4/11/2006	NA	NA	NA
11/14/2006	ND	0.77 J	ND
1/25/2007	ND	0.95 J	ND
4/18/2007	ND	0.43 J	ND
8/2/2007	ND	0.79 J	ND
10/11/2007	ND	0.31 J	ND
3/27/2008	ND	0.84 J	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	0.3	ND

Site: 886 Well #: RW05

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/5/2003	1.16 J	**1.23 J**	1.05 J
2/3/2004	ND	0.48 J	ND
1/6/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/24/2006	ND	ND	ND
4/11/2006	NA	NA	NA
11/14/2006	ND	ND	ND
1/25/2007	ND	ND	ND
4/18/2007	ND	ND	ND
8/2/2007	ND	ND	ND
10/11/2007	ND	ND	ND
3/27/2008	ND	ND	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Site: 886 Well #: MW01

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/12/2003	0.93 J	0.59 J	ND
5/22/2003	ND	ND	ND
7/22/2003	ND	ND	ND
10/14/2003	ND	ND	ND
2/3/2004	ND	ND	ND
5/25/2004	ND	ND	ND
8/4/2004	ND	ND	ND
10/20/2004	ND	ND	ND
1/6/2005	ND	ND	ND
4/6/2005	ND	ND	ND
7/12/2005	ND	ND	ND
10/19/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/24/2006	ND	ND	ND
4/11/2006	ND	ND	NA
7/11/2006	ND	ND	ND
11/14/2006	ND	0.07	ND
1/25/2007	ND	ND	ND
4/19/2007	ND	ND	ND
8/2/2007	ND	ND	ND
10/12/2007	ND	ND	ND
3/27/2008	ND	ND	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Site: 886 Well #: MW03

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/12/2003	0.77 J	ND	**38.99**
5/22/2003	ND	ND	ND
7/22/2003	ND	ND	ND
10/14/2003	ND	ND	ND
2/3/2004	ND	ND	ND
5/25/2004	ND	ND	ND
8/4/2004	ND	ND	ND
10/20/2004	ND	ND	ND
1/7/2005	ND	ND	ND
4/6/2005	ND	ND	ND
7/12/2005	ND	ND	ND
10/19/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/25/2006	ND	ND	ND
4/11/2006	ND	ND	NA
7/11/2006	ND	ND	ND
11/14/2006	ND	ND	ND
1/26/2007	ND	ND	ND
4/19/2007	11.68	ND	ND
8/2/2007	ND	ND	ND
10/12/2007	ND	ND	ND
3/28/2008	ND	ND	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Site: 886 Well #: RW06

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/12/2003	ND	ND	ND
2/3/2004	ND	ND	ND
1/7/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/25/2006	ND	ND	ND
4/11/2006	NA	NA	NA
11/15/2006	ND	ND	ND
1/26/2007	ND	ND	ND
4/18/2007	ND	ND	ND
8/2/2007	ND	ND	ND
10/11/2007	ND	ND	ND
3/28/2008	ND	ND	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Site: 886 Well #: MW05

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/12/2003	ND	ND	ND
5/22/2003	ND	ND	ND
7/22/2003	ND	ND	4.85 J
10/14/2003	ND	ND	1.08 J
2/3/2004	ND	ND	1.39 J
5/25/2004	ND	ND	ND
8/4/2004	ND	ND	1.79 J
10/20/2004	ND	ND	1.05 J
1/7/2005	ND	ND	ND
4/6/2005	ND	ND	ND
7/12/2005	ND	ND	ND
10/19/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/25/2006	ND	ND	ND
4/11/2006	ND	ND	ND
7/11/2006	ND	ND	ND
11/14/2006	ND	ND	ND
1/26/2007	ND	ND	ND
4/19/2007	ND	ND	ND
8/2/2007	ND	ND	ND
10/12/2007	ND	ND	ND
3/28/2008	ND	ND	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Site: 886 Well #: MW02

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/12/2003	ND	ND	ND
5/22/2003	ND	ND	ND
7/22/2003	ND	ND	ND
10/14/2003	ND	ND	ND
2/3/2004	ND	ND	ND
5/25/2004	ND	ND	ND
8/4/2004	ND	ND	ND
10/20/2004	ND	ND	ND
1/7/2005	ND	ND	ND
4/6/2005	ND	ND	ND
7/12/2005	ND	ND	ND
10/19/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/24/2006	ND	ND	ND
4/11/2006	ND	ND	NA
7/11/2006	ND	ND	ND
11/14/2006	ND	ND	ND
1/25/2007	ND	ND	ND
4/19/2007	ND	ND	ND
8/2/2007	ND	ND	ND
10/12/2007	ND	ND	ND
3/27/2008	ND	ND	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Site: 886 Well #: RW07

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/12/2003	ND	**1.17 J**	2.66 J
2/3/2004	ND	ND	ND
1/7/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/25/2006	ND	ND	ND
4/11/2006	NA	NA	NA
11/15/2006	ND	ND	ND
1/26/2007	ND	ND	ND
4/19/2007	ND	ND	ND
8/2/2007	ND	ND	ND
10/12/2007	ND	ND	ND
3/28/2008	ND	ND	ND
6/25/2008	3.37	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Site: 886 Well #: RW01

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/5/2003	**30039.7**	ND	ND
5/22/2003	ND	**7.95**	NA
7/22/2003	ND	**4.27**	NA
10/14/2003	ND	**3.41**	NA
2/3/2004	ND	**3.35**	ND
1/6/2005	ND	**1.3 J**	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/24/2006	ND	0.61 J	ND
4/11/2006	NA	NA	NA
11/14/2006	ND	**1.17 J**	ND
1/25/2007	ND	**1.09 J**	ND
4/18/2007	ND	ND	ND
8/2/2007	ND	0.65 J	ND
10/11/2007	ND	**1.75 J**	ND
3/27/2008	0.93 J	0.67 J	ND
6/25/2008	ND	**1.14**	ND
9/16/2008	ND	0.87	ND
11/12/2008	ND	0.56	ND

Site: 886 Well #: RW04

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/5/2003	ND	0.67 J	2.49 J
2/3/2004	ND	ND	ND
1/6/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
4/11/2006	NA	NA	NA
11/14/2006	ND	ND	3.68 J
1/25/2007	ND	ND	ND
4/18/2007	ND	ND	ND
8/2/2007	ND	ND	ND
10/11/2007	ND	ND	ND
3/27/2008	ND	ND	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Site: 886 Well #: RW08

Date Collected	2-Butanone (µg/L)	Benzene (µg/L)	N-Nitrosodiphenylamine (µg/L)
NJDEP Criteria	**300**	**1**	**20**
2/5/2003	**29510.7**	ND	ND
5/22/2003	ND	**2.13**	NA
7/22/2003	ND	**1.86 J**	NA
10/14/2003	ND	**1.83 J**	NA
2/3/2004	ND	ND	2.33 J
1/7/2005	ND	ND	ND
Criteria Changed 11/05	**300**	**1**	**10**
1/25/2006	ND	ND	ND
4/11/2006	NA	NA	NA
11/15/2006	ND	ND	ND
1/26/2007	ND	ND	ND
4/19/2007	ND	ND	ND
8/2/2007	ND	ND	ND
10/12/2007	ND	ND	ND
3/28/2008	ND	ND	ND
6/25/2008	ND	ND	ND
9/16/2008	ND	ND	ND
11/12/2008	ND	ND	ND

Figure 5-1
Groundwater Contaminants of Concern Distribution Map
Site 886 (FTMM-66) - Main Post
Fort Monmouth, New Jersey
FOUO

Notes:

Exceedances of NJDEP GWQS are shaded and bolded.
NA - Not Analyzed
ND - Not Detected
J - Estimated concentration observed greater than the Method Detection Limit and less than the Reportable Limit.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

FIGURE 5-2
Benzene Concentrations vs Time at 886RW01
(1st Quarter 2003 through 4th Quarter 2008)
Site 886
Fort Monmouth, New Jersey

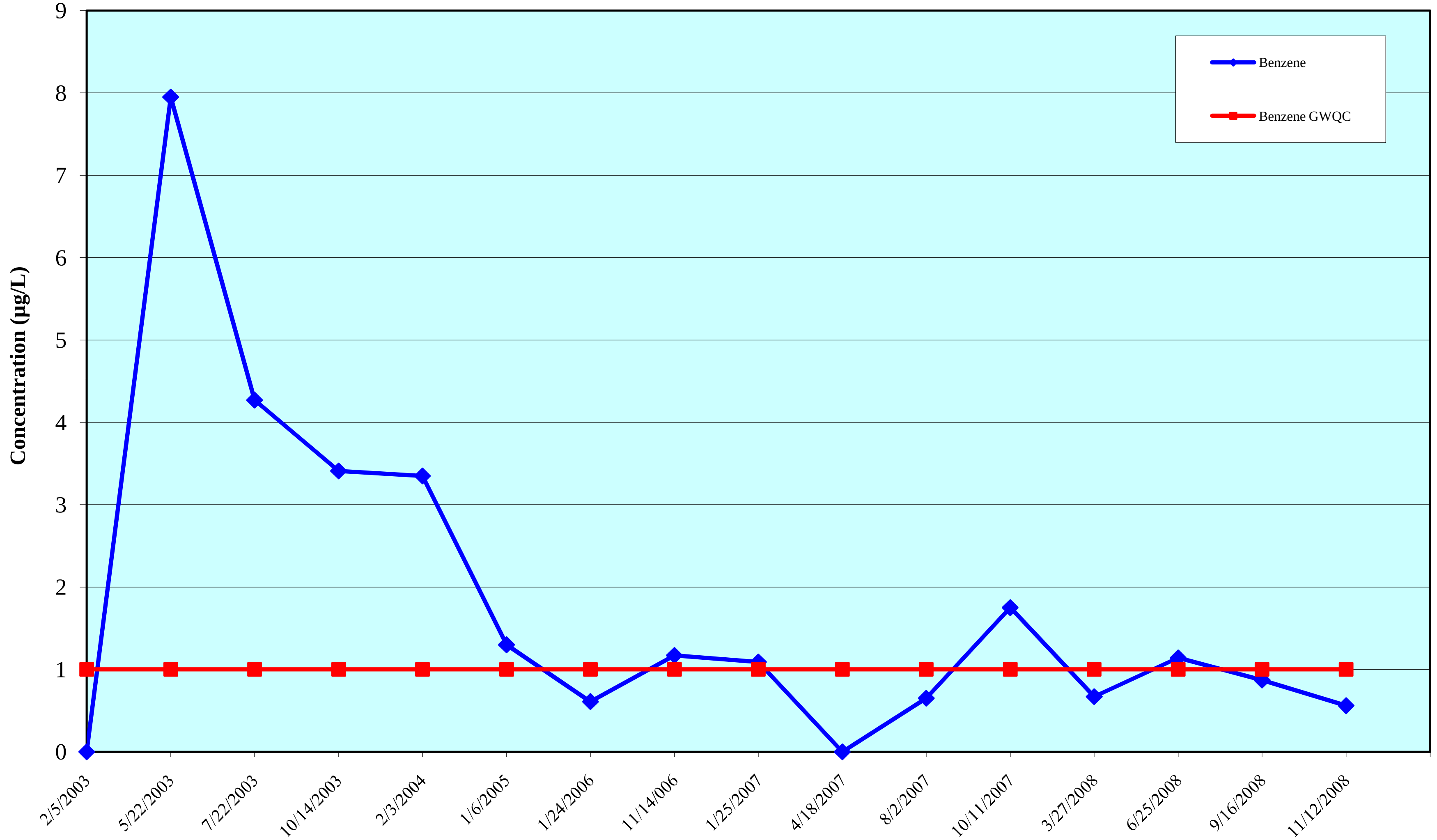
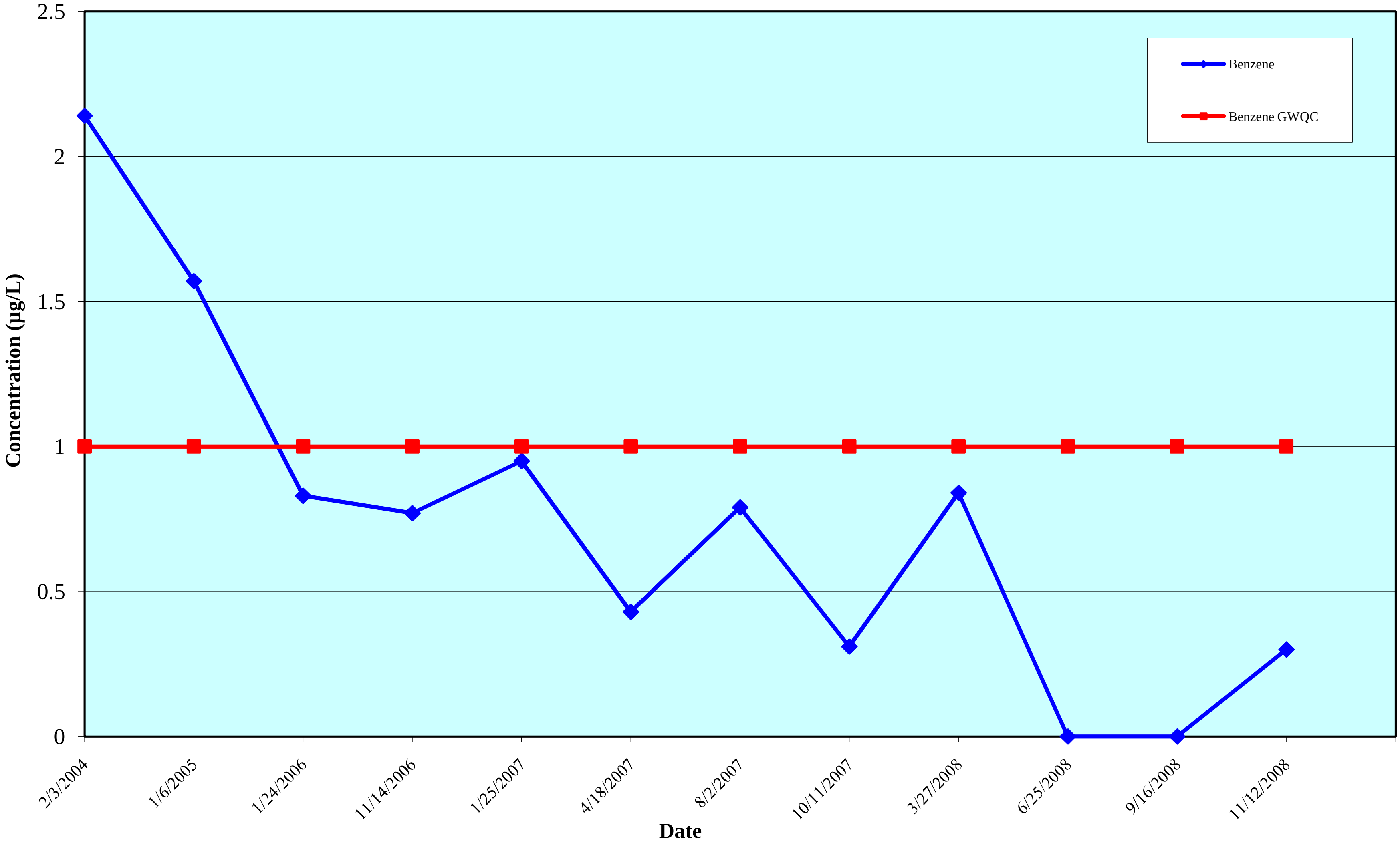


FIGURE 5-3
Benzene Concentrations vs Time at 886RW02
(1st Quarter 2004 through 4th Quarter 2008)
Site 886
Fort Monmouth, New Jersey



TABLES

Table 3-1
Product Recovery Measurements
Site 886
Fort Monmouth, New Jersey

Date	Product Thickness (Inches)	Volume Removed (Pints)
	886RW04	
4/6/05	0.03	2
4/12/05	Trace	0
4/22/05	Trace	0
4/29/05	Trace	0
5/5/05	Trace	0
5/18/05	Trace	0
6/27/05	Trace	0
9/1/05	0	0

Table 4-1
Ground Water Elevation Summary
Site 886
Fort Monmouth, New Jersey

		#2			#3			#4		
Well ID	TOC(1)	Date	Depth to Water(3)	Ground Water Elevation(4)	Date	Depth to Water(3)	Ground Water Elevation(4)	Date	Depth to Water(3)	Ground Water Elevation(4)
886MW01	14.04	05/22/03	6.12	7.92	07/22/03	5.92	8.12	10/14/03	6.80	7.24
886MW02	13.99	05/22/03	6.31	7.68	07/22/03	6.02	7.97	10/14/03	6.65	7.34
886MW03	14.79	05/22/03	6.53	8.26	07/22/03	6.35	8.44	10/14/03	7.32	7.47
886MW04	19.31	05/22/03	6.94	12.37	07/22/03	7.05	12.26	10/14/03	8.20	11.11
886MW05	19.38	05/22/03	10.60	8.78	07/22/03	10.38	9.00	10/14/03	11.51	7.87
886RW01	14.71	05/22/03	6.65	8.06	07/22/03	6.37	8.34	10/14/03	7.30	7.41
886RW02	15.01	NM	NM	NM	NM	NM	NM	NM	NM	NM
886RW03	15.03	NM	NM	NM	NM	NM	NM	NM	NM	NM
886RW04	14.89	NM	NM	NM	NM	NM	NM	NM	NM	NM
886RW05	14.80	NM	NM	NM	NM	NM	NM	NM	NM	NM
886RW06	15.25	NM	NM	NM	NM	NM	NM	NM	NM	NM
886RW07	15.41	NM	NM	NM	NM	NM	NM	NM	NM	NM
886RW08	14.91	05/22/03	6.44	8.47	07/22/03	6.30	8.61	10/14/03	7.30	7.61

Notes:
(1) Elevation of survey mark at top of casing (TOC).
(2) Depth to water (DTW) is collected on multiple days.
(3) Depth to water in feet from TOC.
(4) Ground water elevation in feet above mean sea level (msl).
NM = Not Measured.
* 886RW04 was not sampled in Round 13 due to LNAPL thickness of 0.03 foot.

Table 4-1
Ground Water Elevation Summary
Site 886
Fort Monmouth, New Jersey

		#5			#6			#7		
Well ID	TOC(1)	Date (2)	Depth to Water(3)	Ground Water Elevation(4)	Date	Depth to Water(3)	Ground Water Elevation(4)	Date	Depth to Water(3)	Ground Water Elevation(4)
886MW01	14.04	02/03/04	6.75	7.29	05/25/04	6.00	8.04	08/04/04	6.53	7.51
886MW02	13.99	02/03/04	6.76	7.23	05/25/04	6.10	7.89	08/04/04	6.32	7.67
886MW03	14.79	02/03/04	7.21	7.58	05/25/04	6.41	8.38	08/04/04	7.07	7.72
886MW04	19.31	02/03/04	7.46	11.85	05/25/04	10.41	8.90	08/04/04	7.97	11.34
886MW05	19.38	02/03/04	11.25	8.13	05/25/04	10.45	8.93	08/04/04	11.25	8.13
886RW01	14.71	02/02/04	7.28	7.43	NM	NM	NM	NM	NM	NM
886RW02	15.01	02/02/04	7.51	7.50	NM	NM	NM	NM	NM	NM
886RW03	15.03	02/02/04	7.51	7.52	NM	NM	NM	NM	NM	NM
886RW04	14.89	02/02/04	7.30	7.59	NM	NM	NM	NM	NM	NM
886RW05	14.80	02/02/04	7.43	7.37	NM	NM	NM	NM	NM	NM
886RW06	15.25	02/02/04	7.58	7.67	NM	NM	NM	NM	NM	NM
886RW07	15.41	02/02/04	7.79	7.62	NM	NM	NM	NM	NM	NM
886RW08	14.91	02/02/04	7.22	7.69	NM	NM	NM	NM	NM	NM

Notes:

(1) Elevation of survey mark at top of casing (TOC).

(2) Depth to water (DTW) is collected on multiple days.

(3) Depth to water in feet from TOC.

(4) Ground water elevation in feet above mean sea level (msl).

NM = Not Measured.

* 886RW04 was not sampled in Round 13 due to LNAPL thickness of 0.03 foot.

Table 4-1
Ground Water Elevation Summary
Site 886
Fort Monmouth, New Jersey

		#8			#9			#10		
Well ID	TOC(1)	Date	Depth to Water(3)	Ground Water Elevation(4)	Date	Depth to Water(3)	Ground Water Elevation(4)	Date	Depth to Water(3)	Ground Water Elevation(4)
886MW01	14.04	10/20/04	6.52	7.52	01/07/05	5.14	8.90	04/06/05	5.44	8.60
886MW02	13.99	10/20/04	6.45	7.54	01/07/05	6.32	7.67	04/06/05	5.83	8.16
886MW03	14.79	10/20/04	6.95	7.84	01/07/05	6.45	8.34	04/06/05	5.65	9.14
886MW04	19.31	10/20/04	7.79	11.52	01/07/05	6.28	13.03	04/06/05	5.48	13.83
886MW05	19.38	10/20/04	11.15	8.23	01/07/05	10.40	8.98	04/06/05	9.25	10.13
886RW01	14.71	NM	NM	NM	01/06/05	6.44	8.27	NM	NM	NM
886RW02	15.01	NM	NM	NM	01/06/05	6.98	8.03	NM	NM	NM
886RW03	15.03	NM	NM	NM	01/06/05	4.88	10.15	NM	NM	NM
886RW04	14.89	NM	NM	NM	01/06/05	6.88	8.01	NM	NM	NM
886RW05	14.80	NM	NM	NM	01/06/05	6.82	7.98	NM	NM	NM
886RW06	15.25	NM	NM	NM	01/07/05	2.34	12.91	NM	NM	NM
886RW07	15.41	NM	NM	NM	01/07/05	6.13	9.28	NM	NM	NM
886RW08	14.91	NM	NM	NM	01/07/05	3.95	10.96	NM	NM	NM

Notes:

(1) Elevation of survey mark at top of casing (TOC).

(2) Depth to water (DTW) is collected on multiple days.

(3) Depth to water in feet from TOC.

(4) Ground water elevation in feet above mean sea level (msl).

NM = Not Measured.

* 886RW04 was not sampled in Round 13 due to LNAPL thickness of 0.03 foot.

Table 4-1
Ground Water Elevation Summary
Site 886
Fort Monmouth, New Jersey

		#11			#12			#13		
Well ID	TOC[1]	Date	Depth to Water[3]	Ground Water Elevation(4)	Date	Depth to Water[3]	Ground Water Elevation(4)	Date [2]	Depth to Water[3]	Ground Water Elevation(4)
886MW01	14.04	07/12/05	6.16	7.88	10/19/05	4.91	9.13	01/24/06	4.92	9.12
886MW02	13.99	07/12/05	6.11	7.88	10/19/05	5.28	8.71	01/24/06	5.36	8.63
886MW03	14.79	07/12/05	6.61	8.18	10/19/05	5.24	9.55	01/25/06	5.13	9.66
886MW04	19.31	07/12/05	7.34	11.97	10/19/05	5.81	13.50	01/25/06	4.86	14.45
886MW05	19.38	07/12/05	10.62	8.76	10/19/05	8.97	10.41	01/25/06	8.62	10.76
886RW01	14.71	NM	NM	NM	NM	NM	NM	01/24/06	5.35	9.36
886RW02	15.01	NM	NM	NM	NM	NM	NM	01/24/06	5.55	9.46
886RW03	15.03	NM	NM	NM	NM	NM	NM	01/24/06	5.17	9.86
886RW04	14.89	NM	NM	NM	NM	NM	NM	01/24/06 *	5.37	9.52
886RW05	14.80	NM	NM	NM	NM	NM	NM	01/24/06	5.37	9.43
886RW06	15.25	NM	NM	NM	NM	NM	NM	01/25/06	2.08	13.17
886RW07	15.41	NM	NM	NM	NM	NM	NM	01/25/06	4.73	10.68
886RW08	14.91	NM	NM	NM	NM	NM	NM	01/25/06	3.33	11.58

Notes:

(1) Elevation of survey mark at top of casing (TOC).

(2) Depth to water (DTW) is collected on multiple days.

(3) Depth to water in feet from TOC.

(4) Ground water elevation in feet above mean sea level (msl).

NM = Not Measured.

* 886RW04 was not sampled in Round 13 due to LNAPL thickness of 0.03 foot.

Table 4-1
Ground Water Elevation Summary
Site 886
Fort Monmouth, New Jersey

		#14			#15			#16		
Well ID	TOC$^{(1)}$	Date	Depth to Water$^{(3)}$	Ground Water Elevation(4)	Date	Depth to Water$^{(3)}$	Ground Water Elevation(4)	Date $^{(2)}$	Depth to Water$^{(3)}$	Ground Water Elevation(4)
886MW01	14.04	04/11/06	6.54	7.50	07/11/06	5.88	8.16	11/14/06	5.46	8.58
886MW02	13.99	04/11/06	6.41	7.58	07/11/06	5.78	8.21	11/14/06	5.48	8.51
886MW03	14.79	04/11/06	7	7.79	07/11/06	6.4	8.39	11/14/06	5.93	8.86
886MW04	19.31	04/11/06	7.16	12.15	07/11/06	7.23	12.08	11/14/06	6.29	13.02
886MW05	19.38	04/11/06	11.03	8.35	07/11/06	10.41	8.97	11/14/06	9.75	9.63
886RW01	14.71	04/11/06	6.98	7.73	NM	NM	NM	11/14/06	5.89	8.82
886RW02	15.01	04/11/06	7.25	7.76	NM	NM	NM	11/14/06	6.17	8.84
886RW03	15.03	04/11/06	7.28	7.75	NM	NM	NM	11/14/06	5.52	9.51
886RW04	14.89	04/11/06	7.14	7.75	NM	NM	NM	11/14/06	6.05	8.84
886RW05	14.80	04/11/06	7.1	7.70	NM	NM	NM	11/14/06	6	8.80
886RW06	15.25	04/11/06	7.2	8.05	NM	NM	NM	11/15/06	2.17	13.08
886RW07	15.41	04/11/06	7.56	7.85	NM	NM	NM	11/15/06	5.67	9.74
886RW08	14.91	04/11/06	6.9	8.01	NM	NM	NM	11/15/06	4.44	10.47

Notes:
(1) Elevation of survey mark at top of casing (TOC).
(2) Depth to water (DTW) is collected on multiple days.
(3) Depth to water in feet from TOC.
(4) Ground water elevation in feet above mean sea level (msl).
NM = Not Measured.
* 886RW04 was not sampled in Round 13 due to LNAPL thickness of 0.03 foot.

Table 4-1
Ground Water Elevation Summary
Site 886
Fort Monmouth, New Jersey

		#17			#18			#19		
Well ID	TOC(1)	Date (2)	Depth to Water(3)	Ground Water Elevation(4)	Date (2)	Depth to Water(3)	Ground Water Elevation(4)	Date	Depth to Water(3)	Ground Water Elevation(4)
886MW01	14.04	01/25/07	5.89	8.15	04/19/07	4.58	9.46	08/02/07	5.92	8.12
886MW02	13.99	01/25/07	6.02	7.97	04/19/07	5.18	8.81	08/02/07	5.98	8.01
886MW03	14.79	01/26/07	6.38	8.41	04/19/07	4.88	9.91	08/02/07	6.45	8.34
886MW04	19.31	01/26/07	6.69	12.62	04/19/07	5.08	14.23	08/02/07	7.26	12.05
886MW05	19.38	01/26/07	10.34	9.04	04/19/07	8.46	10.92	08/02/07	10.49	8.89
886RW01	14.71	01/25/07	6.48	8.23	04/18/07	5.05	9.66	08/02/07	6.47	8.24
886RW02	15.01	01/25/07	6.66	8.35	04/18/07	5.17	9.84	08/02/07	6.71	8.30
886RW03	15.03	01/25/07	6.69	8.34	04/18/07	4.01	11.02	08/02/07	6.73	8.30
886RW04	14.89	01/25/07	6.54	8.35	04/18/07	4.98	9.91	08/02/07	6.59	8.30
886RW05	14.80	01/25/07	6.49	8.31	04/18/07	4.94	9.86	08/02/07	6.53	8.27
886RW06	15.25	01/26/07	6.42	8.83	04/18/07	2.08	13.17	08/02/07	6.5	8.75
886RW07	15.41	01/26/07	6.91	8.50	04/19/07	5.22	10.19	08/02/07	6.92	8.49
886RW08	14.91	01/26/07	5.81	9.10	04/19/07	3.01	11.90	08/02/07	5.98	8.93

Notes:
(1) Elevation of survey mark at top of casing (TOC).
(2) Depth to water (DTW) is collected on multiple days.
(3) Depth to water in feet from TOC.
(4) Ground water elevation in feet above mean sea level (msl).
NM = Not Measured.
* 886RW04 was not sampled in Round 13 due to LNAPL thickness of 0.03 foot.

Table 4-2
Ground Water Sampling Summary
Site 886
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#2	886MW01	3024904	5/22/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW02	3024905	5/22/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW03	3024906	5/22/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW04	3024907	5/22/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW05	3024908	5/22/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886RW01	3024909	5/22/2003	Aqueous	VOCs	624
	886RW08	3024910	5/22/2003	Aqueous	VOCs	624
#3	886MW01	3038404	7/22/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW02	3038405	7/22/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW03	3038406	7/22/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW04	3038407	7/22/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW05	3038408	7/22/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886RW01	3038409	7/22/2003	Aqueous	VOCs	624
	886RW08	3038410	7/22/2003	Aqueous	VOCs	624
#4	886MW01	3064804	10/14/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW02	3064805	10/14/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW03	3064806	10/14/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW04	3064807	10/14/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886MW05	3064808	10/14/2003	Aqueous	VOCs, Metals, Pest/PCBs, SVOCs, TPHs	624, 3120B, 3112B (mercury), 608, 625
	886RW01	3064809	10/14/2003	Aqueous	VOCs	624
	886RW08	3064810	10/14/2003	Aqueous	VOCs	624
#5	886MW01	4009404	2/3/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW02	4009405	2/3/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW03	4009406	2/3/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW04	4009407	2/3/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW05	4009408	2/3/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886RW01	4009004	2/2/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886RW02	4009005	2/2/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886RW03	4009006	2/2/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886RW04	4009007	2/2/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886RW05	4009008	2/2/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886RW06	4009009	2/2/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886RW07	4009010	2/2/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886RW08	4009011	2/2/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625

Notes:
VOCs = Volatile Organic Compounds.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
Site 886
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#6	886MW01	4038804	5/25/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW02	4038805	5/25/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW03	4038806	5/25/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW04	4038807	5/25/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW05	4038808	5/25/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
#7	886MW01	4057804	8/4/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW02	4057805	8/4/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW03	4057806	8/4/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW04	4057807	8/4/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW05	4057808	8/4/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
#8	886MW01	4072804	10/20/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW02	4072805	10/20/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW03	4072806	10/20/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW04	4072807	10/20/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
	886MW05	4072808	10/20/2004	Aqueous	VOCs, Metals, SVOCs, TPHs	624, 3120B, 3112B (mercury), 625
#9	886MW01	5000907	1/7/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW02	5000908	1/7/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW03	5000909	1/7/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW04	5000910	1/7/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW05	5000911	1/7/2005	Aqueous	VOCs, SVOCs	624, 625
	886RW01	5000604	1/6/2005	Aqueous	VOCs, SVOCs	624, 625
	886RW02	5000605	1/6/2005	Aqueous	VOCs, SVOCs	624, 625
	886RW03	5000608	1/6/2005	Aqueous	VOCs, SVOCs	624, 625
	886RW04	5000607	1/6/2005	Aqueous	VOCs, SVOCs	624, 625
	886RW05	5000606	1/6/2005	Aqueous	VOCs, SVOCs	624, 625
	886RW06	5000904	1/7/2005	Aqueous	VOCs, SVOCs	624, 625
	886RW07	5000905	1/7/2005	Aqueous	VOCs, SVOCs	624, 625
	886RW08	5000906	1/7/2005	Aqueous	VOCs, SVOCs	624, 625
#10	886MW01	5018704	4/6/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW02	5018705	4/6/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW03	5018706	4/6/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW04	5018707	4/6/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW05	5018708	4/6/2005	Aqueous	VOCs, SVOCs	624, 625

Notes:
VOCs = Volatile Organic Compounds.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
Site 886
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#11	886MW01	5034204	7/12/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW02	5034205	7/12/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW03	5034206	7/12/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW04	5034207	7/12/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW05	5034208	7/12/2005	Aqueous	VOCs, SVOCs	624, 625
#12	886MW01	5053704	10/19/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW02	5053705	10/19/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW03	5053706	10/19/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW04	5053707	10/19/2005	Aqueous	VOCs, SVOCs	624, 625
	886MW05	5053708	10/19/2005	Aqueous	VOCs, SVOCs	624, 625
#13	886MW01	6004504	1/24/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW02	6004505	1/24/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW03	6005204	1/25/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW04	6005205	1/25/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW05	6005206	1/25/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW01	6004506	1/24/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW02	6004507	1/24/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW03	6004508	1/24/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW05	6004509	1/24/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW06	6005207	1/25/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW07	6005208	1/25/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW08	6005209	1/25/2006	Aqueous	VOCs, SVOCs	624, 625
#14	886MW01	6014704	4/11/2006	Aqueous	VOCs, TPHs	624
	886MW02	6014705	4/11/2006	Aqueous	VOCs, TPHs	624
	886MW03	6014706	4/11/2006	Aqueous	VOCs, TPHs	624
	886MW04	6014707	4/11/2006	Aqueous	VOCs, TPHs	624
	886MW05	6014708	4/11/2006	Aqueous	VOCs, TPHs	624
	886RW01	6014709	4/11/2006	Aqueous	TPHs	625
	886RW02	6014710	4/11/2006	Aqueous	TPHs	625
	886RW03	6014711	4/11/2006	Aqueous	TPHs	625
	886RW04	6014712	4/11/2006	Aqueous	TPHs	625
	886RW05	6014713	4/11/2006	Aqueous	TPHs	625
	886RW06	6014714	4/11/2006	Aqueous	TPHs	625
	886RW07	6014715	4/11/2006	Aqueous	TPHs	625

Notes:
VOCs = Volatile Organic Compounds.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
Site 886
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886RW08	6014716	4/11/2006	Aqueous	TPHs	625
#15	886MW01	6030704	7/11/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW02	6030705	7/11/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW03	6030706	7/11/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW04	6030707	7/11/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW05	6030708	7/11/2006	Aqueous	VOCs, SVOCs	624, 625
#16	886MW01	6049604	11/14/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW02	6049605	11/14/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW03	6049606	11/14/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW04	6049607	11/14/2006	Aqueous	VOCs, SVOCs	624, 625
	886MW05	6049608	11/14/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW01	6049609	11/14/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW02	6049610	11/14/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW03	6049611	11/14/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW04	6049612	11/14/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW05	6049613	11/14/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW06	6049804	11/15/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW07	6049805	11/15/2006	Aqueous	VOCs, SVOCs	624, 625
	886RW08	6049806	11/15/2006	Aqueous	VOCs, SVOCs	624, 625
#17	886MW01	7002904	1/25/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW02	7002905	1/25/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW03	7003004	1/26/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW04	7003005	1/26/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW05	7003006	1/26/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW01	7002906	1/25/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW02	7002907	1/25/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW03	7002908	1/25/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW04	7002909	1/25/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW05	7002910	1/25/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW06	7003007	1/26/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW07	7003008	1/26/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW08	7003009	1/26/2007	Aqueous	VOCs, SVOCs	624, 625
#18	886MW01	7014204	4/19/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW02	7014205	4/19/2007	Aqueous	VOCs, SVOCs	624, 625

Notes:
VOCs = Volatile Organic Compounds.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
Site 886
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886MW03	7014206	4/19/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW04	7014207	4/19/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW05	7014208	4/19/2007	Aqueous	VOCs, SVOCs	624, 625
#18	886RW01	7014104	4/18/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW02	7014105	4/18/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW03	7014106	4/18/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW04	7014107	4/18/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW05	7014108	4/18/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW06	7014109	4/18/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW07	7014209	4/19/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW08	7014210	4/19/2007	Aqueous	VOCs, SVOCs	624, 625
#19	886MW01	7029004	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW02	7029005	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW03	7029006	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW04	7029007	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW05	7029008	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW01	7029009	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW02	7029010	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW03	7029011	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW04	7029012	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW05	7029013	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW06	7029014	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW07	7029015	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW08	7029016	8/2/2007	Aqueous	VOCs, SVOCs	624, 625
#20	886MW01	7038804	10/12/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW02	7038805	10/12/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW03	7038806	10/12/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW04	7038807	10/12/2007	Aqueous	VOCs, SVOCs	624, 625
	886MW05	7038808	10/12/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW01	7038404	10/11/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW02	7058405	10/11/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW03	7038406	10/11/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW04	7038407	10/11/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW05	7038408	10/11/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW06	7038409	10/11/2007	Aqueous	VOCs, SVOCs	624, 625
	886RW07	7038809	10/12/2007	Aqueous	VOCs, SVOCs	624, 625

Notes:
VOCs = Volatile Organic Compounds.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
Site 886
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886RW08	7038810	10/12/2007	Aqueous	VOCs, SVOCs	624, 625
#21	886MW01	8009804	3/27/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW02	8009805	3/27/2008	Aqueous	VOCs, SVOCs	624, 625
#21	886MW03	8009904	3/28/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW04	8009905	3/28/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW05	8009906	3/28/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW01	8009806	3/27/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW02	8009807	3/27/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW03	8009808	3/27/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW04	8009809	3/27/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW05	8009810	3/27/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW06	8009907	3/28/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW07	8009908	3/28/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW08	8009909	3/28/2008	Aqueous	VOCs, SVOCs	624, 625
#22	886MW01	8921104	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW02	8921105	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW03	8921106	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW04	8921107	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW05	8921108	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW01	8921109	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW02	8921110	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW03	8921111	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW04	8921112	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW05	8921113	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW06	8921114	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW07	8921115	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW08	8921116	6/25/2008	Aqueous	VOCs, SVOCs	624, 625
#23	886MW01	8033304	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW02	8033305	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW03	8033306	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW04	8033307	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW05	8033308	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW01	8033309	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW02	8033310	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW03	8033311	9/16/2008	Aqueous	VOCs, SVOCs	624, 625

Notes:
VOCs = Volatile Organic Compounds.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
Site 886
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	886RW04	8033312	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW05	8033313	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW06	8033314	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW07	8033315	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW08	8033316	9/16/2008	Aqueous	VOCs, SVOCs	624, 625
#24	886MW01	8040904	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW02	8040905	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW03	8040906	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW04	8040907	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886MW05	8040908	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW01	8040909	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW02	8040910	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW03	8040911	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW04	8040912	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW05	8040913	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW06	8040914	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW07	8040915	11/12/2008	Aqueous	VOCs, SVOCs	624, 625
	886RW08	8040916	11/12/2008	Aqueous	VOCs, SVOCs	624, 625

Notes:
VOCs = Volatile Organic Compounds.
Metals = Target Analyte List Metals.

Table 5-1
Ground Water Sampling Results
Site 886 MW01 (Feb03-Oct05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	1	2	2	3	4	4	5	6	7	7	8	9
WELL ID			886MW01	MW01 Duplicate	886MW01	MW01 Duplicate	886MW01	886MW01	MW01 Duplicate	886MW01	886MW01	886MW01	MW01 Duplicate	886MW01	886MW01
Date Collected			2/12/2003	2/12/2003	5/22/2003	5/22/2003	7/22/2003	10/14/2003	10/14/2003	2/3/2004	5/25/2004	8/4/2004	8/4/2004	10/20/2004	1/6/2005
ANALYTE / Lab ID			30066.07	30066.03	30249.04	30249.03	30384.04	30648.04	30648.03	40094.04	40388.04	40578.04	40578.03	40728.04	50009.07
VOCs															
Acetone	700	μg/L	4.18	3.95	ND	ND	ND	ND	ND	ND	ND	ND	2.87	ND	ND
Benzene	1	μg/L	0.59 J	0.63 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	μg/L	0.93 J	1.03 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether (MTBE)	NLE	μg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.79 J	1.40 J
Tetrachloroethylene	1	μg/L	0.64 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	μg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.62 J	0.38 J
Xylenes (Total)	1000	μg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.49 J
TICs*	500	μg/L	50.0	50.0	39.0	35.0	55.0	13.0	13.0	32.0	68.0	7.0	5.0	108.0	55.0
TPH															
Total Petroleum Hydrocarbons	NLE	mg/L	2.1	2.0	1.8	1.4	1.6	1.6	1.7	1.9	1.5	1.0	1.0	1.7	NA
SVOCs															
2-Methylnaphthalene	NLE	μg/L	1.72 J	1.68 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	μg/L	2.77 J	2.73 J	2.61 J	2.96 J	2.81 J	1.56 J	1.42 J	2.03 J	2.72 J	ND	ND	1.84 J	2.87 J
Bis(2-ethylhexyl) phthalate	30	μg/L	2.04 J	1.64 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	μg/L	2.71 J	ND	2.58 J	2.87 J	2.71 J	1.52 J	1.31 J	2.28 J	2.39 J	ND	1.02 J	2.0 J	2.70 J
Diethyl phthalate	5000	μg/L	ND	1.36 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	μg/L	2.9 J	2.63 J	2.81 J	2.93 J	3.36 J	1.04 J	ND	2.13 J	2.89 J	ND	ND	2.13 J	2.64 J
Naphthalene	NLE	μg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	μg/L	1.83 J	1.05 J	ND	ND	1.0 J	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	μg/L	222.0	215.0	162.0	183.0	137.0	22.0	15.0	153.0	105.0	ND	136.0	86.0	135.0
Metals															
Aluminum	200	μg/L	**212**	**205**	**1320**	**1110**	128 ER	**1100**	**630**	170 ER	**234**	**204**	**348**	**307**	NA
Arsenic	8	μg/L	5.91 ER	4.83 ER	**46.9**	**41.9**	**8.22**	**14.2**	**12.0**	**27.3**	**12.7**	**8.78**	**21.5**	**8.85**	NA
Barium	2000	μg/L	15.3 ER	15.2 ER	17.0	15.8	13.7	43.5	41.0	12 ER	14.3	52.5 ER	57.6 ER	22.8 ER	NA
Beryllium	20	μg/L	ND	ND	0.180 ER	0.131 ER	0.0283 ER	0.233 ER	ND	ND	ND	ND	ND	ND	NA
Cadmium	4	μg/L	1.55 ER	1.56 ER	**4.16**	3.9	2.41	1.70 ER	1.10 ER	ND	**8.85**	ND	3.41 ER	3.93 ER	NA
Chromium III	100	μg/L	1.78 ER	3.26 ER	11.9	9.68	1.45 ER	8.6	4.90 ER	ND	ND	ND	ND	ND	NA
Copper	1000	μg/L	ND	ND	ND	ND	ND	123.0	ND	ND	23.4	5.33 ER	ND	ND	NA
Lead	10	μg/L	1.18 ER	2.1 ER	5.43	4.41 ER	2.49 ER	**11.2**	3.0 ER	ND	**11.5**	ND	ND	ND	NA
Nickel	100	μg/L	ND	ND	1.33	ND	0.727 ER	14.0	6.0	ND	ND	12.1 ER	12.7 ER	ND	NA
Selenium	50	μg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.
Total xylenes= ∑ of *o*-xylene and *m,p*-xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-1
Ground Water Sampling Results
Site 886 MW01 (Feb03-Oct05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	10	11	11	12	12
WELL ID			886MW01	886MW01	MW01 Duplicate	886MW01	MW01 Duplicate
Date Collected			4/6/2005	7/12/2005	7/12/2005	10/19/2005	10/19/2005
ANALYTE / Lab ID			50187.04	50342.04	50342.03	50537.04	50537.03
VOCs							
Acetone	700	µg/L	ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND	ND	ND	2.09	2.08
Tetrachloroethylene	1	µg/L	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	0.51 J	0.49 J
Xylenes (Total)	1000	µg/L	ND	ND	ND	0.51 J	0.48 J
TICs*	500	µg/L	69.0	16.0	15.0	68.0	71.0
TPH							
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA
SVOCs							
2-Methylnaphthalene	NLE	µg/L	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	2.02 J	1.29 J	1.49 J	3.31 J	3.15 J
Bis(2-ethylhexyl) phthalate	30	µg/L	1.95 J	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	1.82 J	1.54 J	1.79 J	3.45 J	3.37 J
Diethyl phthalate	5000	µg/L	1.06 JB	ND	ND	ND	ND
Fluorene	300	µg/L	1.96 J	1.21 J	1.46 J	3.85 J	3.74 J
Naphthalene	NLE	µg/L	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	ND	0.84 J	0.91 J
TICs*	500	µg/L	67.0	27.0	40.0	143.0	131.0
Metals							
Aluminum	200	µg/L	212	212	212	212	212
Arsenic	8	µg/L	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA
Chromium III	100	µg/L	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-1
Ground Water Sampling Results
Site 886 MW01 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	14	15	16	17	18	18
WELL ID			886MW01	886MW01	886MW01	886MW01	886MW01	886MW01	MW01 Duplicate
Date Collected			1/24/2006	4/11/2006	7/11/2006	11/14/2006	1/25/2007	4/19/2007	4/19/2007
ANALYTE / Lab ID			60045.04	60147.04	60307.04	60496.04	70029.04	70142.04	70142.03
VOCs									
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND	0.07	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether (MTBE)	70	µg/L	ND	0.50 J	ND	ND	ND	ND	ND
Tetrachloroethylene	1	µg/L	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND	0.65 J	0.33 J	ND	ND
TICs*	500	µg/L	107.0	12.0	ND	11.0	54.0	13.0	12.0
TPH									
Total Petroleum Hydrocarbons	NLE	mg/L	NA	0.4 J	NA	NA	NA	NA	NA
SVOCs									
2-Methylnaphthalene	NLE	µg/L	ND	NA	ND	1.68 J	ND	ND	ND
Acenaphthene	400	µg/L	2.90 J	NA	ND	1.11 J	3.17 J	3.01 J	2.58 J
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	NA	ND	ND	ND	0.66	ND
Dibenzofuran	NLE	µg/L	2.72 J	NA	ND	0.95 J	2.79 J	ND	2.23 J
Diethyl phthalate	5000	µg/L	ND	NA	ND	ND	ND	ND	ND
Fluorene	300	µg/L	3.0 J	NA	ND	0.81 J	3.26 J	3.10 J	2.76 J
Naphthalene	300	µg/L	ND	NA	ND	ND	ND	ND	ND
Phenanthrene	100	µg/L	ND	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	104.0	NA	ND	21.0	132.0	153.0	179.0

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o*-xylene and *m,p*-xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-1
Ground Water Sampling Results
Site 886 MW01 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	19	20	20	21	21	22	22	23	24	24
WELL ID			886MW01	MW01 Duplicate	886MW01	MW01 Duplicate	886MW01	MW01 Duplicate	886MW01	MW01 Duplicate	886MW01	886MW01	MW01 Duplicate
Date Collected			8/2/007	8/2/007	10/12/2007	10/12/2007	3/27/2008	3/27/2008	6/25/2008	6/25/2008	9/16/2008	11/12/2008	11/12/2008
ANALYTE / Lab ID			70290.04	70290.03	70388.04	70388.03	80098.04	80098.03	80098.04	80098.03	80333.04	80409.04	80409.03
VOCs													
Acetone	6000	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether (MTBE)	70	µg/L	ND	ND	3.86	4.46	2.48	NA	16.76	17.05	3.88	2.21	2.29
Tetrachloroethylene	1	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Toluene	600	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND	ND	0.38 J	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	242.0	NA	ND	ND	ND	13.0	11.0
TPH													
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs													
2-Methylnaphthalene	NLE	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	6.18	NA	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Fluorene	300	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Naphthalene	300	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	170.46	NA	ND	ND	61.0	19.0	4.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb
Total xylenes= ∑ of *o*-xylene and *m,p*-xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-2
Ground Water Sampling Results
Site 886 MW02 (Feb03-Oct05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	2	3	4	5	5	6	7	8	9	10
WELL ID			886MW02	886MW02	886MW02	886MW02	886MW02	MW02 Duplicate	886MW02	886MW02	886MW02	886MW02	886MW02
Date Collected			2/12/2003	5/22/2003	7/22/2003	10/14/2003	2/3/2004	2/3/2004	5/25/2004	8/4/2004	10/20/2004	1/7/2005	4/6/2005
ANALYTE / Lab ID			30066.08	30249.05	30384.05	30648.05	40094.05	40094.03	40388.05	40578.05	40728.05	50009.08	50187.05
VOCs													
Acetone	700	µg/L	3.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.10 J
Xylenes (Total)	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.30 J	ND	ND
TICs*	500	µg/L	16.0	ND	43.0	ND	9.0	ND	28.0	ND	51.0	10.0	ND
TPH													
Total Petroleum Hydrocarbons	NLE	mg/L	0.8	0.8	ND	1.0	ND	0.9	0.8	ND	ND	NA	NA
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	1.66 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	5000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	17.0	27.0	12.0	14.0	ND	ND	ND	ND	ND	11.0	5.0
Metals													
Antimony	20	µg/L	ND	3.89 ER	ND	ND	ND	ND	ND	ND	ND	NA	NA
Arsenic	8	µg/L	**12.2**	**28.7**	**43.9**	**19.4**	**11.9**	**13.0**	**14.4**	**11.4**	**9.84**	NA	NA
Barium	2000	µg/L	107 ER	82.2	77.9	74.0	88.4 ER	87 ER	67.1 ER	54.9 ER	50.1 ER	NA	NA
Beryllium	20	µg/L	ND	0.250 ER	0.0749 ER	0.316 ER	ND	ND	ND	ND	ND	NA	NA
Cadmium	4	µg/L	2.38 ER	**4.15**	**4.32**	0.960 ER	ND	ND	2.92 ER	ND	ND	NA	NA
Chromium III	100	µg/L	2.92 ER	15.2	6.65	15.5	16.4 ER	15.5 ER	5.06 ER	ND	ND	NA	NA
Copper	1000	µg/L	ND	ND	ND	11.3	14.6 ER	19.5 ER	ND	11.8 ER	ND	NA	NA
Lead	10	µg/L	2.8 ER	5.49	4.71 ER	5.14	**13.7**	**13.6**	6.55 ER	7.57 ER	ND	NA	NA
Nickel	100	µg/L	4.08 ER	2.71 ER	2.81 ER	4.16 ER	12.6 ER	12.6 ER	13 ER	14.2 ER	13.6 ER	NA	NA
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004

Table 5-2
Ground Water Sampling Results
Site 886 MW02 (Feb03-Oct05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	10	11	12
WELL ID			MW02 Duplicate	886MW02	886MW02
Date Collected			4/6/2005	7/12/2005	10/19/2005
ANALYTE / Lab ID			50187.03	50342.05	50537.05
VOCs					
Acetone	700	µg/L	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	1.08 J	1.58 J	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND
TICs*	500	µg/L	ND	ND	14.0
TPH					
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA
SVOCs					
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND
Diethyl phthalate	5000	µg/L	0.97 JB	ND	ND
TICs*	500	µg/L	ND	6.0	ND
Metals					
Antimony	20	µg/L	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA
Chromium III	100	µg/L	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA
Lead	10	µg/L	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004

Table 5-2
Ground Water Sampling Results
Site 886 MW02 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	14	15	16	17	18
WELL ID			886MW02	886MW02	886MW02	886MW02	886MW02	886MW02
Date Collected			1/24/2006	4/11/2006	7/11/2006	11/14/2006	1/25/2007	4/19/2007
ANALYTE / Lab ID			60045.05	60147.05	60307.05	60496.05	70029.05	70142.05
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	µg/L	1.34 J	1.04 J	ND	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	4.0	6.0	3.0	ND	ND
SVOCs								
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	NA	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	NA	ND	ND	ND	ND
TICs*	500	µg/L	ND	NA	ND	ND	ND	25.0

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-2
Ground Water Sampling Results
Site 886 MW02 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	22	23	24
WELL ID			886MW02	886MW02	886MW02	886MW02	886MW02	886MW02
Date Collected			8/2/2007	10/12/2007	3/27/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.05	70388.05	80098.05	89211.05	80333.05	80409.05
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND	ND	ND	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	15.0	39.3	ND	23.0	4.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)

B-Compound detected in the sample and its associated blank sample

ND- Analyte Not Detected in sample.

NA-Not Analyzed

NS- Not Sampled.

NLE-No Limit Established

ER-Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL

* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb

Total xylenes=∑ of *o* -xylene and *m,p* -xylene.

Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-3
Ground Water Sampling Results
Site 886 MW03 (Feb03-Oct05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	2	3	3	4	5	6	7	8	9	10
WELL ID			886MW03	886MW03	886MW03	MW03 Duplicate	886MW03	886MW03	886MW03	886MW03	886MW03	886MW03	886MW03
Date Collected			2/12/2003	5/22/2003	7/22/2003	7/22/2003	10/14/2003	2/3/2004	5/25/2004	8/4/2004	10/20/2004	1/7/2005	4/6/2005
ANALYTE / Lab ID			30066.06	30249.06	30384.06	30384.03	30648.06	40094.06	40388.06	40578.06	40728.06	50009.09	50187.06
VOCs													
Acetone	700	µg/L	6.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	0.77 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	2.26	ND	1.24 J	1.03 J	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	102.0	ND	ND	ND	ND	ND	3.0	ND	ND	ND	ND
TPH													
Total Petroleum Hydrocarbons	NLE	mg/L	13.3	1.5	3.4	3.5	2.5	1.4	1.2	1.5	0.6	NA	NA
SVOCs													
2-Methylnaphthalene	NLE	µg/L	17.64	ND	ND	ND	ND	ND	ND	1.29 J	ND	ND	ND
Acenaphthene	NLE	µg/L	8.92 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	11.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NLE	µg/L	4.0 J	ND	ND	ND	1.64 J	1.48 J	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	20	µg/L	**38.99**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	24.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	µg/L	1.31 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	**2671.0**	30.0	15.0	25.0	30.0	9.0	ND	29.0	15.0	11.0	51.0
Pest/PCBs													
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
delta-BHC	NLE	µg/L	ND	0.16	ND	ND	ND	NA	NA	NA	NA	NA	NA
gamma-BHC	0.2	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
Metals													
Antimony	20	µg/L	ND	ND	ND	4.49 ER	ND	ND	ND	ND	ND	NA	NA
Arsenic	8	µg/L	ND	ND	**9.32**	**8.02**	**10.8**	**11.1**	**18.5**	7.44 ER	**8.54**	NA	NA
Barium	2000	µg/L	69.3 ER	40.3	28.9	25.4	39.4	45.4 ER	39.8 ER	31.7 ER	18.1 ER	NA	NA
Beryllium	20	µg/L	0.597 ER	0.187 ER	0.066 ER	0.0662 ER	0.476 ER	ND	2.6 ER	ND	ND	NA	NA
Cadmium	4	µg/L	ND	0.801 ER	0.891 ER	0.678 ER	1.06 ER	ND	3.66 ER	ND	ND	NA	NA
Chromium III	100	µg/L	2.26 ER	3.42 ER	3.64 ER	3.42 ER	14.3	9.8 ER	17.4 ER	5.09 ER	13.4 ER	NA	NA
Copper	1000	µg/L	3.54 ER	0.654 ER	1.15 ER	1.30 ER	12.5	ND	16.7 ER	10.4 ER	15.8 ER	NA	NA
Lead	10	µg/L	ND	1.59 ER	0.938 ER	1.15 ER	6.1	ND	**10.5**	ND	ND	NA	NA
Nickel	100	µg/L	13.7 ER	8.05	5.69	4.25 ER	16.6	9.67 ER	23 ER	7.62 ER	5.96 ER	NA	NA
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the
* TICs = Tentatively Identified Compunds, can not
exceed 500 ppb for VOCs and SVOCs. No
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were
discontinued as per NJDEP approval letter dated

Table 5-3
Ground Water Sampling Results
Site 886 MW03 (Feb03-Oct05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	11	12
WELL ID			886MW03	886MW03
Date Collected			7/12/2005	10/19/2005
ANALYTE / Lab ID			50342.06	50537.06
VOCs				
Acetone	700	µg/L	ND	243.78
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND	ND
TICs*	500	µg/L	ND	ND
TPH				
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA
SVOCs				
2-Methylnaphthalene	NLE	µg/L	ND	ND
Acenaphthene	NLE	µg/L	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND
Fluorene	300	µg/L	ND	ND
Naphthalene	NLE	µg/L	ND	ND
N-Nitrosodiphenylamine	20	µg/L	ND	ND
Phenanthrene	NLE	µg/L	ND	ND
Pyrene	200	µg/L	ND	ND
TICs*	500	µg/L	18.0	15.0
Pest/PCBs				
4,4'-DDE	0.1	µg/L	NA	NA
delta-BHC	NLE	µg/L	NA	NA
gamma-BHC	0.2	µg/L	NA	NA
Metals				
Antimony	20	µg/L	NA	NA
Arsenic	8	µg/L	NA	NA
Barium	2000	µg/L	NA	NA
Beryllium	20	µg/L	NA	NA
Cadmium	4	µg/L	NA	NA
Chromium III	100	µg/L	NA	NA
Copper	1000	µg/L	NA	NA
Lead	10	µg/L	NA	NA
Nickel	100	µg/L	NA	NA
Selenium	50	µg/L	NA	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and SVOCs. No
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated

Table 5-3
Ground Water Sampling Results
Site 886 MW03 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	14	14	15	15	16	17	17	18
WELL ID			886MW03	886MW03	MW03 Duplicate	886MW03	MW03 Duplicate	886MW03	886MW03	MW03 Duplicate	886MW03
Date Collected			1/25/2006	4/11/2006	4/11/2006	7/11/2006	7/11/2006	11/14/2006	1/26/2007	1/26/2007	4/19/2007
ANALYTE / Lab ID			60052.04	60147.06	60147.03	60307.06	60307.03	60496.06	70030.04	70030.03	70142.06
VOCs											
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	11.68
Methyl *tert* -butyl ether (MTBE)	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	4.0	8.0	ND	ND	ND	ND	11.0	ND
SVOCs											
2-Methylnaphthalene	NLE	µg/L	ND	NA	NA	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	NA	NA	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	NA	NA	ND	ND	ND	1.40 J	ND	ND
Fluorene	300	µg/L	ND	NA	NA	ND	ND	ND	ND	ND	ND
Naphthalene	300	µg/L	ND	NA	NA	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	NA	NA	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	NA	NA	ND	ND	ND	ND	ND	ND
Pyrene	200	µg/L	ND	NA	NA	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	NA	NA	ND	ND	5.0	ND	ND	28.0

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and SVOCs. No
Total xylenes=∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated

Table 5-3
Ground Water Sampling Results
Site 886 MW03 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	21	22	23	24
WELL ID			886MW03	886MW03	886MW03	MW03 Duplicate	886MW03	886MW03	886MW03
Date Collected			8/2/2007	10/12/2007	3/28/2008	3/28/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.06	70388.06	80099.04	80099.03	89211.06	80333.06	80409.06
VOCs									
Acetone	6000	µg/L	ND	ND	ND	NA	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	ND	NA	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	µg/L	ND	ND	ND	NA	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND
TPH									
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA	NA
SVOCs									
2-Methylnaphthalene	NLE	µg/L	ND	ND	ND	NA	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	NA	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	NA	ND	ND	ND
Fluorene	300	µg/L	ND	ND	ND	NA	ND	ND	ND
Naphthalene	300	µg/L	ND	ND	ND	NA	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	ND	ND	NA	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	ND	NA	ND	ND	ND
Pyrene	200	µg/L	ND	ND	ND	NA	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	NA	ND	ND	8.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and SVOCs. No
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated

Table 5-4
Ground Water Sampling Results
Site 886 MW04 (Feb03-Oct05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	2	3	4	5	6	7	8	9	10	11
WELL ID			886MW04	886MW04	886MW04	886MW04	886MW04	886MW04	886MW04	886MW04	886MW04	886MW04	886MW04
Date Collected			2/12/2003	5/22/2003	7/22/2003	10/14/2003	2/3/2004	5/25/2004	8/4/2004	10/20/2004	1/7/2005	4/6/2005	7/12/2005
ANALYTE / Lab ID			30066.1	30249.07	30384.07	30648.07	40094.07	40388.07	40578.07	40728.07	50009.1	50187.07	50342.07
VOCs													
Ethylbenzene	700	µg/L	3.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND	ND	ND	ND	1.80 J	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	128.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH													
Total Petroleum Hydrocarbons	NLE	mg/L	1.7	1.0	ND	1.2	ND	ND	ND	ND	NA	NA	NA
SVOCs													
2-Methylnaphthalene	NLE	µg/L	28.73	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	7.64 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	1.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	5000	µg/L	1.6 J	1.33 J	ND	ND	1.33 J	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	8.63 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NLE	µg/L	21.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	8.36 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	**1183.0**	16.0	8.0	ND	4.0	ND	11.0	ND	19.0	4.0	ND
Pest/PCBs													
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA
delta-BHC	NLE	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA
gamma-BHC	0.2	µg/L	0.01 J	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA
Metals													
Arsenic	8	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
Barium	2000	µg/L	12 ER	33.1	65.8	77.2	69 ER	19 ER	70.1 ER	54.8 ER	NA	NA	NA
Beryllium	20	µg/L	ND	0.335 ER	0.342 ER	0.588 ER	ND	ND	ND	ND	NA	NA	NA
Cadmium	4	µg/L	0.598 ER	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA
Chromium III	100	µg/L	1.79 ER	4.60 ER	1.49 ER	3.30 ER	ND	ND	ND	ND	NA	NA	NA
Copper	1000	µg/L	5.49 ER	ND	0.319 ER	1.91 ER	ND	ND	ND	ND	NA	NA	NA
Lead	10	µg/L	1.23 ER	1.87 ER	0.841 ER	2.68 ER	ND	ND	ND	ND	NA	NA	NA
Nickel	100	µg/L	1.58 ER	4.23 ER	12.1	12.4	9.72 ER	ND	11.1 ER	7.52 ER	NA	NA	NA
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-4
Ground Water Sampling Results
Site 886 MW04 (Feb03-Oct05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	12
WELL ID			886MW04
Date Collected			10/19/2005
ANALYTE / Lab ID			50537.07
VOCs			
Ethylbenzene	700	µg/L	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND
TICs*	500	µg/L	ND
TPH			
Total Petroleum Hydrocarbons	NLE	mg/L	NA
SVOCs			
2-Methylnaphthalene	NLE	µg/L	ND
Acenaphthene	400	µg/L	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND
Diethyl phthalate	5000	µg/L	ND
Fluorene	300	µg/L	ND
Naphthalene	NLE	µg/L	ND
Phenanthrene	NLE	µg/L	ND
TICs*	500	µg/L	ND
Pest/PCBs			
4,4'-DDE	0.1	µg/L	NA
delta-BHC	NLE	µg/L	NA
gamma-BHC	0.2	µg/L	NA
Metals			
Arsenic	8	µg/L	NA
Barium	2000	µg/L	NA
Beryllium	20	µg/L	NA
Cadmium	4	µg/L	NA
Chromium III	100	µg/L	NA
Copper	1000	µg/L	NA
Lead	10	µg/L	NA
Nickel	100	µg/L	NA
Selenium	50	µg/L	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-4
Ground Water Sampling Results
Site 886 MW04 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	14	15	16	17	18
WELL ID			886MW04	886MW04	886MW04	886MW04	886MW04	886MW04
Date Collected			1/25/2006	4/11/2006	7/11/2006	11/14/2006	1/26/2007	4/19/2007
ANALYTE / Lab ID			60052.05	60147.07	60307.07	60496.07	70030.05	70142.07
VOCs								
Ethylbenzene	700	µg/L	ND	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether (MTBE)	70	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	4.0	ND	ND	ND	ND
SVOCs								
2-Methylnaphthalene	100	µg/L	ND	NA	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	NA	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	NA	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	NA	ND	ND	ND	ND
Fluorene	300	µg/L	ND	NA	ND	ND	ND	ND
Naphthalene	300	µg/L	ND	NA	ND	ND	ND	ND
Phenanthrene	100	µg/L	ND	NA	ND	ND	ND	ND
TICs*	500	µg/L	ND	NA	ND	ND	ND	**170.0**

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o*-xylene and *m,p*-xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-4
Ground Water Sampling Results
Site 886 MW04 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	22	23	24
WELL ID			886MW04	886MW04	886MW04	886MW04	886MW04	886MW04
Date Collected			8/2/2007	10/12/2007	3/28/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.07	70388.07	80099.05	89211.07	80333.07	80409.07
VOCs								
Ethylbenzene	700	μg/L	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	μg/L	ND	ND	ND	ND	ND	2.26
TICs*	500	μg/L	ND	ND	ND	ND	ND	ND
SVOCs								
2-Methylnaphthalene	NLE	μg/L	ND	ND	ND	ND	ND	ND
Acenaphthene	400	μg/L	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	μg/L	ND	**3.76 J**	ND	ND	ND	ND
Diethyl phthalate	6000	μg/L	ND	ND	ND	ND	ND	ND
Fluorene	300	μg/L	ND	ND	ND	ND	ND	ND
Naphthalene	300	μg/L	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	μg/L	ND	ND	ND	ND	ND	ND
TICs*	500	μg/L	ND	4.0	ND	ND	14.0	12.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs
Total xylenes=∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter

Table 5-5
Ground Water Sampling Results
Site 886 MW05 (Feb03-Oct05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	2	3	4	5	6	6	7	8	8	9
WELL ID			886MW05	886MW05	886MW05	886MW05	886MW05	886MW05	MW05 Duplicate	886MW05	886MW05	MW05 Duplicate	886MW05
Date Collected			2/12/2003	5/22/2003	7/22/2003	10/14/2003	2/3/2004	5/25/2004	5/25/2004	8/4/2004	10/20/2004	10/20/2004	1/7/2005
ANALYTE / Lab ID			30066.09	30249.08	30384.08	30648.08	40094.08	40388.08	40388.03	40578.08	40728.08	40728.03	50009.11
VOCs													
Acetone	700	µg/L	ND	ND	ND	ND	6.59	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	7.06	4.02	1.73 J	1.52 J	1.43 J	0.97 J	1.17 J	0.90 J	1.02 J	0.50 J
Xylenes (Total)	1000	µg/L	ND	2.04	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	234.0	138.0	79.0	76.0	64.0	34.0	91.0	125.0	144.0	19.0
TPH													
Total Petroleum Hydrocarbons	NLE	mg/L	ND	1.6	10.5	3.1	1.9	1.9	1.7	2.8	1.3	1.5	NA
SVOCs													
2-Methylnaphthalene	NLE	µg/L	ND	1.90 J	21.72	4.06 J	2.48 J	1.52 J	1.41 J	4.22 J	ND	ND	ND
Acenaphthene	400	µg/L	ND	2.16 J	7.50 J	4.59 J	2.76 J	2.32 J	2.23 J	4.29 J	2.76 J	2.01 J	1.39 J
Anthracene	2000	µg/L	ND	ND	1.85 J	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	ND	ND	3.58 J	2.39 J	ND	ND	3.89 J	ND	ND	1.16 J
Diethyl phthalate	5000	µg/L	1.14 J	ND	ND	ND	1.39 J	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	ND	2.15 J	8.70 J	5.33 J	2.87 J	2.20 J	2.05 J	5.07 J	2.71 J	2.07 J	1.52 J
Naphthalene	NLE	µg/L	ND	4.87 J	21.31	8.30 J	6.55 J	6.32 J	5.87 J	10.23	8.57 J	6.32 J	3.24 J
N-Nitrosodiphenylamine	20	µg/L	ND	ND	4.85 J	1.08 J	1.39 J	ND	ND	1.79 J	1.05 J	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	8.68 J	2.94 J	1.35 J	0.89 J	0.82 J	3.55 J	1.25 J	0.99 J	ND
TICs*	500	µg/L	11.0	270.0	**722.0**	269.0	240.0	168.0	144.0	330.0	261.0	142.0	84.0
Metals													
Arsenic	8	µg/L	ND	3.9 ER	6.76	6.39	**16.7**	ND	6.3 ER	**11.9**	5.78 ER	6.9 ER	NA
Barium	2000	µg/L	33.3 ER	7.19	7.34	18.0	20.4 ER	17.4 ER	16.3 ER	11.7 ER	12.9 ER	13.3 ER	NA
Beryllium	20	µg/L	ND	0.155 ER	0.0578 ER	0.408 ER	0.705 ER	ND	ND	ND	ND	ND	NA
Cadmium	4	µg/L	ND	1.07 ER	0.803 ER	0.576 ER	ND	ND	ND	2.25 ER	2.11 ER	2.41 ER	NA
Chromium III	100	µg/L	1.88 ER	ND	1.01 ER	5.36	12.5 ER	ND	ND	5.2 ER	6.09 ER	7.94 ER	NA
Copper	1000	µg/L	3.02 ER	ND	ND	1.83 ER	10.7 ER	ND	ND	ND	ND	ND	NA
Lead	10	µg/L	ND	0.924 ER	0.845 ER	2.93 ER	ND	5.04 ER	6.46 ER	ND	ND	ND	NA
Nickel	100	µg/L	8.24 ER	ND	ND	1.02 ER	ND	ND	ND	ND	ND	ND	NA
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o*-xylene and *m,p*-xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-5
Ground Water Sampling Results
Site 886 MW05 (Feb03-Oct05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	10	11	12
WELL ID			886MW05	886MW05	886MW05
Date Collected			4/6/2005	7/12/2005	10/19/2005
ANALYTE / Lab ID			50187.08	50342.08	50537.08
VOCs					
Acetone	700	µg/L	ND	ND	5.89
Ethylbenzene	700	µg/L	0.29 J	0.74 J	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND
TICs*	500	µg/L	ND	137.0	ND
TPH					
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA
SVOCs					
2-Methylnaphthalene	NLE	µg/L	ND	1.31 J	ND
Acenaphthene	400	µg/L	ND	2.95 J	ND
Anthracene	2000	µg/L	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	1.96 J	ND
Diethyl phthalate	5000	µg/L	ND	ND	ND
Fluorene	300	µg/L	ND	3.11 J	ND
Naphthalene	NLE	µg/L	1.03 J	5.95 J	ND
N-Nitrosodiphenylamine	20	µg/L	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	1.61 J	ND
TICs*	500	µg/L	4.0	260.0	76.0
Metals					
Arsenic	8	µg/L	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA
Chromium III	100	µg/L	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA
Lead	10	µg/L	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-5
Ground Water Sampling Results
Site 886 MW05 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	14	15	16	17	18
WELL ID			886MW05	886MW05	886MW05	886MW05	886MW05	886MW05
Date Collected			1/25/2006	4/11/2006	7/11/2006	11/14/2006	1/26/2007	4/19/2007
ANALYTE / Lab ID			60052.06	60147.08	60307.08	60496.08	70030.06	70142.08
VOCs								
Acetone	6000	µg/L	5.89	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	0.36 J	ND	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	24.0	9.0	ND	4.0	ND
SVOCs								
2-Methylnaphthalene	100	µg/L	ND	ND	ND	2.22 J	5.79 J	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	1.22 J	ND
Anthracene	2000	µg/L	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	ND	ND	ND	0.82 J	ND
Diethyl phthalate	5000	µg/L	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	ND	ND	ND	ND	1.17 J	ND
Naphthalene	300	µg/L	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	ND	ND	ND	ND	ND
Phenanthrene	100	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	5.0	5.0	ND	ND	9.0	52.0

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval
letter dated November 2004.

Table 5-5
Ground Water Sampling Results
Site 886 MW05 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	22	23	24
WELL ID			886MW05	886MW05	886MW05	886MW05	886MW05	886MW05
Date Collected			8/2/2007	10/12/2007	3/28/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.08	70388.08	80099.06	89211.08	80333.08	80409.08
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	ND	ND	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	28.0	35.0	6.0	23.0	17.0	60.0
TPH								
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA
SVOCs								
2-Methylnaphthalene	NLE	µg/L	13.7	24.29	ND	ND	ND	11
Acenaphthene	400	µg/L	ND	2.88 J	ND	ND	ND	ND
Anthracene	2000	µg/L	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	2.05 J	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	ND	3.29 J	ND	ND	ND	ND
Naphthalene	300	µg/L	1.15 J	1.02 J	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	1.44 J	ND	ND	ND	ND
TICs*	500	µg/L	21.0	100.0	10.1	34.0	90.0	67.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-6
Ground Water Sampling Results
Site 886 RW01 (Feb03-Jan05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	2	3	4	5	5	9	9
WELL ID			886RW01	886RW01	886RW01	886RW01	886RW01	RW01 Duplicate	886RW01	RW01 Duplicate
Date Collected			2/5/2003	5/22/2003	7/22/2003	10/14/2003	2/3/2004	2/3/2004	1/6/2005	1/6/2005
ANALYTE / Lab ID			30061.08	30249.09	30384.09	30648.09	40090.04	40090.03	50006.04	50006.03
VOCs										
Acetone	700	µg/L	40.9	ND	ND	ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	**7.95**	**4.27**	**3.41**	**3.35**	**3.35**	**1.3 J**	**1.24 J**
cis - 1,2- Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	0.32 J
Ethylbenzene	700	µg/L	ND	8.51	2.88	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	**30039.7**	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	6.82	1.27 J	ND	0.49 J	0.46 J	ND	ND
TICs*	500	µg/L	**4130.0**	100.0	246.0	96.0	161.0	116.0	88.0	81.0
TPH										
Total Petroleum Hydrocarbons	NLE	mg/L	1.3	NA	NA	NA	2.5	2.6	NA	NA
SVOCs										
2-Methylnaphthalene	NLE	µg/L	3.37 J	NA	NA	NA	20.39	22.44	35.02	38.61
4-Methylphenol	NLE	µg/L	ND	NA	NA	NA	ND	ND	ND	ND
Acenaphthene	400	µg/L	1.8 J	NA	NA	NA	2.38 J	2.58 J	2.26 J	2.47 J
Bis(2-ethylhexyl) phthalate	30	µg/L	**4.7 J**	NA	NA	NA	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	NA	NA	NA	3.24 J	3.46 J	3.09 J	3.26 J
Diethyl phthalate	5000	µg/L	ND	NA	NA	NA	ND	ND	2.66 JB	3.01 JB
Fluorene	300	µg/L	1.73 J	NA	NA	NA	3.07 J	3.38 J	2.98 J	3.20 J
Naphthalene	NLE	µg/L	ND	NA	NA	NA	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	NA	NA	NA	2.59 J	2.76 J	2.10 J	2.14 J
TICs*	500	µg/L	311.0	NA	NA	NA	256.0	276.0	247.0	268.0
Pest/PCBs										
4,4'-DDE	0.1	µg/L	ND	NA	NA	NA	NA	NA	NA	NA
delta-BHC	NLE	µg/L	0.03	NA	NA	NA	NA	NA	NA	NA
gamma-BHC	0.2	µg/L	ND	NA	NA	NA	NA	NA	NA	NA
Metals										
Arsenic	8	µg/L	ND	NA	NA	NA	**18.3**	**17.1**	NA	NA
Barium	2000	µg/L	35.9 ER	NA	NA	NA	36.9 ER	36.7	NA	NA
Beryllium	20	µg/L	ND	NA	NA	NA	ND	ND	NA	NA
Cadmium	4	µg/L	ND	NA	NA	NA	ND	ND	NA	NA
Chromium III	100	µg/L	6.64 ER	NA	NA	NA	ND	ND	NA	NA
Copper	1000	µg/L	2.53 ER	NA	NA	NA	ND	ND	NA	NA
Lead	10	µg/L	ND	NA	NA	NA	ND	ND	NA	NA
Nickel	100	µg/L	3.43 ER	NA	NA	NA	ND	ND	NA	NA
Selenium	50	µg/L	ND	NA	NA	NA	ND	ND	NA	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval
letter dated November 2004.

Table 5-6
Ground Water Sampling Results
Site 886 RW01 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	14	16	16	17	18	18
WELL ID			886RW01	886RW01	886RW01	RW01 Duplicate	886RW01	886RW01	RW01 Duplicate
Date Collected			1/24/2006	4/11/2006	11/14/006	11/14/006	1/25/2007	4/18/2007	4/18/2007
ANALYTE / Lab ID			60045.06	60147.09	60496.09	60496.03	70029.06	70141.04	70141.03
VOCs									
Acetone	6000	μg/L	3.95	NA	1.08 J	1.70 J	ND	ND	ND
Benzene	1	μg/L	0.61 J	NA	**1.17 J**	**1.24 J**	**1.09 J**	ND	ND
cis - 1,2- Dichloroethene	70	μg/L	ND	NA	ND	ND	ND	ND	ND
Ethylbenzene	700	μg/L	3.62	NA	2.15	2.02	1.51 J	1.78 J	1.56 J
Methyl ethyl ketone (2-Butanone)	300	μg/L	ND	NA	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	μg/L	ND	NA	0.63 J	0.62 J	2.06	ND	ND
Toluene	1000	μg/L	ND	NA	ND	ND	ND	ND	ND
Xylenes (Total)	1000	μg/L	0.46 J	NA	0.78 J	0.79 J	0.37 J	ND	ND
TICs*	500	μg/L	169.0	NA	72.0	42.0	102.0	7.0	ND
TPH									
Total Petroleum Hydrocarbons	NLE	mg/L	NA	10.93	NA	NA	NA	NA	NA
SVOCs									
2-Methylnaphthalene	NLE	μg/L	55.44	NA	10.52	13.91	22.7	ND	ND
4-Methylphenol	NLE	μg/L	ND	ND	ND	1.05 J	ND	ND	ND
Acenaphthene	400	μg/L	4.69 J	NA	2.62 J	3.15 J	3.53 J	ND	ND
Bis(2-ethylhexyl) phthalate	3	μg/L	ND	NA	ND	ND	ND	ND	ND
Dibenzofuran	NLE	μg/L	3.40 J	NA	2.18 J	ND	3.33 J	ND	ND
Diethyl phthalate	6000	μg/L	ND	NA	ND	ND	ND	ND	ND
Fluorene	300	μg/L	5.98 J	NA	3.04 J	3.72 J	4.01 J	ND	ND
Naphthalene	300	μg/L	3.66 J	NA	ND	1.41 J	1.23 J	ND	ND
Phenanthrene	NLE	μg/L	5.80 J	NA	2.04 J	2.70 J	2.17 J	ND	ND
TICs*	500	μg/L	**732.0**	NA	238.0	309.0	294.0	65.0	110.0

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb
Total xylenes=∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were
discontinued as per NJDEP approval letter dated

Table 5-6
Ground Water Sampling Results
Site 886 RW01 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	22	23	24
WELL ID			886RW01	886RW01	886RW01	886RW01	886RW01	886RW01
Date Collected			8/2/2007	10/11/2007	3/27/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.09	70384.04	80098.06	89211.09	80333.09	80409.09
VOCs								
Acetone	6000	µg/L	ND	ND	4.16	8.98	ND	ND
Benzene	1	µg/L	0.65 J	**1.75 J**	0.67 J	**1.14**	0.87	0.56
cis - 1,2- Dichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	5.81	9.0	3.34	3.05	1.84
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	0.93 J	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	µg/L	ND	3.86	ND	10.14	4.3	4.83
Toluene	600	µg/L	ND	ND	ND	ND	ND	0.27
Xylenes (Total)	NLE	µg/L	ND	1.92 J	2.09 J	1.02	1.16	0.97
TICs*	500	µg/L	**519.0**	93.0	333.0	271.0	169.0	159.0
TPH								
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA
SVOCs								
2-Methylnaphthalene	NLE	µg/L	35.03	18.28	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	3.21 J	3.59 J	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	2.43 J	2.84 J	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	3.60 J	4.04 J	ND	ND	ND	ND
Naphthalene	300	µg/L	1.67 J	1.34 J	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	2.71 J	2.91 J	ND	ND	ND	ND
TICs*	500	µg/L	313.0	301.0	**516.23**	30.00	135.00	391.00

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes=∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-7
Ground Water Sampling Results
Site 886 RW02 (Feb03-Jan05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	5	9
WELL ID			886RW02	886RW02	886RW02
Date Collected			2/5/2003	2/3/2004	1/6/2005
ANALYTE / Lab ID			30061.07	40090.04	50006.05
VOCs					
Benzene	1	µg/L	**2.16**	**2.14**	**1.57 J**
Ethylbenzene	700	µg/L	2.13	1.48 J	0.99 J
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND	ND	3.11
Xylenes (Total)	1000	µg/L	2.12 J	1.55 J	1.42 J
TICs*	500	µg/L	150.0	160.0	65.0
TPH					
Total Petroleum Hydrocarbons	NLE	mg/L	1.4	1.8	NA
SVOCs					
2-Methylnaphthalene	NLE	µg/L	37.63	6.94 J	12.52
Acenaphthene	400	µg/L	1.89 J	2.01 J	2.45 J
Bis(2-ethylhexyl) phthalate	30	µg/L	2.07 J	ND	ND
Dibenzofuran	NLE	µg/L	ND	2.48 J	3.15 J
Diethyl phthalate	5000	µg/L	ND	ND	2.21 JB
Fluorene	300	µg/L	1.96 J	2.98 J	3.42 J
Naphthalene	NLE	µg/L	ND	ND	ND
Phenanthrene	NLE	µg/L	1.0 J	1.99 J	2.18 J
TICs*	500	µg/L	343.0	137.0	169.0
Pest/PCBs					
4,4'-DDE	0.1	µg/L	ND	NA	NA
delta-BHC	NLE	µg/L	0.1	NA	NA
gamma-BHC	0.2	µg/L	ND	NA	NA
Metals					
Arsenic	8	µg/L	ND	**12.0**	NA
Barium	2000	µg/L	42.2 ER	44.1 ER	NA
Beryllium	20	µg/L	ND	ND	NA
Cadmium	4	µg/L	0.581 ER	ND	NA
Chromium III	100	µg/L	2.53 ER	ND	NA
Copper	1000	µg/L	ND	ND	NA
Lead	10	µg/L	ND	ND	NA
Nickel	100	µg/L	4.97 ER	ND	NA
Selenium	50	µg/L	ND	ND	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter

Table 5-7
Ground Water Sampling Results
Site 886 RW02 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	13	14	16	17	17	18
WELL ID			886RW02	RW02 Duplicate	886RW02	886RW02	886RW02	RW02 Duplicate	886RW02
Date Collected			1/24/2006	1/24/2006	4/11/2006	11/14/2006	1/25/2007	1/25/2007	4/18/2007
ANALYTE / Lab ID			60045.07	60045.03	60147.1	60496.1	70029.07	70029.03	70141.05
VOCs									
Benzene	1	µg/L	0.83 J	0.78 J	NA	0.77 J	0.95 J	0.92 J	0.43 J
Ethylbenzene	700	µg/L	0.66 J	0.49 J	NA	0.61 J	0.87 J	0.82 J	0.53 J
Methyl *tert* -butyl ether (MTBE)	70	µg/L	0.64 J	0.57 J	NA	0.83 J	2.33	2.08	1.45 J
Xylenes (Total)	1000	µg/L	ND	ND	NA	0.76 J	0.55 J	0.55 J	ND
TICs*	500	µg/L	46.0	37.0	NA	29.0	11.0	11.0	ND
TPH									
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	0.36 ER	NA	NA	NA	NA
SVOCs									
2-Methylnaphthalene	NLE	µg/L	1.53 J	1.71 J	NA	ND	4.76 J	3.57 J	9.26 J
Acenaphthene	400	µg/L	2.25 J	2.30 J	NA	ND	1.56 J	1.22 J	1.04 J
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	NA	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	2.44 J	2.56 J	NA	ND	1.56 J	1.21 J	1.06 J
Diethyl phthalate	6000	µg/L	ND	ND	NA	ND	ND	ND	ND
Fluorene	300	µg/L	2.73 J	2.84 J	NA	ND	1.91 J	1.44 J	1.11 J
Naphthalene	300	µg/L	ND	ND	NA	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	1.0 J	1.05 J	NA	ND	ND	ND	ND
TICs*	500	µg/L	99.0	106.0	NA	50.0	51.0	34.0	56.0

Notes:
** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were

Table 5-7
Ground Water Sampling Results
Site 886 RW02 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	22	23	23	24
WELL ID			886RW02	886RW02	886RW02	886RW02	886RW02	RW02 Duplicate	886RW02
Date Collected			8/2/2007	10/11/2007	3/27/2008	6/25/2008	9/16/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.1	70384.05	80098.07	89211.1	80333.1	80333.03	80409.1
VOCs									
Benzene	1	µg/L	0.79 J	0.31 J	0.84 J	ND	ND	ND	0.3
Ethylbenzene	700	µg/L	ND	ND	0.46 J	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	µg/L	4.14	2.75	5.03	1.32	5.26	5.62	2.9
Xylenes (Total)	1000	µg/L	ND	ND	0.88 J	ND	ND	ND	ND
TICs*	500	µg/L	77.0	35.0	97.0	ND	46.0	30.0	36.0
TPH									
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA	NA
SVOCs									
2-Methylnaphthalene	NLE	µg/L	16.05	18.48	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	2.0 J	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	1.8 J	ND	ND	ND	ND	ND	ND
Naphthalene	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	71.0	99.0	51.08	14.00	132.00	**185.00**	50.00

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)

B-Compound detected in the sample and its associated blank sample

NA-Not Analyzed

NS- Not Sampled.

NLE-No Limit Established

ER-Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and

Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.

Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-8
Ground Water Sampling Results
Site 886 RW03 (Feb03-Jan05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	5	9
WELL ID			886RW03	886RW03	886RW03
Date Collected			2/5/2003	2/3/2004	1/6/2005
ANALYTE / Lab ID			30061.04	40090.06	50006.08
VOCs					
Acetone	700	μg/L	3.08	ND	ND
Benzene	1	μg/L	0.77 J	ND	ND
Chloroform	6	μg/L	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	μg/L	ND	ND	ND
TICs*	500	μg/L	161.0	116.0	4.0
TPH					
Total Petroleum Hydrocarbons	NLE	mg/L	1.5	ND	NA
SVOCs					
2-Methylnaphthalene	NLE	μg/L	75.88	ND	ND
Acenaphthene	400	μg/L	2.82 J	ND	ND
Bis(2-ethylhexyl) phthalate	30	μg/L	ND	ND	ND
Dibenzofuran	NLE	μg/L	1.96 J	ND	ND
Diethyl phthalate	5000	μg/L	ND	ND	1.67 JB
Fluorene	300	μg/L	3.11 J	ND	ND
Naphthalene	NLE	μg/L	5.66 J	ND	ND
N-Nitrosodiphenylamine	20	μg/L	1.89 J	ND	ND
Phenanthrene	NLE	μg/L	2.08 J	ND	ND
TICs*	500	μg/L	**545.0**	4.0	6.0
Pest/PCBs					
4,4'-DDE	0.1	μg/L	ND	NA	NA
delta-BHC	NLE	μg/L	0.59	NA	NA
gamma-BHC	0.2	μg/L	ND	NA	NA
Metals					
Arsenic	8	μg/L	ND	ND	NA
Barium	2000	μg/L	42.7 ER	48.9 ER	NA
Beryllium	20	μg/L	ND	ND	NA
Cadmium	4	μg/L	0.662 ER	ND	NA
Chromium III	100	μg/L	1.03 ER	15.7 ER	NA
Copper	1000	μg/L	ND	ND	NA
Lead	10	μg/L	ND	ND	NA
Nickel	100	μg/L	7 ER	ND	NA
Selenium	50	μg/L	ND	ND	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were

Table 5-8
Ground Water Sampling Results
Site 886 RW03 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	14	16	17	18
WELL ID			886RW03	886RW03	886RW03	886RW03	886RW03
Date Collected			1/24/2006	4/11/2006	11/14/2006	1/25/2007	4/18/2007
ANALYTE / Lab ID			60045.08	60147.11	60496.11	70029.08	70141.06
VOCs							
Acetone	6000	µg/L	ND	NA	ND	ND	ND
Benzene	1	µg/L	ND	NA	ND	ND	ND
Chloroform	70	µg/L	ND	NA	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	µg/L	ND	NA	ND	ND	ND
TICs*	500	µg/L	ND	NA	ND	ND	ND
TPH							
Total Petroleum Hydrocarbons	NLE	mg/L	NA	ND	NA	NA	NA
SVOCs							
2-Methylnaphthalene	NLE	µg/L	ND	NA	ND	ND	ND
Acenaphthene	400	µg/L	ND	NA	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	NA	ND	ND	1.91 J
Dibenzofuran	NLE	µg/L	ND	NA	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	NA	ND	ND	ND
Fluorene	300	µg/L	ND	NA	ND	ND	ND
Naphthalene	300	µg/L	ND	NA	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	NA	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	NA	ND	ND	ND
TICs*	500	µg/L	ND	NA	ND	ND	20

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-8
Ground Water Sampling Results
Site 886 RW03 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	22	23	24
WELL ID			886RW03	886RW03	886RW03	886RW03	886RW03	886RW03
Date Collected			8/2/2007	10/11/2007	3/27/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.11	70384.06	80098.08	89211.11	80333.11	80409.11
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	µg/L	ND	1.71 J	ND	ND	ND	ND
TICs*	500	µg/L	ND	7.0	ND	ND	12.0	ND
TPH								
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA
SVOCs								
2-Methylnaphthalene	NLE	µg/L	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	ND	ND	ND	ND	ND	ND
Naphthalene	300	µg/L	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	7.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes=∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-9
Ground Water Sampling Results
Site 886 RW04 (Feb03-Jan05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	5	9
WELL ID			886RW04	886RW04	886RW04
Date Collected			2/5/2003	2/3/2004	1/6/2005
ANALYTE / Lab ID			30061.05	40090.07	50006.07
VOCs					
Acetone	700	µg/L	1.5 J	ND	ND
Benzene	1	µg/L	0.67 J	ND	ND
Chloroform	6	µg/L	0.47 J	ND	ND
Ethylbenzene	700	µg/L	0.69 J	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND	ND	7.51
Toluene	1000	µg/L	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND
TICs*	500	µg/L	139.0	52.0	29.0
TPH					
Total Petroleum Hydrocarbons	NLE	mg/L	1.5	1.5	NA
SVOCs					
2-Methylnaphthalene	NLE	µg/L	31.36	ND	45.56
4-Methylphenol	NLE	µg/L	ND	ND	1.13 J
Acenaphthene	400	µg/L	2.45 J	ND	4.40 J
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND
Dibenzofuran	NLE	µg/L	2.08 J	ND	3.55 J
Diethyl phthalate	5000	µg/L	ND	ND	2.02 JB
Fluorene	300	µg/L	3.11 J	1.31 J	5.87 J
Naphthalene	NLE	µg/L	7.44 J	ND	2.50 J
N-Nitrosodiphenylamine	20	µg/L	2.49 J	ND	ND
Phenanthrene	NLE	µg/L	2.21 J	ND	8.46 J
TICs*	500	µg/L	319.0	50.0	**789.0**
Pest/PCBs					
4,4'-DDE	0.1	µg/L	0.01 J	NA	NA
delta-BHC	NLE	µg/L	0.02	NA	NA
gamma-BHC	0.2	µg/L	ND	NA	NA
Metals					
Arsenic	8	µg/L	ND	**14.1**	NA
Barium	2000	µg/L	42 ER	79 ER	NA
Beryllium	20	µg/L	ND	ND	NA
Cadmium	4	µg/L	ND	ND	NA
Chromium III	100	µg/L	1.58 ER	29.3 ER	NA
Copper	1000	µg/L	5.37 ER	14.6 ER	NA
Lead	10	µg/L	ND	7.65 ER	NA
Nickel	100	µg/L	5.32 ER	7.61 ER	NA
Selenium	50	µg/L	5.11 ER	ND	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-9
Ground Water Sampling Results
Site 886 RW04 (Apr06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	14	16	17	18
WELL ID			886RW04	886RW04	886RW04	886RW04
Date Collected			4/11/2006	11/14/2006	1/25/2007	4/18/2007
ANALYTE / Lab ID			60147.12	60496.12	70029.09	70141.07
VOCs						
Acetone	6000	µg/L	NA	ND	ND	ND
Benzene	1	µg/L	NA	ND	ND	ND
Chloroform	70	µg/L	NA	ND	ND	ND
Ethylbenzene	700	µg/L	NA	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	µg/L	NA	1.66 J	1.93 J	2.52
Toluene	1000	µg/L	NA	ND	ND	ND
Xylenes (Total)	1000	µg/L	NA	ND	ND	ND
TICs*	500	µg/L	NA	13.0	7.0	ND
TPH						
Total Petroleum Hydrocarbons	NLE	mg/L	12.4	NA	NA	NA
SVOCs						
2-Methylnaphthalene	NLE	µg/L	NA	12.63	3.64 J	ND
4-Methylphenol	NLE	µg/L	NA	1.05 J	ND	ND
Acenaphthene	400	µg/L	NA	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	ND	ND	1.33 J
Dibenzofuran	NLE	µg/L	NA	ND	ND	ND
Diethyl phthalate	6000	µg/L	NA	ND	ND	ND
Fluorene	300	µg/L	NA	1.95 J	ND	ND
Naphthalene	300	µg/L	NA	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	NA	3.68 J	ND	ND
Phenanthrene	NLE	µg/L	NA	1.54 J	ND	ND
TICs*	500	µg/L	NA	419.0	118.0	25.0

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-9
Ground Water Sampling Results
Site 886 RW04 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	20	21	22	23	24
WELL ID			886RW04	886RW04	RW04 Duplicate	886RW04	886RW04	886RW04	886RW04
Date Collected			8/2/2007	10/11/2007	10/11/2007	3/27/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.12	70384.07	70384.03	80098.09	89211.12	80333.12	80409.12
VOCs									
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	ND	ND	ND	ND	0.28	ND
Methyl *tert*-butyl ether (MTBE)	70	µg/L	2.22	4.71	4.78	15.92	11.48	6.65	4.62
Toluene	600	µg/L	ND	ND	ND	ND	ND	0.31	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND	ND	0.18	0.65	ND
TICs*	500	µg/L	102.0	23.0	14.0	97.0	81.0	72.0	59.0
TPH									
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA	NA
SVOCs									
2-Methylnaphthalene	NLE	µg/L	15.63	7.14 J	10.23	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	1.20 J	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	2.68 J	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	2.30 J	ND	ND	ND	ND	ND	ND
Naphthalene	300	µg/L	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	201.0	62.0	106.0	196.46	ND	339.0	6.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compunds, can not exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o*-xylene and *m,p*-xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter dated November 2004.

Table 5-10
Ground Water Sampling Results
Site 886 RW05 (Feb03-Jan05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	1	5	9
WELL ID			886RW05	RW05 Duplicate	886RW05	886RW05
Date Collected			2/5/2003	2/5/2003	2/3/2004	1/6/2005
ANALYTE / Lab ID			30061.06	30061.03	40090.08	50006.06
VOCs						
Acetone	700	µg/L	3.86	2.96	ND	ND
Benzene	1	µg/L	**1.23 J**	**1.09 J**	0.48 J	ND
Ethylbenzene	700	µg/L	2.32	2.16	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	1.16 J	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND	ND	ND	0.92 J
Xylenes (Total)	1000	µg/L	2.26 J	2.11 J	0.68 J	ND
TICs*	500	µg/L	198.0	142.0	70.0	14.0
TPH						
Total Petroleum Hydrocarbons	NLE	mg/L	2.0	2.0	1.9	NA
SVOCs						
2-Methylnaphthalene	NLE	µg/L	60.8	50.3	ND	ND
Acenaphthene	400	µg/L	5.64 J	4.6 J	2.26 J	ND
Acenaphthylene	100	µg/L	ND	1.08 J	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	1.3 J	1.28 J	ND	ND
Dibenzofuran	NLE	µg/L	4.92 J	4.8 J	1.96 J	ND
Diethyl phthalate	5000	µg/L	ND	ND	ND	2.28 JB
Fluorene	300	µg/L	6.37 J	5.64 J	2.12 J	ND
Naphthalene	NLE	µg/L	13.36	12.08	2.47 J	ND
N-Nitrosodiphenylamine	20	µg/L	1.05 J	ND	ND	ND
Phenanthrene	NLE	µg/L	4.7 J	4.89 J	ND	ND
TICs*	500	µg/L	**513.0**	**506.0**	149.0	8.0
Pest/PCBs						
4,4'-DDE	0.1	µg/L	ND	ND	NA	NA
delta-BHC	NLE	µg/L	0.07	0.04	NA	NA
gamma-BHC	0.2	µg/L	ND	ND	NA	NA
Metals						
Arsenic	8	µg/L	ND	ND	**13.9**	NA
Barium	2000	µg/L	24.5 ER	47.9 ER	31.5 ER	NA
Beryllium	20	µg/L	ND	ND	ND	NA
Cadmium	4	µg/L	0.609 ER	0.6 ER	ND	NA
Chromium III	100	µg/L	0.63 ER	1.3 ER	ND	NA
Copper	1000	µg/L	ND	3 ER	ND	NA
Lead	10	µg/L	ND	1	ND	NA
Nickel	100	µg/L	ND	ND	ND	NA
Selenium	50	µg/L	ND	ND	ND	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-10
Ground Water Sampling Results
Site 886 RW05 (Apr06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	14	16	17	18
WELL ID			886RW05	886RW05	886RW05	886RW05	886RW05
Date Collected			1/24/2006	4/11/2006	11/14/2006	1/25/2007	4/18/2007
ANALYTE / Lab ID			60045.09	60147.13	60496.13	70029.1	70141.08
VOCs							
Acetone	6000	µg/L	ND	NA	ND	ND	ND
Benzene	1	µg/L	ND	NA	ND	ND	ND
Ethylbenzene	700	µg/L	ND	NA	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	NA	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	µg/L	ND	NA	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	NA	ND	ND	ND
TICs*	500	µg/L	13.0	NA	ND	ND	ND
TPH							
Total Petroleum Hydrocarbons	NLE	mg/L	NA	0.18 ER	NA	NA	NA
SVOCs							
2-Methylnaphthalene	NLE	µg/L	ND	NA	ND	2.22 J	ND
Acenaphthene	400	µg/L	ND	NA	ND	ND	ND
Acenaphthylene	100	µg/L	ND	NA	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	NA	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	NA	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	NA	ND	ND	ND
Fluorene	300	µg/L	ND	NA	ND	ND	ND
Naphthalene	300	µg/L	ND	NA	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	NA	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	NA	ND	ND	ND
TICs*	500	µg/L	17.0	NA	51	ND	4

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the
* TICs = Tentatively Identified Compounds, cannot
Total xylenes=∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per

Table 5-10
Ground Water Sampling Results
Site 886 RW05 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	22	23	24
WELL ID			886RW05	886RW05	886RW05	886RW05	886RW05	886RW05
Date Collected			8/2/2007	10/11/2007	3/27/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.13	70384.08	80098.1	89211.13	80333.13	80409.13
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	µg/L	ND	ND	2.36	ND	0.36	0.33
Xylenes (Total)	1000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	4.0	ND	4.0	ND
TPH								
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA
SVOCs								
2-Methylnaphthalene	NLE	µg/L	ND	3.53 J	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	ND	ND
Acenaphthylene	100	µg/L	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	ND	ND	ND	ND	ND	ND
Naphthalene	300	µg/L	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	20.0	10.0	ND	60.0	13.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-11
Ground Water Sampling Results
Site 886 RW06 (Feb03-Jan05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	5	9
WELL ID			886RW06	886RW06	886RW06
Date Collected			2/12/2003	2/3/2004	1/7/2005
ANALYTE / Lab ID			30066.05	40090.09	50009.04
VOCs					
Acetone	700	µg/L	2.05	ND	ND
TICs*	500	µg/L	99.0	16.0	ND
TPH					
Total Petroleum Hydrocarbons	NLE	mg/L	1.7	1.2	NA
SVOCs					
2-Methylnaphthalene	NLE	µg/L	40.39	ND	ND
Acenaphthene	400	µg/L	2.27 J	ND	ND
Bis(2-ethylhexyl)phthalate	30	µg/L	ND	ND	ND
Diethyl phthalate	5000	µg/L	ND	ND	1.28 JB
Fluorene	300	µg/L	2.84 J	ND	ND
Naphthalene	NLE	µg/L	15.94	ND	ND
Phenanthrene	NLE	µg/L	1.8 J	ND	ND
TICs*	500	µg/L	313.0	ND	6.0
Metals					
Arsenic	8	µg/L	ND	5.19 ER	NA
Barium	2000	µg/L	37.2 ER	44.9 ER	NA
Beryllium	20	µg/L	ND	ND	NA
Cadmium	4	µg/L	ND	ND	NA
Chromium III	100	µg/L	1.17 ER	21.2 ER	NA
Copper	1000	µg/L	2.81 ER	5.9 ER	NA
Lead	10	µg/L	1.23 ER	5.43 ER	NA
Nickel	100	µg/L	6.35 ER	ND	NA
Selenium	50	µg/L	ND	ND	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-11
Ground Water Sampling Results
Site 886 RW06 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	14	16	17	18
WELL ID			886RW06	886RW06	886RW06	886RW06	886RW06
Date Collected			1/25/2006	4/11/2006	11/15/2006	1/26/2007	4/18/2007
ANALYTE / Lab ID			60052.07	60147.14	60498.04	70030.07	70141.09
VOCs							
Acetone	6000	µg/L	ND	NA	ND	ND	ND
TICs*	500	µg/L	ND	NA	ND	ND	ND
TPH							
Total Petroleum Hydrocarbons	NLE	mg/L	NA	ND	NA	NA	NA
SVOCs							
2-Methylnaphthalene	NLE	µg/L	ND	NA	ND	ND	ND
Acenaphthene	400	µg/L	ND	NA	ND	ND	ND
Bis(2-ethylhexyl)phthalate	3	µg/L	ND	NA	1.34 J	ND	ND
Diethyl phthalate	6000	µg/L	ND	NA	ND	ND	ND
Fluorene	300	µg/L	ND	NA	ND	ND	ND
Naphthalene	300	µg/L	ND	NA	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	NA	ND	ND	ND
TICs*	500	µg/L	ND	NA	15.0	ND	ND

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-11
Ground Water Sampling Results
Site 886 RW06 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	22	23	24
WELL ID			886RW06	886RW06	886RW06	886RW06	886RW06	886RW06
Date Collected			8/2/2007	10/11/2007	3/28/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.14	70384.09	80099.07	89211.14	80333.14	80409.14
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND
TPH								
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA
SVOCs								
2-Methylnaphthalene	NLE	µg/L	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	3	µg/L	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	ND	ND	ND	ND	ND	ND
Naphthalene	300	µg/L	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	17.0	ND	ND	100.0	37.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes=∑ of *o*-xylene and *m,p*-xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-12
Ground Water Sampling Results
Site 886 RW07 (Feb03-Jan05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	5	9
WELL ID			886RW07	886RW07	886RW07
Date Collected			2/12/2003	2/3/2004	1/7/2005
ANALYTE / Lab ID			30066.04	40090.1	50009.05
VOCs					
Acetone	700	µg/L	6.52	ND	ND
Benzene	1	µg/L	**1.17 J**	ND	ND
Ethylbenzene	700	µg/L	6.59	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	ND
Methyl *tert* -butyl ether (MTBE)	NLE	µg/L	ND	ND	ND
Toluene	1000	µg/L	1.45 J	ND	ND
Xylenes (Total)	1000	µg/L	5.23	ND	ND
TICs*	500	µg/L	121.0	5.0	ND
TPH					
Total Petroleum Hydrocarbons	NLE	mg/L	2.1	1.1	NA
SVOCs					
2-Methylnaphthalene	NLE	µg/L	59.97	ND	ND
Acenaphthene	400	µg/L	3.51 J	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	2.49 J	ND	ND
Dibenzofuran	NLE	µg/L	ND	ND	ND
Diethyl phthalate	5000	µg/L	1.15 J	ND	1.32 JB
Fluorene	300	µg/L	3.97 J	ND	ND
Naphthalene	NLE	µg/L	18.16	ND	ND
N-Nitrosodiphenylamine	20	µg/L	2.66 J	ND	ND
Phenanthrene	NLE	µg/L	4.29 J	ND	ND
TICs*	500	µg/L	**769.0**	ND	6.0
Metals					
Arsenic	8	µg/L	ND	**11.5**	NA
Barium	2000	µg/L	34.1 ER	28.6 ER	NA
Beryllium	20	µg/L	ND	ND	NA
Cadmium	4	µg/L	ND	ND	NA
Chromium III	100	µg/L	1.56 ER	26.4 ER	NA
Copper	1000	µg/L	4.17 ER	102 ER	NA
Lead	10	µg/L	1.25 ER	7.78 ER	NA
Nickel	100	µg/L	3.5 ER	ND	NA
Selenium	50	µg/L	ND	ND	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-12
Ground Water Sampling Results
Site 886 RW07 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	13	14	16	17	18
WELL ID			886RW07	RW07 Duplicate	886RW07	886RW07	886RW07	886RW07
Date Collected			1/25/2006	1/25/2006	4/11/2006	11/15/2006	1/26/2007	4/19/2007
ANALYTE / Lab ID			60052.08	60052.03	60147.15	60498.05	70030.08	70142.09
VOCs								
Acetone	6000	µg/L	ND	ND	NA	ND	ND	ND
Benzene	1	µg/L	ND	ND	NA	ND	ND	ND
Ethylbenzene	700	µg/L	ND	ND	NA	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	NA	ND	ND	ND
Methyl *tert*-butyl ether (MTBE)	70	µg/L	ND	ND	NA	ND	ND	ND
Toluene	1000	µg/L	ND	ND	NA	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	ND	NA	ND	ND	ND
TICs*	500	µg/L	ND	ND	NA	ND	ND	ND
TPH								
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	ND	NA	NA	NA
SVOCs								
2-Methylnaphthalene	NLE	µg/L	ND	ND	NA	10.8	ND	ND
Acenaphthene	400	µg/L	ND	ND	NA	1.30 J	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	NA	ND	1.35 J	ND
Dibenzofuran	NLE	µg/L	ND	ND	NA	1.18 J	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	NA	ND	ND	ND
Fluorene	300	µg/L	ND	ND	NA	1.59 J	ND	ND
Naphthalene	300	µg/L	ND	ND	NA	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	ND	NA	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	NA	ND	ND	ND
TICs*	500	µg/L	ND	5.0	NA	74.0	5.0	86.0

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb
Total xylenes= ∑ of *o*-xylene and *m,p*-xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per

Table 5-12
Ground Water Sampling Results
Site 886 RW07 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	22	23	24
WELL ID			886RW07	886RW07	886RW07	886RW07	886RW07	886RW07
Date Collected			8/2/2007	10/12/2007	3/28/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.15	70388.09	80099.08	89211.15	80333.15	80409.15
VOCs								
Acetone	6000	µg/L	ND	ND	ND	2.33	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	ND	3.37	ND	ND
Methyl *tert* -butyl ether (MTBE)	70	µg/L	ND	ND	0.49 J	ND	0.37	0.36
Toluene	600	µg/L	ND	ND	ND	0.73	1.13	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	5.0	ND	ND	ND	ND
TPH								
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA
SVOCs								
2-Methylnaphthalene	NLE	µg/L	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	µg/L	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	3.0 J	ND	ND
Fluorene	300	µg/L	ND	ND	ND	ND	ND	ND
Naphthalene	300	µg/L	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	9.0	ND	ND	7.0	5.0	32.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes=∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-13
Ground Water Sampling Results
Site 886 RW08 (Feb03-Jan05)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	1	2	3	4	5	9
WELL ID			886RW08	886RW08	886RW08	886RW08	886RW08	886RW08
Date Collected			2/5/2003	5/22/2003	7/22/2003	10/14/2003	2/3/2004	1/7/2005
ANALYTE / Lab ID			30061.09	30249.1	30384.1	30648.1	40090.11	50009.06
VOCs								
Acetone	700	µg/L	42.88	ND	ND	ND	1.13 J	ND
Benzene	1	µg/L	ND	**2.13**	**1.86 J**	**1.83 J**	ND	ND
Ethylbenzene	700	µg/L	ND	6.6	10.83	2.44	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	**29510.7**	ND	ND	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	1.53 J	2.99 J	ND	ND	ND
TICs*	500	µg/L	**4080.0**	48.0	218.0	25.0	4.0	ND
TPH								
Total Petroleum Hydrocarbons	NLE	mg/L	9.4	NA	NA	NA	2.2	NA
SVOCs								
Acenaphthene	400	µg/L	3.53 J	NA	NA	NA	1.12 J	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	2.8 J	NA	NA	NA	ND	ND
Diethyl phthalate	5000	µg/L	ND	NA	NA	NA	ND	1.15 JB
Fluorene	300	µg/L	3.17 J	NA	NA	NA	1.71 J	ND
N-Nitrosodiphenylamine	20	µg/L	ND	NA	NA	NA	2.33 J	ND
Phenanthrene	NLE	µg/L	1.06 J	NA	NA	NA	2.0 J	ND
Pyrene	200	µg/L	ND	NA	NA	NA	ND	ND
TICs*	500	µg/L	**2333.0**	NA	NA	NA	169.0	6.0
Metals								
Arsenic	8	µg/L	ND	NA	NA	NA	**20.6**	NA
Barium	2000	µg/L	32 ER	NA	NA	NA	29 ER	NA
Beryllium	20	µg/L	ND	NA	NA	NA	ND	NA
Cadmium	4	µg/L	ND	NA	NA	NA	ND	NA
Chromium III	100	µg/L	5.08 ER	NA	NA	NA	25.6 ER	NA
Copper	1000	µg/L	ND	NA	NA	NA	ND	NA
Lead	10	µg/L	ND	NA	NA	NA	ND	NA
Nickel	100	µg/L	6.68 ER	NA	NA	NA	ND	NA
Selenium	50	µg/L	7.72 ER	NA	NA	NA	ND	NA

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

B-Compound detected in the sample and its associated blank sample
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less than the RL
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o*-xylene and *m,p*-xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval

Table 5-13
Ground Water Sampling Results
Site 886 RW08 (Jan06-Apr07)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	13	14	16	16	17	18
WELL ID			886RW08	886RW08	886RW08	RW08 Duplicate	886RW08	886RW08
Date Collected			1/25/2006	4/11/2006	11/15/2006	11/15/2006	1/26/2007	4/19/2007
ANALYTE / Lab ID			60052.09	60147.16	60498.06	60498.03	70030.09	70142.1
VOCs								
Acetone	6000	µg/L	ND	NA	ND	ND	ND	ND
Benzene	1	µg/L	ND	NA	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	NA	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	NA	ND	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	NA	ND	ND	ND	ND
TICs*	500	µg/L	ND	NA	ND	ND	ND	ND
TPH								
Total Petroleum Hydrocarbons	NLE	mg/L	NA	0.08 ER	NA	NA	NA	NA
SVOCs								
Acenaphthene	400	µg/L	ND	NA	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	NA	ND	ND	2.58 J	ND
Diethyl phthalate	6000	µg/L	ND	NA	ND	ND	ND	ND
Fluorene	300	µg/L	ND	NA	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	NA	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	NA	ND	ND	ND	ND
Pyrene	200	µg/L	ND	NA	ND	ND	ND	ND
TICs*	500	µg/L	ND	NA	21.0	7.0	24.0	72.0

Notes:

** - NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-C (November 7, 2005)

B-Compound detected in the sample and its associated blank sample

ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb
Total xylenes= ∑ of *o*-xylene and *m,p*-xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per

Table 5-13
Ground Water Sampling Results
Site 886 RW08 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	** NJDEP Criteria	Units	19	20	21	22	23	24
WELL ID			886RW08	886RW08	886RW08	886RW08	886RW08	886RW08
Date Collected			8/2/2007	10/12/2007	3/28/2008	6/25/2008	9/16/2008	11/12/2008
ANALYTE / Lab ID			70290.16	70388.1	80099.09	89211.16	80333.16	80409.16
VOCs								
Acetone	6000	µg/L	ND	6.11	2.01	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	µg/L	ND	ND	ND	ND	ND	ND
Xylenes (Total)	1000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND
TPH								
Total Petroleum Hydrocarbons	NLE	mg/L	NA	NA	NA	NA	NA	NA
SVOCs								
Acenaphthene	400	µg/L	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6000	µg/L	ND	ND	ND	ND	ND	ND
Fluorene	300	µg/L	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	µg/L	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	ND	ND	ND	ND	ND	ND
Pyrene	200	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	6.0	17.0	241.85	ND	36.0	34.0

Notes:

** - NJDEP Ground Water Quality Criteria as per modification of N.J.A.C. 7:9-C (July 27, 2007)
B-Compound detected in the sample and its associated blank sample
ND- Analyte Not Detected in sample.
NA-Not Analyzed
NS- Not Sampled.
NLE-No Limit Established
ER-Estimated Result
J-Estimated Concentration observed greater than the MDL and less
* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and
Total xylenes= ∑ of *o* -xylene and *m,p* -xylene.
Sampling for Metals and PCBs/Pesticides were discontinued as per NJDEP approval letter

Table 5-14
Ground Water Exceedance Summary
Site 886
Fort Monmouth, New Jersey

Analyte	GWQS	Field ID	Round	Date Collected	Lab Sample ID	Result
VOCs						
Benzene	**1**	886RW01	#2	5/22/2003	3024909	**7.95**
			#3	7/22/2003	3038409	**4.27**
			#4	10/14/2003	3064809	**3.41**
			#5	2/3/2004	4009004	**3.35**
			#5 (Duplicate)	2/3/2004	4009003	**3.35**
			#9	1/6/2005	5000604	**1.3 J**
			#9 (Duplicate)	1/6/2005	5000603	**1.24 J**
			#16	11/14/2006	6049609	**1.17 J**
			#16 (Duplicate)	11/14/2006	6049603	**1.24 J**
			#17	1/25/2007	7002906	**1.09 J**
			#20	10/11/2007	7038404	**1.75 J**
			#22	6/25/2008	8921109	**1.14**
		886RW02	#5	2/3/2004	4009004	**2.14**
			#9	1/6/2005	5000605	**1.57 J**
		886RW08	#2	5/22/2003	3024910	**2.13**
			#3	7/22/2003	3038410	**1.86 J**
			#4	10/14/2003	3064810	**1.83 J**
SVOCs						
Bis (2-ethylhexyl) phthalate	**3**	886MW04	#20	10/12/2007	7038807	**3.76 J**
Metals						
Aluminum	**200**	886MW01	#2	5/22/2003	3024904	**1320**
			#2 (Duplicate)	5/22/2003	3024903	**1110**
			#4	10/14/2003	3064804	**1100**
			#4 (Duplicate)	10/14/2003	3064803	**630**
			#6	5/25/2004	4038804	**234**
			#7	8/4/2004	4057804	**204**
			#7 (Duplicate)	8/4/2004	4057803	**348**
			#8	10/20/2004	4072804	**307**
Arsenic	**8**	886MW01	#2	5/22/2003	3024904	**46.9**
			#2 (Duplicate)	5/22/2003	3024903	**41.9**
			#3	7/22/2003	3038404	**8.22**
			#4	10/14/2003	3064804	**14.2**
			#4 (Duplicate)	10/14/2003	3064803	**12**
			#5	2/3/2004	4009404	**27.3**
			#6	5/25/2004	4038804	**12.7**
			#7	8/4/2004	4057804	**8.78**
			#7 (Duplicate)	8/4/2004	4057803	**21.5**
			#8	10/20/2004	4072804	**8.85**
		886MW02	#2	5/22/2003	3024905	**28.7**
			#3	7/22/2003	3038405	**43.9**
			#4	10/14/2003	3064805	**19.4**
			#5	2/3/2004	4009405	**11.9**
			#5 (Duplicate)	2/3/2004	4009403	**13.0**
			#6	5/25/2004	4038805	**14.4**
			#7	8/4/2004	4057805	**11.4**
			#8	10/20/2004	4072805	**9.84**

Table 5-14
Ground Water Exceedance Summary
Site 886
Fort Monmouth, New Jersey

Analyte	GWQS	Field ID	Round	Date Collected	Lab Sample ID	Result
Arsenic	**8**	886MW03	#3	7/22/2003	3038406	**9.32**
			#3 (Duplicate)	7/22/2003	3038403	**8.02**
			#4	10/14/2003	3064806	**10.8**
			#5	2/3/2004	4009406	**11.1**
			#6	5/25/2004	4038806	**18.5**
			#8	10/20/2004	4072806	**8.54**
		886MW05	#5	2/3/2004	4009408	**16.7**
			#7	8/4/2004	4057808	**11.9**
		886RW01	#5	2/3/2004	4009004	**18.3**
			#5 (Duplicate)	2/3/2004	4009003	**17.1**
		886RW02	#5	2/3/2004	4009004	**12**
		886RW04	#5	2/3/2004	4009007	**14.1**
		886RW05	#5	2/3/2004	4009008	**13.9**
		886RW07	#5	2/3/2004	4009010	**11.5**
		886RW08	#5	2/3/2004	4009011	**20.6**
Cadmium	**4**	886MW01	#2	5/22/2003	3024904	**4.16**
			#6	5/25/2004	4038804	**8.85**
		886MW02	#2	5/22/2003	3024905	**4.15**
			#3	7/22/2003	3038405	**4.32**
Lead	**10**	886MW01	#4	10/14/2003	3064804	**11.2**
			#6	5/25/2004	4038804	**11.5**
		886MW02	#5	2/3/2004	4009405	**13.7**
			#5 (Duplicate)	2/3/2004	4009403	**13.6**
		886MW03	#6	5/25/2004	4038806	**10.5**

All results are in micrograms per liter (µg/l).
VOCs = Volatile Organic Compounds.
J-Estimated Concentration observed greater than the method detection limit (MDL) and less than the reporting limit (RL)
GWQS-Ground Water Quality Standard

Table 5-15
VOC Tentatively Identified Compounds (TICs)
Site 886
Fort Monmouth, New Jersey

	Well:	886MW01	886MW02	886MW03	886MW04	886MW05	886RW01	886RW02	886RW03	886RW04	886RW05	886RW06	886RW07	886RW08
Round	**Date**													
2	**May-03**	39/5	ND	ND	ND	234/15	100/15	NS	NS	NS	NS	NS	NS	48/7
3	**Jul-03**	55/9	43/7	ND	ND	138/10	246/10	NS	NS	NS	NS	NS	NS	218/10
4	**Oct-03**	13/1	ND	ND	ND	79/12	96/14	NS	NS	NS	NS	NS	NS	25/5
5	**Feb-04**	32/5	9/2	ND	ND	76/10	161/10	160/10	116/10	52/6	70/9	16/3	5/1	4/1
6	**May-04**	68/10	28/6	3/1	ND	64/9	NS	NS	NS	NS	NS	NS	NS	NS
7	**Aug-04**	7/1	ND	ND	ND	91/10	NS	NS	NS	NS	NS	NS	NS	NS
8	**Oct-04**	108/10	51/3	ND	ND	125/10	NS	NS	NS	NS	NS	NS	NS	NS
9	**Jan-05**	55/9	10/1	ND	ND	19/4	88/10	65/10	4/1	29/7	14/3	ND	ND	ND
10	**Apr-05**	69/10	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
11	**Jul-05**	16/2	ND	ND	ND	137/10	NS	NS	NS	NS	NS	NS	NS	NS
12	**Oct-05**	68/9	14/1	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
13	**Jan-06**	107/10	ND	ND	ND	ND	169/10	46/7	ND	NS	13/3	ND	ND	ND
14	**Apr-06**	12/2	4/1	4/1	4/1	24/4	NA	NA	NA	NA	NA	NA	NA	NA
15	**Jul-06**	ND	6/1	ND	ND	9/2	NS	NS	NS	NS	NS	NS	NS	NS
16	**Nov-06**	11/2	3/1	ND	ND	ND	72/10	29/5	ND	13/3	ND	ND	ND	ND
17	**Jan-07**	54/7	ND	ND	ND	4/1	102/15	11/2	ND	7/2	ND	ND	ND	ND
18	**Apr-07**	13/2	ND	ND	ND	ND	7/2	ND	ND	ND	ND	ND	ND	ND
19	**Aug-07**	ND	ND	ND	ND	28/3	**519/15**	77/10	ND	102/11	ND	ND	ND	ND
20	**Oct-07**	ND	ND	ND	ND	35/7	93/15	35/6	7/2	23/5	ND	ND	5/1	ND
21	**Mar-08**	242/15	ND	ND	ND	6/2	333/15	97/15	ND	97/15	4/1	ND	ND	ND
22	**Jun-08**	ND	ND	ND	ND	23/4	271/15	ND	ND	81/15	ND	ND	ND	ND
23	**Sep-08**	ND	ND	ND	ND	17/4	169/15	46/8	12/1	72/11	4/1	ND	ND	ND
24	**Nov-08**	13/2	ND	ND	ND	60/11	159/15	36/6	ND	59/9	ND	ND	ND	ND

Notes:
Exceedances are bolded and shaded.
Exceedances are based on 100 µg/L for individual TIC concentrations and 500 µg/L for Total TICs concentrations.
Results are given as Total TIC concentrations/# TICs.
ND = Not Detected.

Table 5-16
SVOC Tentatively Identified Compounds (TICs)
Site 886
Fort Monmouth, New Jersey

	Well:	886MW01	886MW02	886MW03	886MW04	886MW05	886RW01	886RW02	886RW03	886RW04	886RW05	886RW06	886RW07	886RW08
Round	**Date**													
2	**May-03**	162/21	27/3	30/3	16/1	270/25	NA	NS	NS	NS	NS	NS	NS	NA
3	**Jul-03**	137/20	12/2	15/2	8/1	**722/25**	NA	NS	NS	NS	NS	NS	NS	NA
4	**Oct-03**	22/4	14/3	30/5	ND	269/25	NA	NS	NS	NS	NS	NS	NS	NA
5	**Feb-04**	153/23	ND	9/2	4/1	240/24	256/24	137/16	4/1	50/9	149/16	ND	ND	169/23
6	**May-04**	105/17	ND	ND	ND	168/20	NS	NS	NS	NS	NS	NS	NS	NS
7	**Aug-04**	ND	ND	29/6	11/2	330/25	NS	NS	NS	NS	NS	NS	NS	NS
8	**Oct-04**	86/10	ND	15/2	ND	261/25	NS	NS	NS	NS	NS	NS	NS	NS
9	**Jan-05**	135/21	11/2	11/2	19/2	84/11	247/24	169/20	6/1	**789/25**	8/1	6/1	6/1	6/1
10	**Apr-05**	67/12	5/1	51/4	4/1	4/1	NS	NS	NS	NS	NS	NS	NS	NS
11	**Jul-05**	27/5	6/1	18/1	ND	260/23	NS	NS	NS	NS	NS	NS	NS	NS
12	**Oct-05**	143/16	ND	15/1	ND	76/12	NS	NS	NS	NS	NS	NS	NS	NS
13	**Jan-06**	104/15	ND	ND	ND	5/1	**732/25**	99/14	ND	NS	17/2	ND	ND	ND
14	**Apr-06**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15	**Jul-06**	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
16	**Nov-06**	21/3	ND	5/1	ND	ND	238/25	50/5	ND	419/25	51/9	15/3	74/8	21/4
17	**Jan-07**	132/20	ND	ND	ND	9/2	294/25	51/7	ND	118/17	ND	ND	5/1	24/2
18	**Apr-07**	153/21	25/1	28/1	**170/1**	52/1	65/11	56/6	20/3	25/5	4/1	ND	86/1	72/2
19	**Aug-07**	ND	ND	ND	ND	21/3	313/25	71/9	ND	201/25	ND	ND	9/1	6/1
20	**Oct-07**	ND	15/1	ND	4/1	100/14	301/25	99/11	ND	62/10	20/2	17/3	ND	17/1
21	**Mar-08**	170.46/21	39.3/1	ND	ND	10.1/1	**516.23/25**	51.08/6	ND	196.46/24	10/1	ND	ND	241.85/23
22	**Jun-08**	ND	ND	ND	ND	34/5	30/4	14/2	ND	ND	ND	ND	7/1	ND
23	**Sep-08**	61/8	23/1	ND	14/1	90/13	135/19	132/19	ND	339/26	60/5	100/6	5/1	36/4
24	**Nov-08**	19/3	4/1	8/1	12/1	67/9	391/21	50/9	7/1	6/1	13/2	37/7	32/4	34/4

Notes:
Exceedances are bolded and shaded.
Exceedances are based on 100 µg/L for individual TIC concentrations and 500 µg/L for Total TICs concentrations.
Results are given as Total TIC concentrations/# TICs.
ND = Not Detected.

Table 5-17
Relative Percent Difference Calculations - Ground Water
Site 886 (2nd Quarter 2003 through 4th Quarter 2008)
Fort Monmouth, NJ

Round 2 **Q2 2003** **886MW01** **Sample Multiplier: 1** — **Average All RPDs**

	Field Duplicate	Sample	Average	Difference	RPD	Average All RPDs
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 3 **Q3 2003** **886MW03** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	Average All RPDs
MTBE	1.03	1.25	1.14	0.22	19.30%	
				Average	**19.30%**	**19.30%**

Round 4 **Q4 2003** **886MW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	Average All RPDs
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 5a **Q1 2004** **886MW02** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	Average All RPDs
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 5b **Q1 2004** **886RW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	Average All RPDs
Benzene	3.35	3.35	3.35	0	0.00%	
Total Xylenes	0.46	0.49	0.48	0.03	6.32%	
				Average	**3.16%**	**3.16%**

Round 6 **Q2 2004** **886MW05** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	Average All RPDs
Ethylbenzene	0.97	1.43	1.2	0.46	38.33%	
				Average	**38.33%**	**38.33%**

Round 7 **Q3 2004** **886MW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	Average All RPDs
Acetone	2.87	0.4	1.635	2.47	151.07%	
				Average	**151.07%**	**151.07%**

Round 8 **Q4 2004** **886MW05** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	Average All RPDs
Ethylbenzene	1.02	0.9	0.96	0.12	12.50%	
				Average	**12.50%**	**12.50%**

Table 5-17
Relative Percent Difference Calculations - Ground Water
Site 886 (2nd Quarter 2003 through 4th Quarter 2008)
Fort Monmouth, NJ

Round 9a **Q1 2005** **886MW05** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
Benzene	1.24	1.3	1.27	0.06	4.72%	
				Average	**4.72%**	**4.72%**

Round 9b **Q1 2005** **Duplicate has Unkown Original**

Round 10 **Q2 2005** **886MW02** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
MTBE	1.08	1.1	1.09	0.02	1.83%	
				Average	**1.83%**	**1.83%**

Round 11 **Q3 2005** **886MW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 12 **Q4 2005** **886MW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
MTBE	2.08	2.09	2.085	0.01	0.48%	
Toluene	0.49	0.51	0.5	0.02	4.00%	
Total Xylenes	0.48	0.51	0.495	0.03	6.06%	
				Average	**3.51%**	**3.51%**

Round 13a **Q1 2006** **886RW02** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
Benzene	0.78	0.83	0.805	0.05	6.21%	
Ethylbenzene	0.49	0.66	0.575	0.17	29.57%	
MTBE	0.57	0.64	0.605	0.07	11.57%	
				Average	**15.78%**	**15.78%**

Round 13b **Q1 2006** **886RW07** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 14 **Q2 2006** **886MW03** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Table 5-17
Relative Percent Difference Calculations - Ground Water
Site 886 (2nd Quarter 2003 through 4th Quarter 2008)
Fort Monmouth, NJ

Round 15 **Q3 2006** **886MW03** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 16a **Q4 2006** **886RW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
Acetone	1.7	1.08	1.39	0.62	44.60%	
Benzene	1.24	1.17	1.21	0.07	5.81%	
Ethylbenzene	2.02	2.15	2.09	0.13	6.24%	
MTBE	0.62	0.63	0.63	0.01	1.60%	
Total Xylenes	0.79	0.78	0.79	0.01	1.27%	
				Average	**11.90%**	**11.90%**

Round 16b **Q4 2006** **886RW08** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 17a **Q1 2007** **886MW03** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 17b **Q1 2007** **886RW02** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
Benzene	0.92	0.95	0.94	0.03	3.21%	
Ethylbenzene	0.82	0.87	0.85	0.05	5.92%	
MTBE	2.08	2.33	2.21	0.25	11.34%	
Total Xylenes	0.55	0.55	0.55	0	0.00%	
				Average	**5.12%**	**5.12%**

Round 18a **Q2 2007** **886MW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 18b **Q2 2007** **886RW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
Ethylbenzene	1.56	1.78	1.67	0.22	13.17%	
				Average	**13.17%**	**13.17%**

Table 5-17
Relative Percent Difference Calculations - Ground Water
Site 886 (2nd Quarter 2003 through 4th Quarter 2008)
Fort Monmouth, NJ

Round 19 **Q3 2007** **886MW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 20a **Q4 2007** **886MW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
MTBE	4.46	3.86	4.16	0.6	14.42%	
				Average	**14.42%**	**14.42%**

Round 20b **Q4 2007** **886RW04** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
MTBE	4.78	4.71	4.75	0.07	1.48%	
				Average	**1.48%**	**1.48%**

Round 21a **Q1 2008** **886MW01** **Duplicate Not Analyzed**

Round 21b **Q1 2008** **886MW04** **Duplicate Not Analyzed**

Round 22 **Q2 2008** **886MW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
MTBE	17.05	16.76	16.91	0.29	1.72%	
				Average	**1.72%**	**1.72%**

Round 23 **Q3 2008** **886RW02** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
MTBE	5.62	5.26	5.44	0.36	6.62%	
				Average	**6.62%**	**6.62%**

Round 24 **Q4 2008** **886MW01** **Sample Multiplier: 1**

	Field Duplicate	Sample	Average	Difference	RPD	
MTBE	2.29	2.21	2.25	0.08	3.56%	
				Average	**3.56%**	**3.56%**

Minimum All Relative Percent Differences	**0.00%**
Average All Relative Percent Differences	**11.41%**
Maximum All Relative Percent Differences	**151.07%**

RPD=Relative Percent Differences
MTBE=Methyl Tert-Butyl Alcohol
TBA=Tert-Butyl Alcohol
* Method Detection Limit used for non-detect result.

Appendix A

Versar, Inc., January 2006, *Final Remedial Action Report for Soil and Ground Water Contamination – Building 886, Fort Monmouth, New Jersey*

(This report is supplied on disc only.)

Appendix B

Ground Water Monitoring Well Laboratory Analytical Data
2nd Quarter 2003 through 4th Quarter 2008

(Reports supplied on disc only.)

Appendix C

Fort Monmouth Directorate of Public Works
Analytical Standard Operating Procedures

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Retired 1/28/03

STANDARD OPERATING PROCEDURE

CATEGORY: Sample Handling
TITLE: Monitor Well Sampling for IRP Sites at Fort Monmouth

1 PURPOSE:
To document current procedures for monitoring well sampling.

2 RESPONSIBILITY:
Designated field samplers who have been properly trained and instructed in NJDEP field sampling procedures and protocol.

3 REFERENCES:

3.1 Field Sampling Procedures Manual, May 1992 (most current). New Jersey Department of Environmental Protection and Energy.

3.2 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities developed by NIOSH, OSHA, USCG, EPA. Oct. 1985

3.3 NJDEP Field Analysis Manual, July 1994.

3.4 On the World Wide Web: www.state.nj.us/dep or www.state.nj.us/dep/srp.

3.5 Lab SOP: SAM-0200, SAM-0202, OQC-0302

4 SUMMARY:
The procedures, materials, and equipment describe the recommended methods for sampling monitoring wells. Necessary equipment, calibrations, calculations and appropriate QA/QC procedures are also included. These procedures are to be followed by all personnel involved with the sampling and purging of wells at Fort Monmouth. Persons following this SOP are recommended to also refer to the NJDEP Field Sampling Procedures Manual.

Prepared By D. Wright	Date 8-11-99
Approved By Jackie Herman QA Manager / Laboratory Director	Date 8/11/99
	Retired 1/28/03

5 EQUIPMENT AND MATERIALS:

5.1 Equipment

- 5.1.1 Dissolved oxygen meter
- 5.1.2 HNU photo ionizer
- 5.1.3 Conductivity/pH/temp meter
- 5.1.4 Peristaltic well pumps
- 5.1.5 Pump heads and power cables
- 5.1.6 Water level meter
- 5.1.7 Oil/water interface probe
- 5.1.8 Submersible well pumps
- 5.1.9 Various batteries
- 5.1.10 Buckets
- 5.1.11 Miscellaneous tools, i.e. screwdriver, well wrench, etc.

5.2 Materials:

- 5.2.1 Thick wall silicone tubing ¼ inch diameter,
- 5.2.2 Polyethylene (food grade) tubing ¼ inch diameter,
- 5.2.3 12 inch single sample 1 check stop teflon disposable bailers,
- 5.2.4 Mason string.

6 STANDARDS/REAGENTS:

6.1 Buffer solutions, calibration gases, decontamination materials, and acids for preservation.

- 6.1.1 Buffer solutions:
  - 6.1.1.1 7.00 standard buffer solution
  - 6.1.1.2 10.00 standard buffer solution
  - 6.1.1.3 4.00 standard buffer solution
  - 6.1.1.4 Distilled and deionized water
  - 6.1.1.5 Alconox
  - 6.1.1.6 10 % nitric acid rinse (trace metal or higher grade HNO_3 diluted with distilled/deionized (ATSM Type II) H_2O)
  - 6.1.1.7 Acetone (pesticide grade)
  - 6.1.1.8 Pure nitrogen 100 ppm Isobutylene cal gas.

- 6.1.2 Acids/materials used in preserving samples:
  - 6.1.2.1 Nitric acid 69, 0-70.0%
  - 6.1.2.2 Sulfuric acid 50% (w/w) solution
  - 6.1.2.3 Hydrochloric acid (trace metal grade)
  - 6.1.2.4 Ice for keeping samples at <4 degrees celcius.

Refer to NJDEP Field Sampling Procedure Manual Table 2-1 Aqueous Sampling Equipment Decontamination (Lab and Field).

7 CALIBRATION:

All instruments used for field readings are calibrated before each day of use. The use of pH meters must start out with a calibration using buffer solution standards to check or calibrate accuracy. HNU's are calibrated with a known calibration gas. Dissolved oxygen meters are checked against a winkler method test weekly. All calibrations for a given day's use are recorded in the log provided for each instrument. Refer to equipment directions for calibration instruction. Likewise, specific conductivity meters are checked against standards regularly. Cooler thermometers are calibrated against an NIST traceable thermometer annually.

8 PROCEDURE:

The following articles document the procedures for sampling monitor wells. They are to be used as a guide, by trained personnel, in conjunction with the NJDEP Field Sampling Procedures Manual.

8.1.1 Preparation: It should be noted that before going out into the field, certain preparations must be made. This includes the selection of PPE, safety plans, proper bottle acquisition for analytes being tested, site entry, map information, and equipment.

8.1.2 Selection of PPE: For adequate protection and prevention of contaminant exposure to workers at hazardous waste sites in all phases of work, PPE is properly used and supplied. Determination of PPE will be outlined in a Health and Safety Plan, and also by preliminary site investigations. Refer to NJDEP Field Sampling Procedures Manual, and the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities.

8.1.3 Health and Safety Plans: These plans are developed to encompass all the aspects of site operations. Plans are available to personnel associated with site sampling and a copy is kept on file at the site (in this case, the laboratory). At a minimum, the plan includes all portions of Site Remediation Program's (SRP) Site Safety and Health Standard Operating Procedures deemed appropriate for site, detailed site description, emergency phone numbers, a map and directions to nearest hospital identified on the map, and all PPE needed.

8.1.4 Proper bottle selection: Please refer to QA/QC section 10.1.

8.1.5 Equipment: Please refer to Equipment section 5.

8.1.6 Before purge activities: Certain instruments and meters are calibrated before use. Also, certain measurements and calculations are obtained before any purge activities take place. The following is a list of information/data/steps required prior to the commencement of purge activities. Pertinent information is recorded in log books or on well sheets.

8.1.7 Date, time and weather conditions: Date and time are needed for holding time purposes and general record keeping. Weather conditions may affect ambient conditions at a particular site, therefore said information is recorded. Tidal influences may also be included here, if wells are in a tidal area.

8.1.8 Well number and permit number: These are prominently displayed on the outside of each well in accordance with NJDEP regulations for well construction.

8.1.9 Meter and instrument calibrations: Meters utilized in the course of site sampling activities are calibrated at this time, and the findings recorded in the appropriate logbook. Refer to section 7 for instrument/meter calibration directions.

8.1.10 PID or FID, HNU reading: This is taken from the well inner casing immediately after the cap is removed, findings are recorded.

8.1.11 Free product check: Using ORS meter for interfaces, the presence or absence of free product is determined. Thickness is measured and recorded.

8.1.11.1 Light Non-Aqueous Phase Liquids (LNAPLs) and Dense Non-Aqueous Phase Liquids (DNAPLs): Measurement of thickness for DNAPLs and LNAPLs are performed prior to well purging. An interface probe is used (ORS meter) for this task. If present, LNAPLs are sampled and analyzed for chemical and physical parameters. Sampling is conducted by using a bottom filling bailer which is lowered into the LNAPL layer. DNAPLs are sampled using a dual check valve bailer. If present, DNAPLs are also tested for chemical and physical properties.

8.1.12 Dissolved oxygen, pH, temperature, and specific conductivity: Readings are obtained and recorded on well sheets.

8.1.13 Total depth of well and depth to water: These readings are taken using a depth meter. Total depth of well, depth to water, and depth to screen are measured from the top of the inner casing or surveyors mark. All data is recorded on well sheet.

8.1.14 Calculations: Calculations are made as stated in section 9.

8.2 Purging: When pre-purge activities are complete, the purging of a well can begin. This includes pre-entry to the well and pump setup.

8.2.1 Pre-entry to well: Before tubing (refer to materials section) is inserted into a well, it is wiped down and rinsed with DI water. The tubing is then inserted into the well to a maximum depth of six feet below the water table. During purge activities, the depth of the tubing may be adjusted to prevent the static water level from dropping below the end of the tubing.

8.2.2 Pump setup: Once the battery powered peristaltic pump is set up, purging can begin. Evacuation rates never exceed that of well development, and total volume purged never exceeds 5 times the amount of standing water. Purge water management practices are described in section 10.1.8.

8.3 After Purge: When purging is complete, the pump is removed and tubing is disposed of properly. Data referenced in section 8.3.2 is then taken and recorded.

8.3.1 Pump removal: Tubing is removed from the bottom end while the pump is still running. Tubing is then disposed of. The pump is shut down and decontaminated for its next application.

8.3.2 The following data is recorded on the well sheet: Start and end time of purge, purge method, purge rate, total volume purged, dissolved oxygen, pH, temperature, and specific conductivity readings.

8.4 Field Blank Sample: At this time the field blank sample is collected. A new bailer is opened from its sealed package and field blank water is run over the bailer or sample equipment and collected into the proper sample containers.

8.5 Ground water sampling: Following well evacuation procedures, ground water sampling can begin. In most cases, sampling takes place immediately following purge activities. However, due to certain field conditions, well sampling may be postponed for a period not to exceed 2 hours following completion of purge activities. When multiple wells are being sampled, the least contaminated well is sampled first. Subsequent wells are sampled in order of ascending contamination. Sampling is conducted by using a bottom filling teflon bailer, dedicated to each particular monitoring well. The bailer is lowered slowly into water column until submerged, and then slowly retrieved. The sample is then carefully transferred to the appropriate sample containers. Ground water collected in the first bailing sequence is always used for sampling purposes, it is never discarded.

8.6 Sample order: Samples are collected in the following order:

- 8.6.1 volatile organics (VOA)
- 8.6.2 purgeable organic carbons (POC)
- 8.6.3 purgeable organic halogens (POX)
- 8.6.4 total organic halogens (TOX)
- 8.6.5 total organic carbon (TOC)
- 8.6.6 base neutrals/acid extractables
- 8.6.7 TPHC/oil and grease
- 8.6.8 PCB's/pesticides
- 8.6.9 total metals
- 8.6.10 dissolved metals
- 8.6.11 phenols, cyanide
- 8.6.12 sulfate and chloride
- 8.6.13 turbidity
- 8.6.14 nitrate and ammonia,
- 8.6.15 preserved inorganics
- 8.6.16 radionuclides
- 8.6.17 non-preserved inorganics
- 8.6.18 bacteria

8.7 Dupes and matrix spikes/matrix spike duplicates: These samples are taken in same order at same time. Refer to section 10.2.1.2.

8.8 After sampling: The following data is recorded on well sheets: Start and end time of sampling, dissolved oxygen, pH, temperature, specific conductivity, and sampling method.

9 CALCULATIONS:

Four calculations are made while in the field. The calculations are as follows: linear feet of water (height of water), the volume to be purged, the volume purged not to be exceeded, and purge rate.

9.1 Linear feet of water: This is calculated by knowing the total depth of a well and subtracting the depth to water as measured by a depth meter. These two numbers are measured to within .01 feet. Through this calculation, the linear feet of water is determined.

Equation: (Total well depth – Depth to water = linear feet of water)

9.2 Volume to be purged and volume not to be exceeded: The second calculation is to determine the minimum volume to be purged from a well before sampling. Utilizing the linear feet of water and then multiplying it by the volume per foot for the proper diameter casing (see Figure 1 below) equals the amount of water in casing. Multiplying the amount of water within a casing by 3 equals the minimum volume to be purged. It should be noted that the amount purged should not exceed 5x the amount of standing water in a well.

Equation:
linear feet of water x volume per ft for well diameter = amount of water in casing)
then,
(amount of water in casing x 3 = minimum volume to be purged)

Equation:
(amount of water in casing x 5 = total volume not to be exceeded)

Figure 1: Capacity of Common Casing Diameters
(Pp. 170 in NJDEP FSPM)

Casing Diameter (ft.)	Gallons/linear foot
2 inch (0.1667)	0.1632
4 inch (0.3333)	0.6528
6 inch (0.5000)	1.4688
8 inch (0.6667)	2.6112
10 inch (0.8333)	4.0800
12 inch (1.0000)	5.8752

9.3 Purge rate: The purge rate is determined by calculating the length of time it takes for a pump to fill a 1 gallon bucket with water. The time is then multiplied by the minimum volume to be purged. The gallons being purged is then divided by this number (which also happens to be the length of time the purge will take in minutes) which equals the gallons per minute or purge rate.

Equation:
(time x minimum volume to be purged = length of purge in minutes)
then,
(minimum volume to be purged / length of purge in minutes = gallons per minute or the purge rate)

10 QUALITY CONTROL:

The following QA/QC requirements are established in order to maintain sample integrity. The prime objective is to prevent sample contamination from other sources and ensure potential contaminant concentrations remain stable from sample collection to complete analysis. Refer to the NJDEP Field Sampling Procedures Manual Appendix 2-1 Analytical Methodology Reference Charts, Pp. 24-74. Also refer to SAM-0200 Sample Containers, Preservation and Holding Times.

10.1 Sample Containers: Before sample collection can begin consideration must be given as to what type container will be used to transport and store samples. The lab provides containers based upon requested methodologies. Selection is based on the matrix, potential contaminants, analytical methods, and the laboratory's internal QA/QC requirements. They are selected upon review of the following:

10.1.1 Reactivity of container material with sample. Glass is recommended for hazardous material samples since it is chemically inert to most substances. Plastics may be used when analytes of interest or sample characteristics dictate use instead of glass.

10.1.2 Volume of the container. The volume of sample needed is dictated by the analytical method and the sample matrix. The laboratory supplies bottles that allow for sufficient volumes of sample matrix to be collected.

10.1.3 Color of container. Whenever possible, amber glass is used to prevent photodegradation. If not available, samples are protected from light. One exception is the use of 40 ml clear glass vials which are used for VOA/aqueous analysis.

10.1.4 Container closures. All containers utilized have a leak-proof seal and are constructed out of inert material with respect to sampled materials. The closure may also be separated by a closure liner that is inert to sample material.

10.1.5 Decontamination of containers and chain of custody. Sample containers are laboratory cleaned or purchased as lab cleaned. Bottles being shipped are accompanied by a chain of custody in a cooler with a custody seal. Custody always accompanies containers to the field, during collection, back to lab, and during analysis. This helps to assure no tampering or contamination from outside sources occurs.

10.1.6 Storage and transport. Care is taken to avoid contamination. Clean transport and storage environments are observed. Sample or bottle storage is never near solvents, gasoline, or other equipment that is a potential source of contamination. Samples and chain of custody are secured in coolers or transport, with said chain of custody in with bottles or in the possession of authorized personnel. Also, a temperature blank is included in each cooler to measure temperature of samples on ice (ideally a constant 4 degrees Celsius).

10.1.7 Tubing decontamination: ASTM drinking water grade polyethylene tubing is used and discarded after each use. Care is taken to prevent the pump and tubing from coming into contact with the ground surface. Prior to well purging, all tubing is rinsed/wiped with distilled and deionized water to remove any possible residual materials which may be present.

10.1.8 Disposal of development, purge, pump test, and decon waters: To determine whether waste waters are contaminated, field instrument readings and previous analytical data is used to characterize it. Water not considered contaminated is re-applied directly to ground surface and permitted to percolate back to the water table. Care is taken to avoid nuisance situations where a discharge may cause undue concern. When water is considered contaminated, the water generated is reapplied only if the following conditions are met: ground water is not permitted to migrate offsite, no potential exists for contaminating a previously uncontaminated aquifer, discharge will not cause an increase to ground surface soil contamination. If these conditions are met, the water is re-applied to the ground surface. If these conditions aren't met, than water is collected, containerized and secured in a single locale. Subsequently, the water is properly characterized and processed for offsite disposal.

10.2 QA/QC samples: These samples are intended to provide control over the collection of environmental measurements and subsequent validation, review, and interpretation of analytical data. Trip blanks are used exclusively for volatile organic analysis, (aqueous sampling only) and their purpose is to measure possible cross contamination of samples during shipment to and from a site. Trip blanks are never opened and travel to a site with the empty sample bottles and back from a site with the collected samples. Contaminated trip blanks may indicate bottle cleaning or blank water of questionable quality. Trip blanks are collected at the rate of one per day. Likewise, the purpose of a field blank is to place a mechanism of control on sample equipment handling, preparation, storage and shipment. Field blanks travel and are stored with the sample bottles. Field blanks are collected in the following manner. Two identical sets of bottles are prepared. One set is filled with laboratory demonstrated analyte free water (same water used for trip and method blanks). All of the filled bottles are shipped with the other empty sample containers. At the field location, in an area where contamination is suspected, the water is passed from the full set of like-bottles through the dedicated or field decontaminated sampling device and into the empty set of like-bottles. Field blanks are preserved identically to samples receiving the same analyses. Field blanks are collected and analyzed for all of the same parameters as the samples collected that day.

10.2.1 Additional QA/QC samples:

10.2.1.1 Duplicate samples: Collection of a dupe provides for evaluation of laboratory performance by comparing the analytical data of two samples from the same location. They are included 1 for every 20 samples (5% or 1 a day/site) and submitted as blind samples. They are obtained by alternately filling sample bottles from the same source/device for each parameter. VOA samples are same bailer and first set filled.

10.2.1.2 Matrix spike/Matrix spike duplicate analyses or MS/MSDS sample: The laboratory is supplied with triple volume in order to perform matrix spike and matrix spike dupes. This does not include trips or field blanks. Additional sample volume for MS/MSDS is taken within every set of 20 field samples.

10.3 Sample preservation: Sample bottles are preserved by lab staff based upon analytical requirements. Please refer to SAM-0200 Sample Containers, Preservation, and Holding Times SOP and also NJDEP Field Sampling Procedures Manual Appendix 2-1 Analytical Methodology reference Charts, Pp. 24-74.

Reteec
10/29/04

CATEGORY: Sample Handling
TITLE: Monitor Well Sampling for IRP sites at Fort Monmouth

1 PURPOSE:
1.1 To document current procedures for monitoring well sampling.

2 RESPONSIBILITY:
2.1 Designated field samplers who have been properly trained and instructed in NJDEP field sampling procedures and protocol.

3 SAMPLE COLLECTION, PRESERVATION AND HANDLING:
3.1 For sample collection, preservation and handling, please refer to SOP No. SAM-200.

4 REFERENCES:
4.1 Field Sampling Procedures Manual, May 1992 (most current). New Jersey Department of Environmental Protection and Energy.
4.2 NJDEP Field Analysis Manual, July 1994.
4.3 On the World Wide Web: www.state.nj.us/dep or www.state.nj.us/dep/srp.
4.4 Lab SOP: SAM-0200, SAM-0202, OQC-0302.

5 SUMMARY:
5.1 The procedures, materials, and equipment describe the recommended methods for sampling monitoring wells. Necessary equipment, calibrations, calculations and appropriate QA/QC procedures are also included. These procedures are to be followed by all personnel involved with the sampling and purging of wells at Fort Monmouth. Persons following this SOP are recommended to also refer to the NJDEP Field Sampling Procedures Manual.

6 SAFETY:
6.1 For safety, please refer to CTSC Fort Monmouth, NJ Health and Safety Plan (HASP).

7 EQUIPMENT AND MATERIALS:
7.1 Equipment:
7.1.1 Dissolved oxygen meter

Prepared By: Corey McCormack	Date: 1/30/03
Laboratory Director: [signature]	Date: 2-3-03
QA/QC Manager: Jackie Hamer	Date 1/30/03

7.1.2 HNU photo ionizer
7.1.3 Conductivity/pH/temp meter
7.1.4 Peristaltic well pumps
7.1.5 Pump heads and power cables
7.1.6 Water level meter
7.1.7 Oil/water interface probe
7.1.8 Submersible well pumps
7.1.9 Various batteries
7.1.10Buckets
7.1.11Miscellaneous tools, i.e. screwdriver, well wrench, etc.

7.2 Materials:
7.2.1 Thick wall silicone tubing ¼ inch diameter,
7.2.2 Polyethylene (food grade) tubing ¼ inch diameter,
7.2.3 12 inch single sample 1 check stop Teflon disposable bailers,
7.2.4 Mason string.

8 STANDARDS/REAGENTS:

8.1 Buffer solutions, calibration gases, decontamination materials, and acids for preservation.
8.1.1 Buffer solutions:
8.1.1.1 7.00 standard buffer solution.
8.1.1.2 10.00 standard buffer solution.
8.1.1.3 4.00 standard buffer solution.
8.1.2 Distilled and deionized water.
8.1.3 Alconox.
8.1.4 10 % nitric acid rinse (trace metal or higher grade HNO3 diluted with distilled/deionized (ATSM Type II) H2O).
8.1.5 Acetone (pesticide grade).
8.1.6 Pure nitrogen 100-ppm Isobutylene cal gas.
(Refer to NJDEP Field Sampling Procedure Manual Table 2-1 Aqueous Sampling Equipment Decontamination (Lab and Field) for further information)

8.2 Acids/materials used in preserving samples:
8.2.1 Nitric acid 69.0-70.0%.
8.2.2 Sulfuric acid 50% (w/w) solution.
8.2.3 Hydrochloric acid (trace metal grade).

8.3 Ice for keeping samples at <4 degrees Celsius.

9 QUALITY CONTROL:

9.1 The following QA/QC requirements are established in order to maintain sample integrity. The prime objective is to prevent sample contamination from other sources and ensure potential contaminant concentrations remain stable form sample collection to complete analysis. Refer to the NJDEP Field Sampling Procedures Manual Appendix 2-I Analytical Methodology Reference Charts, Pp. 24-74. Also refer to SAM-0200 Sample Containers, Preservation and Holding Times.

9.2 Sample Containers: Before sample collection can begin consideration must be given as to what type of container will be used to transport and store samples. The lab provides containers based upon requested methodologies. Selection is based on the matrix, potential contaminants, analytical methods, and lab's internal QA/QC requirements. They should be selected upon review of the following:

9.2.1 Reactivity of container material with sample. Glass is recommended for hazardous material samples since it is chemically inert to most substances. Plastics may be used when analytes of interest or sample characteristics dictate use instead of glass.

9.2.2 Volume of the container. The volume of sample needed is dictated by the analytical method and the matrix of the sample. The lab will supply bottles that allow for sufficient volumes of sample matrix to be collected.

9.2.3 Color of container. Whenever possible, amber glass is used to prevent photo degradation. If not available, samples should be kept protected from light. One exception is the 40 ml clear glass VOA vials used for VOA/aqueous analysis.

9.2.4 Container closures. All containers utilized have a leak-proof seal and are constructed out of material inert with respect to sampled materials. The closure may also be separated by a closure liner that is inert to sample material.

9.2.5 Decontamination of containers and chain of custody. Sample containers are laboratory cleaned or purchased as lab cleaned. Bottles being shipped are accompanied by a chain of custody in a cooler with a custody seal. Custody must accompany containers to field, during collection, back to lab, and during analysis. This helps to assure no tampering or contamination from outside sources occurs.

9.3 Storage and transport. Care is taken to avoid contamination. Clean transport and storage environments are observed. Sample or bottle storage is never near solvents, gasoline, or other equipment that is a potential source of contamination. Samples and chain of custody are secured in coolers for transport, with said chain of custody in with bottles or in the hands of authorized personnel. Also, a temperature blank is included in each cooler to measure temperature of samples on ice in coolers (ideally a constant 4 degrees Celsius).

9.4 Tubing decontamination: ASTM drinking water grade polyethylene tubing is used and discarded after each use. Avoid pump and tubing contact with ground surface. All tubing is rinsed/wiped with distilled and deionized water to remove any possible residual materials on it before entering well.

9.5 QA/QC samples: These samples are intended to provide control over the collection of measurements, and subsequent validation, review, and interpretation of analytical data. A trip blank is used for volatile organics and its purpose is to measure possible cross contamination of samples in transit and at a site. It is **never** opened and travels to the site or sites **with** empty sample bottles and back **with** samples. They may also indicate poor cleaning. Like wise, a field blank is used to determine a control on the equipment handling, preparation, storage and shipment. It travels with the samples and is a representative of shipment effects on sample quality. By being opened in the field, transferred over a cleaned sampling device, the blank is indicative of ambient and equipment conditions that may affect quality of associated samples. It also serves as an additional check on possible sources of contamination. Blank water is demonstrated analyte free, and is from the same common source and physical locale in lab.

9.5.1 Aqueous matrix QA/QC blank requirements:

9.5.1.1 Field blanks: They are preserved/analyzed for all the same parameters as samples collected that day. They may be required in order to detect cross contamination from ambient air during a potable sampling if known sources are within proximity or monitoring equipment indicates their presence as background. Field blanks must also be taken once every day during sampling.

9.5.1.2 Trip blanks: Consists of a set of bottles each filled at the lab with analyte free water. They accompany the bottles both to and from each site. They are never opened in field. They are also returned in same bottles they were sent out in. At minimum, a trip blank must be analyzed for volatile organics. Inclusion of additional parameters is at the discretion of the NJDEP. Trip blanks and the samples they accompany are not held on site more than 2 calendar days. A trip blank is included in each sample shipment or trip to field, not to exceed 2 consecutive field days.

9.5.2 Additional QA/QC samples:

9.5.2.1 Duplicate samples: Collection of a dupe provides for evaluation of lab performance by comparing the analytical data of two samples from the same location. They are included 1 for every 20 samples (5% or 1 a day/site) and submitted as blind samples. They are obtained by alternately filling sample bottles from the same source/device for each parameter. VOA samples are same bailer and first set filled.

9.5.2.2 Matrix spike/Matrix spike duplicate analyses or MS/MSDS sample: The lab is supplied with triple volume in order to perform matrix spike and matrix spike dupes. This does not include trips or field blanks. They should occur every case of field samples, every 20-field samples or each 14-day calendar period in which a site is being worked at and samples collected.

9.6 Sample preservation: Sample bottles are preserved by lab staff based upon analytical requirements. Please refer to SAM-0200 Sample Containers, Preservation, and Holding Times SOP and also NJDEP Field Sampling Procedures Manual Appendix 2-1 Analytical Methodology reference Charts, Pp. 24-74.

10 CALIBRATION:

10.1 All instruments used for field readings are calibrated before each day of use. The use of pH meters must start out with a calibration using buffer solution standards to check or calibrate accuracy. HNU's are calibrated with a known calibration gas. Dissolved oxygen meters are checked against a Winkler method test weekly. All calibrations for a given days use are recorded in the log provided for each instrument. Refer to equipment directions for calibration instruction. Like wise, specific conductivity meters are checked against standards regularly. Cooler thermometers are calibrated against a NIST traceable thermometer annually.

11 PROCEDURE:

11.1 The following articles document the procedures for sampling monitor wells. They are to be used as a guide by trained personnel in conjunction with the NJDEP Field Sampling Procedures Manual.

11.1.1 Proper bottle selection: Please refer to QA/QC section 10.1.

11.1.2 Equipment: Please refer to Equipment section 5.

11.1.3 Before purge activities: Certain instruments and meters are calibrated before use. Also, certain measurements and calculations are obtained before any purge activity can occur. The following is a list of information/data/steps required before purging and pertinent information recorded in log books or on well sheets: Date, time and weather conditions: Date and time are needed for holding time, and general record keeping. Weather conditions may affect ambient conditions at a particular site, so are therefore recorded. Tidal influences may also be included here, if wells are in a tidal area.

11.1.4 Well number and permit number: These are to be prominently displayed on outside of well according to NJDEP regulations for well construction. They also help to identify a particular well more exactly at a site.

11.1.5 Meter and instrument calibrations: Any meter utilized in the course of site sampling activities should be calibrated at this time, and then findings recorded in log books. Refer to section 7 and appropriate instrument/meter calibration directions.

11.1.6 PID or FID, HNU reading. This is taken from well inner casing immediately after the cap is removed, and findings recorded.

11.1.7 Free product check: Using ORS meter for interfaces, the presence or absence of product is determined. Thickness is measured and recorded also.

11.1.7.1 Light Non-Aqueous Phase Liquids (LNAPLs) and Dense Non-Aqueous Phase Liquids (DNAPLs): Measurement of thickness of DNAPLs and LNAPLs must be performed prior to purging wells. An interface probe may be used (ORS meter). Each layer of LNAPLs are sampled and analyzed for chemical and physical parameters. Sampling is by using a bottom filling bailer, lowered through LNAPL layer but not significantly down into next phase. DNAPLs are sampled using a dual check valve bailer or bladder pump. Both then are tested for chemical and physical properties. If both are present, it may be necessary to purge well of one casing volume of water prior to sampling DNAPL provided layer is not disturbed. This is done by setting a submersible pump or suction lift pump several feet above DNAPL.

11.2 Dissolved oxygen, pH, temperature, and specific conductivity: Readings should be obtained and recorded on well sheets.

11.3 Total depth of well and depth to water: These readings are taken using a depth meter. Total depth of well, depth to water, and depth to screen are measured from the top of the inner casing or surveyor's mark. All are recorded on well sheets.

11.4 Calculations: Calculations are then done as stated in section 12.

11.5 Purging: When pre-purge activities are complete, the purging of well can begin. This includes pre-entry to the well and pump setup.

11.6 Field Blank Sample: At this time the field blank is sampled. A new bailer is opened from its sealed package and then the field blank water is run over the bailer or sample equipment and collected into proper sample containers in correct order.

11.7 Pre-entry to well: Before tubing (refer to materials section) is inserted in well, it must be wiped down and rinsed with DI water. Then inserted into well leaving at maximum six feet of distance below water surface. Tubing is then lowered as depth drops, or as needed.

11.8 Pump setup: The peristaltic pump is then setup with its connection to battery and purging begun. Evacuation rate should not exceed that of well development, and total volume purged should not exceed 5 times the amount of standing water. Discharge water must be in compliance with those stated in section 13. Please refer to the NJDEP Field Sampling Procedures Manual as well.

11.9 After Purge: When purging is complete, pump is removed and tubing is disposed of properly. Data in section 11.2 is then taken and recorded.

11.10 Pump removal: Using peristaltic pumps, the tubing is removed from well at end of purge while pump still running. Tubing is then disposed of. Pump can than be shut down and decontaminated for next use as needed.

11.11 The following data must be recorded on well sheet: Start and end time of purge, purge method and purge rate. Total volume purged, dissolved oxygen, pH, temperature, and specific conductivity readings.

11.12 Ground water sampling: Following well evacuation procedures, groundwater sampling can begin. This is immediately after purge, not lapsing more than 2 hours afterwards. When multiple wells are being sampled, the least contaminated should be done first in order of ascending contamination. Sampling is done by using a bottom filling Teflon bailer, dedicated to that particular sampling event. Bailer is lowered slowly into water until submerged, and then slowly retrieved. Sample is then carefully transferred to sample containers. The first full bailer of water is used for sampling, it may not be discarded.

Sample order: Samples are collected in the following order:

volatile organics (VOA)
purgeable organic carbons (POC)
purgeable organic halogens (POX)
total organic halogens (TOX)
total organic carbon (TOC)
base neutrals/acid extractables
TPHC/oil and grease
PCB's/pesticides
total metals
dissolved metals
phenols, cyanide
sulfate and chloride
turbidity
nitrate and ammonia,
preserved inorganics
radionuclides

non-preserved inorganics
bacteria.

This order must be followed.

11.13 Dupes and matrix spikes/matrix spike duplicates: These samples are taken in the same order and at the same time as samples. Refer to sections 9.5.2 and 11.12.

11.14 After sampling: The following data is recorded on well sheets: Start and end time of sampling, dissolved oxygen, pH, temperature, specific conductivity, and sampling method.

12 CALCULATIONS:

12.1 Four calculations must be done while in the field. The calculations are as follows: linear feet of water (height of water), the volume to be purged, the volume purged not to be exceeded, and purge rate.

12.1.1 Linear feet of water: This is calculated by knowing the total depth of the well and subtracting the depth to water measured by a depth meter. These two numbers should be measured to within .01 feet. Through this calculation, the linear feet of water is determined.

Equation: (Total well depth – Depth to water = linear feet of water)

12.1.2 Volume to be purged and volume not to be exceeded: The second calculation is to determine the minimum volume to be purged from a well before sampling. Utilizing the linear feet of water and then multiplying it by the volume per foot for the proper diameter casing (see Figure 1 below) equals the amount of water in casing. By multiplying the amount of water within a casing by 3 equals the total minimum volume to be purged. It should be noted here that the amount purged should not exceed 5x the amount of standing water in a well.

Equation:

linear ft of water x volume per ft well diameter = amount of water in casing)

then,

(amount of water in casing x 3 = minimum volume to be purged)

Equation:

(amount of water in casing x 5 = total volume **not** to be exceeded)

Figure 1: Capacity of Common Casing Diameters
(Pp. 170 in NJDEP FSPM)

Casing Diameter (ft.)	Gallons/linear foot
2 inch (0.1667)	0.1632
4 inch (0.3333)	0.6528
6 inch (0.5000)	1.4688
8 inch (0.6667)	2.6112
10 inch (0.8333)	4.0800
12 inch (1.0000)	5.8752

12.1.3 Purge rate: The purge rate is determined by calculating the length of time it takes for pump to fill a 1-gallon bucket with water. The time is multiplied by the minimum volume to be purged. The gallons being purged is then divided by this number (which also happens to be the length of time the purge will take in minutes) which equals the gallons per minute or purge rate.

Equation:

(time x minimum volume to be purged = length of purge in minutes)

then,

(minimum volume to be purged / length of purge in minutes = gallons per minute or the purge rate)

13 POLLUTION PREVENTION:

13.1 For pollution prevention, please refer to SOP No. SAM-0222.

14 WASTE MANAGEMENT:

14.1 For sample disposal, please refer to SOP No. SAM-0220.

Retired
1/20/06

Attachment 1

FORT MONMOUTH ENVIRONMENTAL LABORATORY

STANDARD OPERATING PROCEDURE
REQUEST FOR REVISION FORM

SOP #: SAM-0205

CATEGORY: Sample Handling

REVISION: No. 2

TITLE: Monitor Well Sampling for IRP Sites at Fort Monmouth

*REVISION (Section and Paragraph): 7 Equipment + Materials, 7.1 Equipment added 7.1.12

REASON FOR REVISION: added 7.1.12 to adjust for new tech in parameter measuring equipment.

OTHER DOCUMENTS AFFECTED:

*(Attach additional information)

AUTHOR: Corey McCourt DATE: 9/30/04

APPROVAL: [signature] DATE: 10-14-04

CATEGORY: Sample Handling
TITLE: Monitor Well Sampling for IRP sites at Fort Monmouth

1 PURPOSE:
  1.1 To document current procedures for monitoring well sampling.

2 RESPONSIBILITY:
  2.1 Designated field samplers who have been properly trained and instructed in NJDEP field sampling procedures and protocol.

3 SAMPLE COLLECTION, PRESERVATION AND HANDLING:
  3.1 For sample collection, preservation and handling, please refer to SOP No. SAM-200.

4 REFERENCES:
  4.1 Field Sampling Procedures Manual, May 1992 (most current). New Jersey Department of Environmental Protection and Energy.
  4.2 NJDEP Field Analysis Manual, July 1994.
  4.3 On the World Wide Web: www.state.nj.us/dep or www.state.nj.us/dep/srp.
  4.4 Lab SOP: SAM-0200, SAM-0202, OQC-0302.

5 SUMMARY:
  5.1 The procedures, materials, and equipment describe the recommended methods for sampling monitoring wells. Necessary equipment, calibrations, calculations and appropriate QA/QC procedures are also included. These procedures are to be followed by all personnel involved with the sampling and purging of wells at Fort Monmouth. Persons following this SOP are recommended to also refer to the NJDEP Field Sampling Procedures Manual.

6 SAFETY:
  6.1 For safety, please refer to CTSC Fort Monmouth, NJ Health and Safety Plan (HASP).

7 EQUIPMENT AND MATERIALS:
  7.1 Equipment:
    7.1.1 Dissolved oxygen meter

Prepared By: Corey McConnach	Date: 9/30/04
Laboratory Director: [illegible]	Date: 10-14-04
QA/QC Manager: Jackie Holmes	Date 10/14/04

7.1.2 HNU photo ionizer
7.1.3 Conductivity/pH/temp meter
7.1.4 Peristaltic well pumps
7.1.5 Pump heads and power cables
7.1.6 Water level meter
7.1.7 Oil/water interface probe
7.1.8 Submersible well pumps
7.1.9 Various batteries
7.1.10Buckets
7.1.11Miscellaneous tools, i.e. screwdriver, well wrench, etc.
7.1.12 A multi-parameter water quality meter may be used as long as it measures: Conductivity, pH, Temperature, and Dissolved Oxygen.

7.2 Materials:
7.2.1 Thick wall silicone tubing ¼ inch diameter,
7.2.2 Polyethylene (food grade) tubing ¼ inch diameter,
7.2.3 12 inch single sample 1 check stop Teflon disposable bailers,
7.2.4 Mason string.

8 STANDARDS/REAGENTS:

8.1 Buffer solutions, calibration gases, decontamination materials, and acids for preservation.
8.1.1 Buffer solutions:
8.1.1.1 7.00 standard buffer solution.
8.1.1.2 10.00 standard buffer solution.
8.1.1.3 4.00 standard buffer solution.
8.1.2 Distilled and deionized water.
8.1.3 Alconox.
8.1.4 10 % nitric acid rinse (trace metal or higher grade HNO3 diluted with distilled/deionized (ATSM Type II) H2O).
8.1.5 Acetone (pesticide grade).
8.1.6 Pure nitrogen 100-ppm Isobutylene cal gas.
(Refer to NJDEP Field Sampling Procedure Manual Table 2-1 Aqueous Sampling Equipment Decontamination (Lab and Field) for further information)

8.2 Acids/materials used in preserving samples:
8.2.1 Nitric acid 69.0-70.0%.
8.2.2 Sulfuric acid 50% (w/w) solution.
8.2.3 Hydrochloric acid (trace metal grade).

8.3 Ice for keeping samples at <4 degrees Celsius.

9 QUALITY CONTROL:

9.1 The following QA/QC requirements are established in order to maintain sample integrity. The prime objective is to prevent sample contamination from other sources and ensure potential contaminant concentrations remain stable form sample collection to complete analysis. Refer to the NJDEP Field Sampling Procedures Manual Appendix 2-1 Analytical Methodology Reference Charts, Pp. 24-74. Also refer to SAM-0200 Sample Containers, Preservation and Holding Times.

9.2 Sample Containers: Before sample collection can begin consideration must be given as to what type of container will be used to transport and store samples. The lab provides containers based upon requested methodologies. Selection is based on the matrix, potential contaminants, analytical methods, and lab's internal QA/QC requirements. They should be selected upon review of the following:

9.2.1 Reactivity of container material with sample. Glass is recommended for hazardous material samples since it is chemically inert to most substances. Plastics may be used when analytes of interest or sample characteristics dictate use instead of glass.

9.2.2 Volume of the container. The volume of sample needed is dictated by the analytical method and the matrix of the sample. The lab will supply bottles that allow for sufficient volumes of sample matrix to be collected.

9.2.3 Color of container. Whenever possible, amber glass is used to prevent photo degradation. If not available, samples should be kept protected from light. One exception is the 40 ml clear glass VOA vials used for VOA/aqueous analysis.

9.2.4 Container closures. All containers utilized have a leak-proof seal and are constructed out of material inert with respect to sampled materials. The closure may also be separated by a closure liner that is inert to sample material.

9.2.5 Decontamination of containers and chain of custody. Sample containers are laboratory cleaned or purchased as lab cleaned. Bottles being shipped are accompanied by a chain of custody in a cooler with a custody seal. Custody must accompany containers to field, during collection, back to lab, and during analysis. This helps to assure no tampering or contamination from outside sources occurs.

9.3 Storage and transport. Care is taken to avoid contamination. Clean transport and storage environments are observed. Sample or bottle storage is never near solvents, gasoline, or other equipment that is a potential source of contamination. Samples and chain of custody are secured in coolers for transport, with said chain of custody in with bottles or in the hands of authorized personnel. Also, a temperature blank is included in each cooler to measure temperature of samples on ice in coolers (ideally a constant 4 degrees Celsius).

9.4 Tubing decontamination: ASTM drinking water grade polyethylene tubing is used and discarded after each use. Avoid pump and tubing contact with ground surface. All tubing is rinsed/wiped with distilled and deionized water to remove any possible residual materials on it before entering well.

9.5 QA/QC samples: These samples are intended to provide control over the collection of measurements, and subsequent validation, review, and interpretation of analytical data. A trip blank is used for volatile organics and its purpose is to measure possible cross contamination of samples in transit and at a site. It is **never** opened and travels to the site or sites **with** empty sample bottles and back **with** samples. They may also indicate poor cleaning. Like wise, a field blank is used to determine a control on the equipment handling, preparation, storage and shipment. It travels with the samples and is a representative of shipment effects on sample quality. By being opened in the field, transferred over a cleaned sampling device, the blank is indicative of ambient and equipment conditions that may affect quality of associated samples. It also serves as an additional check on possible sources of contamination. Blank water is demonstrated analyte free, and is from the same common source and physical locale in lab.

9.5.1 Aqueous matrix QA/QC blank requirements:

9.5.1.1 Field blanks: They are preserved/analyzed for all the same parameters as samples collected that day. They may be required in order to detect cross contamination from ambient air during a potable sampling if known sources are within proximity or monitoring equipment indicates their presence as background. Field blanks must also be taken once every day during sampling.

9.5.1.2 Trip blanks: Consists of a set of bottles each filled at the lab with analyte free water. They accompany the bottles both to and from each site. They are never opened in field. They are also returned in same bottles they were sent out in. At minimum, a trip blank must be analyzed for volatile organics. Inclusion of additional parameters is at the discretion of the NJDEP. Trip blanks and the samples they accompany are not held on site more than 2 calendar days. A trip blank is included in each sample shipment or trip to field, not to exceed 2 consecutive field days.

9.5.2 Additional QA/QC samples:

9.5.2.1 Duplicate samples: Collection of a dupe provides for evaluation of lab performance by comparing the analytical data of two samples from the same location. They are included 1 for every 20 samples (5% or 1 a day/site) and submitted as blind samples. They are obtained by

alternately filling sample bottles from the same source/device for each parameter. VOA samples are same bailer and first set filled.

9.5.2.2 Matrix spike/Matrix spike duplicate analyses or MS/MSDS sample: The lab is supplied with triple volume in order to perform matrix spike and matrix spike dupes. This does not include trips or field blanks. They should occur every case of field samples, every 20-field samples or each 14-day calendar period in which a site is being worked at and samples collected.

9.6 Sample preservation: Sample bottles are preserved by lab staff based upon analytical requirements. Please refer to SAM-0200 Sample Containers, Preservation, and Holding Times SOP and also NJDEP Field Sampling Procedures Manual Appendix 2-1 Analytical Methodology reference Charts, Pp. 24-74.

10 CALIBRATION:

10.1 All instruments used for field readings are calibrated before each day of use. The use of pH meters must start out with a calibration using buffer solution standards to check or calibrate accuracy. HNU's are calibrated with a known calibration gas. Dissolved oxygen meters are checked against a Winkler method test weekly. All calibrations for a given days use are recorded in the log provided for each instrument. Refer to equipment directions for calibration instruction. Like wise, specific conductivity meters are checked against standards regularly. Cooler thermometers are calibrated against a NIST traceable thermometer annually.

11 PROCEDURE:

11.1 The following articles document the procedures for sampling monitor wells. They are to be used as a guide by trained personnel in conjunction with the NJDEP Field Sampling Procedures Manual.

11.1.1 Proper bottle selection: Please refer to QA/QC section 10.1.

11.1.2 Equipment: Please refer to Equipment section 5.

11.1.3 Before purge activities: Certain instruments and meters are calibrated before use. Also, certain measurements and calculations are obtained before any purge activity can occur. The following is a list of information/data/steps required before purging and pertinent information recorded in log books or on well sheets: Date, time and weather conditions: Date and time are needed for holding time, and general record keeping. Weather conditions may affect ambient conditions at a particular site, so are therefore recorded. Tidal influences may also be included here, if wells are in a tidal area.

11.1.4 Well number and permit number: These are to be prominently displayed on outside of well according to NJDEP regulations for well construction. They also help to identify a particular well more exactly at a site.

11.1.5 Meter and instrument calibrations: Any meter utilized in the course of site sampling activities should be calibrated at this time, and then findings recorded in log books. Refer to section 7 and appropriate instrument/meter calibration directions.

11.1.6 PID or FID, HNU reading. This is taken from well inner casing immediately after the cap is removed, and findings recorded.

11.1.7 Free product check: Using ORS meter for interfaces, the presence or absence of product is determined. Thickness is measured and recorded also.

11.1.7.1 Light Non-Aqueous Phase Liquids (LNAPLs) and Dense Non-Aqueous Phase Liquids (DNAPLs): Measurement of thickness of DNAPLs and LNAPLs must be performed prior to purging wells. An interface probe may be used (ORS meter). Each layer of LNAPLs are sampled and analyzed for chemical and physical parameters. Sampling is by using a bottom filling bailer, lowered through LNAPL layer but not significantly down into next phase. DNAPLs are sampled using a dual check valve bailer or bladder pump. Both then are tested for chemical and physical properties. If both are present, it may be necessary to purge well of one casing volume of water prior to sampling DNAPL provided layer is not disturbed. This is done by setting a submersible pump or suction lift pump several feet above the DNAPL.

11.2 Dissolved oxygen, pH, temperature, and specific conductivity: Readings should be obtained and recorded on well sheets.

11.3 Total depth of well and depth to water: These readings are taken using a depth meter. Total depth of well, depth to water, and depth to screen are measured from the top of the inner casing or surveyor's mark. All are recorded on well sheets.

11.4 Calculations: Calculations are then done as stated in section 12.

11.5 Purging: When pre-purge activities are complete, the purging of well can begin. This includes pre-entry to the well and pump setup.

11.6 Field Blank Sample: At this time the field blank is sampled. A new bailer is opened from its sealed package and then the field blank water is run over the bailer or sample equipment and collected into proper sample containers in correct order.

11.7 Pre-entry to well: Before tubing (refer to materials section) is inserted in well, it must be wiped down and rinsed with DI water. Then inserted into well leaving at maximum six feet of distance below water surface. Tubing is then lowered as depth drops, or as needed.

11.8 Pump setup: The peristaltic pump is then setup with its connection to battery and purging begun. Evacuation rate should not exceed that of well development, and total volume purged should not exceed 5 times the amount of standing water. Discharge water must be in compliance with those stated in section 13. Please refer to the NJDEP Field Sampling Procedures Manual as well.

11.9 After Purge: When purging is complete, pump is removed and tubing is disposed of properly. Data in section 11.2 is then taken and recorded.

11.10 Pump removal: Using peristaltic pumps, the tubing is removed from well at end of purge while pump still running. Tubing is then disposed of. Pump can than be shut down and decontaminated for next use as needed.

11.11 The following data must be recorded on well sheet: Start and end time of purge, purge method and purge rate. Total volume purged, dissolved oxygen, pH, temperature, and specific conductivity readings.

11.12 Ground water sampling: Following well evacuation procedures, groundwater sampling can begin. This is immediately after purge, not lapsing more than 2 hours afterwards. When multiple wells are being sampled, the least contaminated should be done first in order of ascending contamination. Sampling is done by using a bottom filling Teflon bailer, dedicated to that particular sampling event. Bailer is lowered slowly into water until submerged, and then slowly retrieved. Sample is then carefully transferred to sample containers. The first full bailer of water is used for sampling, it may not be discarded.

Sample order: Samples are collected in the following order:
volatile organics (VOA)
purgeable organic carbons (POC)
purgeable organic halogens (POX)
total organic halogens (TOX)
total organic carbon (TOC)
base neutrals/acid extractables
TPHC/oil and grease
PCB's/pesticides
total metals
dissolved metals

phenols, cyanide
sulfate and chloride
turbidity
nitrate and ammonia,
preserved inorganics
radionuclides
non-preserved inorganics
bacteria.

This order must be followed.

11.13 Dupes and matrix spikes/matrix spike duplicates: These samples are taken in the same order and at the same time as samples. Refer to sections 9.5.2 and 11.12.

11.14 After sampling: The following data is recorded on well sheets: Start and end time of sampling, dissolved oxygen, pH, temperature, specific conductivity, and sampling method.

12 CALCULATIONS:

12.1 Four calculations must be done while in the field. The calculations are as follows: linear feet of water (height of water), the volume to be purged, the volume purged not to be exceeded, and purge rate.

12.1.1 Linear feet of water: This is calculated by knowing the total depth of the well and subtracting the depth to water measured by a depth meter. These two numbers should be measured to within .01 feet. Through this calculation, the linear feet of water is determined.

Equation: (Total well depth – Depth to water = linear feet of water)

12.1.2 Volume to be purged and volume not to be exceeded: The second calculation is to determine the minimum volume to be purged from a well before sampling. Utilizing the linear feet of water and then multiplying it by the volume per foot for the proper diameter casing (see Figure 1 below) equals the amount of water in casing. By multiplying the amount of water within a casing by 3 equals the total minimum volume to be purged. It should be noted here that the amount purged should not exceed 5x the amount of standing water in a well.

Equation:

linear ft of water x volume per ft well diameter = amount of water in casing) then,

(amount of water in casing x 3 = minimum volume to be purged)

Equation:

(amount of water in casing x 5 = total volume **not** to be exceeded)

Figure 1: Capacity of Common Casing Diameters
(Pp. 170 in NJDEP FSPM)

Casing Diameter (ft.)	Gallons/linear foot
2 inch (0.1667)	0.1632
4 inch (0.3333)	0.6528
6 inch (0.5000)	1.4688
8 inch (0.6667)	2.6112
10 inch (0.8333)	4.0800
12 inch (1.0000)	5.8752

12.1.3 Purge rate: The purge rate is determined by calculating the length of time it takes for pump to fill a 1-gallon bucket with water. The time is multiplied by the minimum volume to be purged. The gallons being purged is then divided by this number (which also happens to be the length of time the purge will take in minutes) which equals the gallons per minute or purge rate.

Equation:

(time x minimum volume to be purged = length of purge in minutes)

then,

(minimum volume to be purged / length of purge in minutes = gallons per minute or the purge rate)

13 POLLUTION PREVENTION:

13.1 For pollution prevention, please refer to SOP No. SAM-0222.

14 WASTE MANAGEMENT:

14.1 For sample disposal, please refer to SOP No. SAM-0220.

Retired 4/22/08

Attachment 1

FORT MONMOUTH ENVIRONMENTAL LABORATORY

STANDARD OPERATING PROCEDURE REQUEST FOR REVISION FORM

SOP #: SAM-205

CATEGORY: Sample Handling

REVISION: 3

TITLE: Monitor Well Sampling for IRP Sites

*REVISION (Section and Paragraph):

REASON FOR REVISION: Reference new Field Sampling Procedures Manual

OTHER DOCUMENTS AFFECTED:

*(Attach additional information)

AUTHOR: Walter Fink DATE: 1/23/06

APPROVAL: Jackie Hosman DATE: 1/23/06

CATEGORY: Sample Handling
TITLE: Monitor Well Sampling for IRP sites at Fort Monmouth

1 PURPOSE:
  1.1 To document current procedures for monitoring well sampling.

2 RESPONSIBILITY:
  2.1 Designated field samplers who have been properly trained and instructed in NJDEP field sampling procedures and protocol.

3 SAMPLE COLLECTION, PRESERVATION AND HANDLING:
  3.1 For sample collection, preservation and handling, please refer to SOP No. SAM-200.

4 REFERENCES:
  4.1 Field Sampling Procedures Manual, August 2005. New Jersey Department of Environmental Protection.
  4.2 NJDEP Field Analysis Manual, July 1994.
  4.3 On the World Wide Web: www.state.nj.us/dep or www.state.nj.us/dep/srp.
  4.4 Lab SOP: SAM-0200, SAM-0202, OQC-0302.

5 SUMMARY:
  5.1 The procedures, materials, and equipment describe the recommended methods for sampling monitoring wells. Necessary equipment, calibrations, calculations and appropriate QA/QC procedures are also included. These procedures are to be followed by all personnel involved with the sampling and purging of wells at Fort Monmouth. Persons following this SOP are recommended to also refer to the NJDEP Field Sampling Procedures Manual, August 2005.

6 SAFETY:
  6.1 For safety, please refer to CTSC Fort Monmouth, NJ Health and Safety Plan (HASP).

7 EQUIPMENT AND MATERIALS:
  7.1 Equipment:
    7.1.1 Dissolved oxygen meter

Prepared By: Walter Funk	Date: 1/23/06
Laboratory Director: [signature]	Date: 1-24-06
QA/QC Manager: Jackie Hehman	Date: 1/23/06

7.1.2 HNU photo ionizer
7.1.3 Conductivity/pH/temperature meter
7.1.4 Peristaltic well pumps
7.1.5 Pump heads and power cables
7.1.6 Water level meter
7.1.7 Oil/water interface probe
7.1.8 Submersible well pumps
7.1.9 Various batteries
7.1.10Buckets
7.1.11Miscellaneous tools, i.e. screwdriver, well wrench, etc.
7.1.12 A multi-parameter water quality meter may be used as long as it measures: Conductivity, pH, Temperature, and Dissolved Oxygen.

7.2 Materials:
7.2.1 Thick wall silicone tubing ¼ inch diameter
7.2.2 Polyethylene (food grade) tubing ¼ inch diameter
7.2.3 12 inch single sample 1 check stop Teflon disposable bailers
7.2.4 Mason string

8 STANDARDS/REAGENTS:

8.1 Buffer solutions, calibration gases, decontamination materials, and acids for preservation.
8.1.1 Buffer solutions:
8.1.1.1 7.00 standard buffer solution
8.1.1.2 10.00 standard buffer solution
8.1.1.3 4.00 standard buffer solution
8.1.2 Distilled and deionized water
8.1.3 Alconox
8.1.4 10 % nitric acid rinse (trace metal or higher grade HNO_3 diluted with distilled/deionized (ATSM Type II) H_2O).
8.1.5 Acetone (pesticide grade).
8.1.6 Pure nitrogen 100-ppm Isobutylene cal gas.
(Refer to NJDEP Field Sampling Procedure Manual Table 2-1 Aqueous Sampling Equipment Decontamination (Lab and Field) for further information).

8.2 Acids/materials used in preserving samples:
8.2.1 Nitric acid 69.0-70.0%
8.2.2 Sulfuric acid 50% (w/w) solution
8.2.3 Hydrochloric acid (trace metal grade)

8.3 Ice for keeping samples at <4 degrees Celsius

9 QUALITY CONTROL:

9.1 The following QA/QC requirements are established in order to maintain sample integrity. The prime objective is to prevent sample contamination from other sources and ensure potential contaminant concentrations remain stable form sample collection to complete analysis. Refer to the NJDEP Field Sampling Procedures Manual Appendix 2-1 Analytical Methodology Reference Charts, Pp. 35-61. Also refer to SAM-0200 Sample Containers, Preservation and Holding Times.

9.2 Sample Containers: Before sample collection can begin consideration must be given as to what type of container will be used to transport and store samples. The lab provides containers based upon requested methodologies. Selection is based on the matrix, potential contaminants, analytical methods, and lab's internal QA/QC requirements. They should be selected upon review of the following:

9.2.1 Reactivity of container material with sample. Glass is recommended for hazardous material samples since it is chemically inert to most substances. Plastics may be used when analytes of interest or sample characteristics dictate use instead of glass.

9.2.2 Volume of the container. The volume of sample needed is dictated by the analytical method and the matrix of the sample. The lab will supply bottles that allow for sufficient volumes of sample matrix to be collected.

9.2.3 Color of container. Whenever possible, amber glass is used to prevent photo degradation. If not available, samples should be kept protected from light. One exception is the 40 ml clear glass VOA vials used for VOA aqueous analysis.

9.2.4 Container closures. All containers utilized have a leak-proof seal and are constructed out of material inert with respect to sampled materials. The closure may also be separated by a closure liner that is inert to sample material.

9.2.5 Decontamination of containers and chain of custody. Sample containers are laboratory cleaned or purchased as lab cleaned. Bottles being shipped are accompanied by a chain of custody in a cooler with a custody seal. Custody must accompany containers to field, during collection, back to lab, and during analysis. This helps to assure no tampering or contamination from outside sources occurs.

9.3 Storage and transport. Care is taken to avoid contamination. Clean transport and storage environments are observed. Sample or bottle storage is never near solvents, gasoline, or other equipment that is a potential source of contamination. Samples and chain of custody are secured in coolers for transport, with said chain of custody in with bottles or in the hands of authorized personnel. Also, a temperature blank is included in each cooler to measure the temperature of samples on ice in coolers (ideally a constant 4 degrees Celsius).

9.4 Tubing decontamination: ASTM drinking water grade polyethylene tubing is used and discarded after each use. Avoid pump and tubing contact with ground surface. All tubing is rinsed/wiped with distilled and deionized water to remove any possible residual materials on it before entering well.

9.5 QA/QC samples: These samples are intended to provide control over the collection of measurements, and subsequent validation, review, and interpretation of analytical data. A trip blank is used for volatile organics and its purpose is to measure possible cross contamination of samples in transit and at a site. It is **never** opened and travels to the site or sites **with** empty sample bottles and back **with** samples. They may also indicate poor cleaning. Like wise, a field blank is used to determine a control on the equipment handling, preparation, storage and shipment. It travels with the samples and is representative of shipment effects on sample quality. By being opened in the field, transferred over a cleaned sampling device, the blank is indicative of ambient and equipment conditions that may affect quality of associated samples. It also serves as an additional check on possible sources of contamination. Blank water is demonstrated analyte free, and is from the same common source and physical locale in lab.

9.5.1 Aqueous matrix QA/QC blank requirements:

9.5.1.1 Field blanks: They are preserved/analyzed for all the same parameters as samples collected that day. They may be required in order to detect cross contamination from ambient air during a potable sampling if known sources are within proximity or monitoring equipment indicates their presence as background. Field blanks must also be taken once every day during sampling.

9.5.1.2 Trip blanks: Consists of a set of bottles each filled at the lab with analyte free water. They accompany the bottles both to and from each site. They are never opened in field. They are also returned in the same bottles they were sent out in. At minimum, a trip blank must be analyzed for volatile organics. Inclusion of additional parameters is at the discretion of the NJDEP. Trip blanks and the samples they accompany are not held on site more than 2 calendar days. A trip blank is included in each sample shipment or trip to field, not to exceed 2 consecutive field days.

9.5.2 Additional QA/QC samples:

9.5.2.1 Duplicate samples: Collection of a duplicate provides for evaluation of lab performance by comparing the analytical data of two samples from the same location. They are included 1 for every 20 samples (5% or 1 a day/site) and submitted as blind samples. They are obtained by alternately filling sample bottles from the same source/device for each parameter. VOA samples are from the same bailer and are the first set of bottles filled.

9.5.2.2 Matrix spike/Matrix spike duplicate analyses or MS/MSD sample: The lab is supplied with triple volume in order to perform matrix spike and matrix spike duplicates. This does not include trip or field blanks. They should occur every case of field samples, every 20-field samples or each 14-day calendar period in which a site is being worked at and samples collected.

9.6 Sample preservation: The laboratory staff based upon analytical requirements preserves the sample bottles. Please refer to SAM-0200 Sample Containers, Preservation, and Holding Times SOP and also NJDEP Field Sampling Procedures Manual Appendix 2-1 Analytical Methodology reference Charts, Pp. 35-61.

10 CALIBRATION:

10.1 All instruments used for field readings are calibrated before each day of use. The use of pH meters must start out with a calibration using buffer solution standards to check or calibrate accuracy. HNU's are calibrated with a known calibration gas. Dissolved oxygen meters are checked against a Winkler method test weekly. All calibrations for a given days use are recorded in the log provided for each instrument. Refer to equipment directions for calibration instruction. Like wise, specific conductivity meters are checked against standards regularly. Cooler thermometers are calibrated against a NIST traceable thermometer annually.

11 PROCEDURE:

11.1 The following articles document the procedures for sampling monitor wells. They are to be used as a guide by trained personnel in conjunction with the NJDEP Field Sampling Procedures Manual.

11.1.1 Proper bottle selection: Please refer to QA/QC section 9.

11.1.2 Equipment: Please refer to Equipment section 7.

11.1.3 Before purge activities: Certain instruments and meters are calibrated before use. Also, certain measurements and calculations are obtained before any purge activity can occur. The following is a list of information/data/steps required before purging and pertinent information recorded in logbooks or on well sheets: Date, time and weather conditions: Date and time are needed for holding time, and general record keeping. Weather conditions may affect ambient conditions at a particular site, so are therefore recorded. Tidal influences may also be included here, if wells are in a tidal area.

11.1.4 Well number and permit number: These are to be prominently displayed on the outside of the well according to NJDEP regulations for well construction. They also help to identify a particular well more exactly at a site.

11.1.5 Meter and instrument calibrations: Any meter utilized in the course of site sampling activities should be calibrated at this time, and then findings recorded in logbooks. Refer to section 10 and appropriate instrument/meter calibration directions.

11.1.6 PID or FID, HNU reading. This is taken from the wells inner casing immediately after the cap is removed, and the findings are recorded.

11.1.7 Free product check: Using ORS meter for interfaces, the presence or absence of product is determined. Thickness is measured and also recorded.

11.1.7.1 Light Non-Aqueous Phase Liquids (LNAPLs) and Dense Non-Aqueous Phase Liquids (DNAPLs): Measurement of thickness of DNAPLs and LNAPLs must be performed prior to purging wells. An interface probe may be used (ORS meter). Each layer of LNAPLs are sampled and analyzed for chemical and physical parameters. Sampling is by using a bottom filling bailer, lowered through LNAPL layer but not significantly down into next phase. DNAPLs are sampled using a dual check valve bailer or bladder pump. Both are then tested for chemical and physical properties. If both are present, it may be necessary to purge well of one casing volume of water prior to sampling DNAPL provided layer is not disturbed. This is done by setting a submersible pump or suction lift pump several feet above the DNAPL.

11.2 Dissolved oxygen, pH, temperature, and specific conductivity: Readings should be obtained and recorded on well sheets.

11.3 Total depth of well and depth to water: These readings are taken using a depth meter. Total depth of well, depth to water, and depth to screen are measured from the top of the inner casing or surveyor's mark. All are recorded on well sheets.

11.4 Calculations: Calculations are then done as stated in section 12.

11.5 Purging: When pre-purge activities are complete, the purging of the well can begin. This includes pre-entry to the well and pump setup.

11.6 Field Blank Sample: At this time the field blank is sampled. A new bailer is opened from its sealed package and then the field blank water is run over the bailer or sample equipment and collected into proper sample containers in the correct order.

11.7 Pre-entry to well: Before the tubing (refer to materials section) is inserted into the well, it must be wiped down and rinsed with DI water. Then inserted into the well leaving at maximum six feet of distance below water surface. Tubing is then lowered as depth drops, or as needed.

11.8 Pump setup: The peristaltic pump is then setup with its connection to battery and purging begun. Evacuation rate should not exceed that of well development, and total volume purged should not exceed 5 times the amount of standing water. Discharge water must be in compliance with those stated in section 13. Please refer to the NJDEP Field Sampling Procedures Manual as well.

11.9 After Purge: When purging is complete, the pump is removed and tubing is disposed of properly. Data in section 11.1 is then taken and recorded.

11.10 Pump removal: Using peristaltic pumps, the tubing is removed from the well at end of purge while pump still running. Tubing is then disposed of. The pump can then be shut down and decontaminated for next use as needed.

11.11 The following data must be recorded on well sheet: Start and end time of purge, purge method and purge rate. Total volume purged, dissolved oxygen, pH, temperature, and specific conductivity readings.

11.12 Ground water sampling: Following well evacuation procedures, groundwater sampling can begin. This is immediately after purge, not lapsing more than 2 hours afterwards. When multiple wells are being sampled, the least contaminated should be done first in order of ascending contamination. Sampling is done by using a bottom filling Teflon bailer, dedicated to that particular sampling event. The bailer is lowered slowly into the water until its submerged, and then slowly retrieved. Sample is then carefully transferred to sample containers. The first full bailer of water is used for sampling, it may not be discarded.

Sample order: Samples are collected in the following order:
volatile organics (VOA)
purgeable organic carbons (POC)
purgeable organic halogens (POX)
total organic halogens (TOX)
total organic carbon (TOC)
base neutrals/acid extractables
TPHC/oil and grease
PCB's/pesticides
total metals
dissolved metals
phenols, cyanide
sulfate and chloride
turbidity
nitrate and ammonia,
preserved inorganics
radionuclides
non-preserved inorganics
bacteria.

This order must be followed

11.13 Duplicates and matrix spikes/matrix spike duplicates: These samples are taken in the same order and at the same time as samples. Refer to sections 9.5.2 and 11.12.

11.14 After sampling: The following data is recorded on the well sheets: Start and end time of sampling, dissolved oxygen, pH, temperature, specific conductivity, and sampling method.

12 CALCULATIONS:

12.1 Four calculations must be done while in the field. The calculations are as follows: linear feet of water (height of water), the volume to be purged, the volume purged not to be exceeded, and purge rate.

12.1.1 Linear feet of water: This is calculated by knowing the total depth of the well and subtracting the depth to water measured by a depth meter. These two numbers should be measured to within .01 feet. Through this calculation, the linear feet of water is determined.

Equation: (Total well depth – Depth to water = linear feet of water)

12.1.2 Volume to be purged and volume not to be exceeded: The second calculation is to determine the minimum volume to be purged from a well before sampling. Utilizing the linear feet of water and then multiplying it by the volume per foot for the proper diameter casing (see Figure 1 below) equals the amount of water in casing. By multiplying the amount of water within a casing by 3 equals the total minimum volume to be purged. It should be noted here that the amount purged should not exceed 5x the amount of standing water in a well.

Equation:

linear ft of water x volume per ft well diameter = amount of water in casing)

then,

(amount of water in casing x 3 = minimum volume to be purged)

Equation:

(amount of water in casing x 5 = total volume **not** to be exceeded)

Figure 1: Capacity of Common Casing Diameters

Casing Diameter (ft.)	Gallons/linear foot
2 inch (0.1667)	0.1632
4 inch (0.3333)	0.6528
6 inch (0.5000)	1.4688
8 inch (0.6667)	2.6112
10 inch (0.8333)	4.0800
12 inch (1.0000)	5.8752

12.1.3 Purge rate: The purge rate is determined by calculating the length of time it takes for the pump to fill a 1-gallon bucket with water. The time is multiplied by the minimum volume to be purged. The gallons being purged is then divided by this number (which also happens to be the length of time the purge will take in minutes) which equals the gallons per minute or purge rate.

Equation:

(time x minimum volume to be purged = length of purge in minutes)

then,

(minimum volume to be purged / length of purge in minutes = gallons per minute or the purge rate)

13 POLLUTION PREVENTION:

13.1 For pollution prevention, please refer to SOP No. SAM-0222.

14 WASTE MANAGEMENT:

14.1 For sample disposal, please refer to SOP No. SAM-0220.

Attachment 1

FORT MONMOUTH ENVIRONMENTAL LABORATORY

STANDARD OPERATING PROCEDURE
REQUEST FOR REVISION FORM

SOP #: Sam-0205

CATEGORY: Sample Handling

REVISION: 4

TITLE: MW Sampling for IRP Sites at Ft. Monmouth

*REVISION (Section and Paragraph):

REASON FOR REVISION: Annual review Changed personnel titles

OTHER DOCUMENTS AFFECTED:

*(Attach additional information)

AUTHOR: Jackie Herman DATE: 4/17/08

APPROVAL: Akon Sandhu DATE: 4/22/08

CATEGORY: Sample Handling
TITLE: Monitor Well Sampling for IRP sites at Fort Monmouth

1 PURPOSE:
   1.1 To document current procedures for monitoring well sampling.

2 RESPONSIBILITY:
   2.1 Designated field samplers who have been properly trained and instructed in NJDEP field sampling procedures and protocol.

3 SAMPLE COLLECTION, PRESERVATION AND HANDLING:
   3.1 For sample collection, preservation and handling, please refer to SOP No. SAM-200.

4 REFERENCES:
   4.1 Field Sampling Procedures Manual, August 2005. New Jersey Department of Environmental Protection.
   4.2 NJDEP Field Analysis Manual, July 1994.
   4.3 On the World Wide Web: www.state.nj.us/dep or www.state.nj.us/dep/srp.
   4.4 Lab SOP: SAM-0200, SAM-0202, OQC-0302.

5 SUMMARY:
   5.1 The procedures, materials, and equipment describe the recommended methods for sampling monitoring wells. Necessary equipment, calibrations, calculations and appropriate QA/QC procedures are also included. These procedures are to be followed by all personnel involved with the sampling and purging of wells at Fort Monmouth. Persons following this SOP are recommended to also refer to the NJDEP Field Sampling Procedures Manual, August 2005.

6 SAFETY:
   6.1 For safety, please refer to CTSC Fort Monmouth, NJ Health and Safety Plan (HASP).

7 EQUIPMENT AND MATERIALS:
   7.1 Equipment:
      7.1.1 Dissolved oxygen meter

Prepared By: Jackie Hamer	Date: 4/17/08
Technical Supervisor: [illegible]	Date: 4/22/08
QA/QC Supervisor: Jackie Hamer	Date: 4/17/08

7.1.2 HNU photo ionizer
7.1.3 Conductivity/pH/temperature meter
7.1.4 Peristaltic well pumps
7.1.5 Pump heads and power cables
7.1.6 Water level meter
7.1.7 Oil/water interface probe
7.1.8 Submersible well pumps
7.1.9 Various batteries
7.1.10Buckets
7.1.11Miscellaneous tools, i.e. screwdriver, well wrench, etc.
7.1.12 A multi-parameter water quality meter may be used as long as it measures: Conductivity, pH, Temperature, and Dissolved Oxygen.

7.2 Materials:
7.2.1 Thick wall silicone tubing ¼ inch diameter
7.2.2 Polyethylene (food grade) tubing ¼ inch diameter
7.2.3 12 inch single sample 1 check stop Teflon disposable bailers
7.2.4 Mason string

8 STANDARDS/REAGENTS:

8.1 Buffer solutions, calibration gases, decontamination materials, and acids for preservation.
8.1.1 Buffer solutions:
8.1.1.1 7.00 standard buffer solution
8.1.1.2 10.00 standard buffer solution
8.1.1.3 4.00 standard buffer solution
8.1.2 Distilled and deionized water
8.1.3 Alconox
8.1.4 10 % nitric acid rinse (trace metal or higher grade HNO_3 diluted with distilled/deionized (ATSM Type II) H_2O).
8.1.5 Acetone (pesticide grade).
8.1.6 Pure nitrogen 100-ppm Isobutylene cal gas.
(Refer to NJDEP Field Sampling Procedure Manual Table 2-1 Aqueous Sampling Equipment Decontamination (Lab and Field) for further information).

8.2 Acids/materials used in preserving samples:
8.2.1 Nitric acid 69.0-70.0%
8.2.2 Sulfuric acid 50% (w/w) solution
8.2.3 Hydrochloric acid (trace metal grade)

8.3 Ice for keeping samples at <4 degrees Celsius

9 QUALITY CONTROL:

9.1 The following QA/QC requirements are established in order to maintain sample integrity. The prime objective is to prevent sample contamination from other sources and ensure potential contaminant concentrations remain stable form sample collection to complete analysis. Refer to the NJDEP Field Sampling Procedures Manual Appendix 2-1 Analytical Methodology Reference Charts, Pp. 35-61. Also refer to SAM-0200 Sample Containers, Preservation and Holding Times.

9.2 Sample Containers: Before sample collection can begin consideration must be given as to what type of container will be used to transport and store samples. The lab provides containers based upon requested methodologies. Selection is based on the matrix, potential contaminants, analytical methods, and lab's internal QA/QC requirements. They should be selected upon review of the following:

9.2.1 Reactivity of container material with sample. Glass is recommended for hazardous material samples since it is chemically inert to most substances. Plastics may be used when analytes of interest or sample characteristics dictate use instead of glass.

9.2.2 Volume of the container. The volume of sample needed is dictated by the analytical method and the matrix of the sample. The lab will supply bottles that allow for sufficient volumes of sample matrix to be collected.

9.2.3 Color of container. Whenever possible, amber glass is used to prevent photo degradation. If not available, samples should be kept protected from light. One exception is the 40 ml clear glass VOA vials used for VOA aqueous analysis.

9.2.4 Container closures. All containers utilized have a leak-proof seal and are constructed out of material inert with respect to sampled materials. The closure may also be separated by a closure liner that is inert to sample material.

9.2.5 Decontamination of containers and chain of custody. Sample containers are laboratory cleaned or purchased as lab cleaned. Bottles being shipped are accompanied with a chain of custody in a cooler with a custody seal. Custody must accompany containers to field, during collection, back to lab, and during analysis. This helps to assure no tampering or contamination from outside sources occurs.

9.3 Storage and transport. Care is taken to avoid contamination. Clean transport and storage environments are observed. Sample or bottle storage is never near solvents, gasoline, or other equipment that is a potential source of contamination. Samples and chain of custody are secured in coolers for transport, with said chain of custody in with bottles or in the hands of authorized personnel. Also, a temperature blank is included in each cooler to measure the temperature of samples on ice in coolers (ideally a constant 4 degrees Celsius).

9.4 Tubing decontamination: ASTM drinking water grade polyethylene tubing is used and discarded after each use. Avoid pump and tubing contact with ground surface. All tubing is rinsed/wiped with distilled and deionized water to remove any possible residual materials on it before entering well.

9.5 QA/QC samples: These samples are intended to provide control over the collection of measurements, and subsequent validation, review, and interpretation of analytical data. A trip blank is used for volatile organics and its purpose is to measure possible cross contamination of samples in transit and at a site. It is **never** opened and travels to the site or sites **with** empty sample bottles and back **with** samples. They may also indicate poor cleaning. Like wise, a field blank is used to determine a control on the equipment handling, preparation, storage and shipment. It travels with the samples and is representative of shipment effects on sample quality. By being opened in the field, transferred over a cleaned sampling device, the blank is indicative of ambient and equipment conditions that may affect quality of associated samples. It also serves as an additional check on possible sources of contamination. Blank water is demonstrated analyte free, and is from the same common source and physical locale in lab.

9.5.1 Aqueous matrix QA/QC blank requirements:

9.5.1.1 Field blanks: They are preserved/analyzed for all the same parameters as samples collected that day. They may be required in order to detect cross contamination from ambient air during a potable sampling if known sources are within proximity or monitoring equipment indicates their presence as background. Field blanks must also be taken once every day during sampling.

9.5.1.2 Trip blanks: Consists of a set of bottles each filled at the lab with analyte free water. They accompany the bottles both to and from each site. They are never opened in field. They are also returned in the same bottles they were sent out in. At minimum, a trip blank must be analyzed for volatile organics. Inclusion of additional parameters is at the discretion of the NJDEP. Trip blanks and the samples they accompany are not held on site more than 2 calendar days. A trip blank is included in each sample shipment or trip to field, not to exceed 2 consecutive field days.

9.5.2 Additional QA/QC samples:

9.5.2.1 Duplicate samples: Collection of a duplicate provides for evaluation of lab performance by comparing the analytical data of two samples from the same location. They are included 1 for every 20 samples (5% or 1 a day/site) and submitted as blind samples. They are obtained by alternately filling sample bottles from the same source/device for each parameter. VOA samples are from the same bailer and are the first set of bottles filled.

9.5.2.2 Matrix spike/Matrix spike duplicate analyses or MS/MSD sample: The lab is supplied with triple volume in order to perform matrix spike and matrix spike duplicates. This does not include trip or field blanks. They should occur every case of field samples, every 20-field samples or each 14-day calendar period in which a site is being worked at and samples collected.

9.6 Sample preservation: The laboratory staff based upon analytical requirements preserves the sample bottles. Please refer to SAM-0200 Sample Containers, Preservation, and Holding Times SOP and also NJDEP Field Sampling Procedures Manual Appendix 2-1 Analytical Methodology reference Charts, Pp. 35-61.

10 CALIBRATION:

10.1 All instruments used for field readings are calibrated before each day of use. The use of pH meters must start out with a calibration using buffer solution standards to check or calibrate accuracy. HNU's are calibrated with a known calibration gas. Dissolved oxygen meters are checked against a Winkler method test weekly. All calibrations for a given days use are recorded in the log provided for each instrument. Refer to equipment directions for calibration instruction. Like wise, specific conductivity meters are checked against standards regularly. Cooler thermometers are calibrated against a NIST traceable thermometer annually.

11 PROCEDURE:

11.1 The following articles document the procedures for sampling monitor wells. They are to be used as a guide by trained personnel in conjunction with the NJDEP Field Sampling Procedures Manual.

11.1.1 Proper bottle selection: Please refer to QA/QC section 9.

11.1.2 Equipment: Please refer to Equipment section 7.

11.1.3 Before purge activities: Certain instruments and meters are calibrated before use. Also, certain measurements and calculations are obtained before any purge activity can occur. The following is a list of information/data/steps required before purging and pertinent information recorded in logbooks or on well sheets: Date, time and weather conditions: Date and time are needed for holding time, and general record keeping. Weather conditions may affect ambient conditions at a particular site, so are therefore recorded. Tidal influences may also be included here, if wells are in a tidal area.

11.1.4 Well number and permit number: These are to be prominently displayed on the outside of the well according to NJDEP regulations for well construction. They also help to identify a particular well more exactly at a site.

11.1.5 Meter and instrument calibrations: Any meter utilized in the course of site sampling activities should be calibrated at this time, and then findings recorded in logbooks. Refer to section 10 and appropriate instrument/meter calibration directions.

11.1.6 PID or FID, HNU reading. This is taken from the wells inner casing immediately after the cap is removed, and the findings are recorded.

11.1.7 Free product check: Using ORS meter for interfaces, the presence or absence of product is determined. Thickness is measured and also recorded.

11.1.7.1 Light Non-Aqueous Phase Liquids (LNAPLs) and Dense Non-Aqueous Phase Liquids (DNAPLs): Measurement of thickness of DNAPLs and LNAPLs must be performed prior to purging wells. An interface probe may be used (ORS meter). Each layer of LNAPLs are sampled and analyzed for chemical and physical parameters. Sampling is by using a bottom filling bailer, lowered through LNAPL layer but not significantly down into next phase. DNAPLs are sampled using a dual check valve bailer or bladder pump. Both are then tested for chemical and physical properties. If both are present, it may be necessary to purge well of one casing volume of water prior to sampling DNAPL provided layer is not disturbed. This is done by setting a submersible pump or suction lift pump several feet above the DNAPL.

11.2 Dissolved oxygen, pH, temperature, and specific conductivity: Readings should be obtained and recorded on well sheets.

11.3 Total depth of well and depth to water: These readings are taken using a depth meter. Total depth of well, depth to water, and depth to screen are measured from the top of the inner casing or surveyor's mark. All are recorded on well sheets.

11.4 Calculations: Calculations are then done as stated in section 12.

11.5 Purging: When pre-purge activities are complete, the purging of the well can begin. This includes pre-entry to the well and pump setup.

11.6 Field Blank Sample: At this time the field blank is sampled. A new bailer is opened from its sealed package and then the field blank water is run over the bailer or sample equipment and collected into proper sample containers in the correct order.

11.7 Pre-entry to well: Before the tubing (refer to materials section) is inserted into the well, it must be wiped down and rinsed with DI water. Then inserted into the well leaving at maximum six feet of distance below water surface. Tubing is then lowered as depth drops, or as needed.

11.8 Pump setup: The peristaltic pump is then setup with its connection to battery and purging begun. Evacuation rate should not exceed that of well development, and total volume purged should not exceed 5 times the amount of standing water. Discharge water must be in compliance with those stated in section 13. Please refer to the NJDEP Field Sampling Procedures Manual as well.

11.9 After Purge: When purging is complete, the pump is removed and tubing is disposed of properly. Data in section 11.1 is then taken and recorded.

11.10 Pump removal: Using peristaltic pumps, the tubing is removed from the well at end of purge while pump still running. Tubing is then disposed of. The pump can then be shut down and decontaminated for next use as needed.

11.11 The following data must be recorded on well sheet: Start and end time of purge, purge method and purge rate. Total volume purged, dissolved oxygen, pH, temperature, and specific conductivity readings.

11.12 Ground water sampling: Following well evacuation procedures, groundwater sampling can begin. This is immediately after purge, not lapsing more than 2 hours afterwards. When multiple wells are being sampled, the least contaminated should be done first in order of ascending contamination. Sampling is done by using a bottom filling Teflon bailer, dedicated to that particular sampling event. The bailer is lowered slowly into the water until its submerged, and then slowly retrieved. Sample is then carefully transferred to sample containers. The first full bailer of water is used for sampling, it may not be discarded.

Sample order: Samples are collected in the following order:

volatile organics (VOA)
purgeable organic carbons (POC)
purgeable organic halogens (POX)
total organic halogens (TOX)
total organic carbon (TOC)
base neutrals/acid extractables
TPHC/oil and grease
PCB's/pesticides
total metals
dissolved metals
phenols, cyanide
sulfate and chloride
turbidity
nitrate and ammonia,
preserved inorganics
radionuclides
non-preserved inorganics
bacteria.

This order must be followed

11.13 Duplicates and matrix spikes/matrix spike duplicates: These samples are taken in the same order and at the same time as samples. Refer to sections 9.5.2 and 11.12.

11.14 After sampling: The following data is recorded on the well sheets: Start and end time of sampling, dissolved oxygen, pH, temperature, specific conductivity, and sampling method.

12 CALCULATIONS:

12.1 Four calculations must be done while in the field. The calculations are as follows: linear feet of water (height of water), the volume to be purged, the volume purged not to be exceeded, and purge rate.

12.1.1 Linear feet of water: This is calculated by knowing the total depth of the well and subtracting the depth to water measured by a depth meter. These two numbers should be measured to within .01 feet. Through this calculation, the linear foot of water is determined.

Equation: (Total well depth – Depth to water = linear feet of water)

12.1.2 Volume to be purged and volume not to be exceeded: The second calculation is to determine the minimum volume to be purged from a well before sampling. Utilizing the linear feet of water and then multiplying it by the volume per foot for the proper diameter casing (see Figure 1 below) equals the amount of water in casing. By multiplying the amount of water within a casing by 3 equals the total minimum volume to be purged. It should be noted here that the amount purged should not exceed 5x the amount of standing water in a well.

Equation:

linear ft of water x volume per ft well diameter = amount of water in casing)

then,

(amount of water in casing x 3 = minimum volume to be purged)

Equation:

(amount of water in casing x 5 = total volume **not** to be exceeded)

Figure 1: Capacity of Common Casing Diameters

Casing Diameter (ft.)	Gallons/linear foot
2 inch (0.1667)	0.1632
4 inch (0.3333)	0.6528
6 inch (0.5000)	1.4688
8 inch (0.6667)	2.6112
10 inch (0.8333)	4.0800
12 inch (1.0000)	5.8752

12.1.3 Purge rate: The purge rate is determined by calculating the length of time it takes for the pump to fill a 1-gallon bucket with water. The time is multiplied by the minimum volume to be purged. The gallons being purged is then divided by this number (which also happens to be the length of time the purge will take in minutes) which equals the gallons per minute or purge rate.

Equation:

(time x minimum volume to be purged = length of purge in minutes)

then,

(minimum volume to be purged / length of purge in minutes = gallons per minute or the purge rate)

13 POLLUTION PREVENTION:

13.1 For pollution prevention, please refer to SOP No. SAM-0222.

14 WASTE MANAGEMENT:

14.1 For sample disposal, please refer to SOP No. SAM-0220.

Appendix D

NJDEP Approval Letter, November 10, 2004, *Reduction of Ground Water Sampling Analyses – Main Post and Charles Woods, Fort Monmouth, New Jersey*

Guenther, Douglas C MONMOUTH USAG

From: Greg Zalaskus [Greg.Zalaskus@dep.state.nj.us]
Sent: Friday, November 12, 2004 2:03 PM
To: Douglas.Guenther@mail1.monmouth.army.mil
Cc: John Prendergast; Ken Petrone; Joseph.Fallon@mail1.monmouth.army.mil
Subject: Re: GROUNDWATER ANALYSES REDUCTION

Doug: The Department has completed a review of your November 10, 04 letter request to reduce the groundwater sampling analysis for the seven site listed in the November 10, 04 letter. The Department hereby approves your request as submitted. Additionally, the updated "Restoration Program Site Report Status Table" you e-mailed is most appreciated. If you have any questions please contact me.

Sincerely, greg

Gregory Zalaskus, Case Manager
NJDEP/DRMR/BCM
Greg.Zalaskus@dep.state.nj.us
609-984-2065 (direct)
609-633-1439 (fax)
609-633-1455 (main)

>>> "Guenther, Douglas C MONMOUTH USAG"
<Douglas.Guenther@mail1.monmouth.army.mil> 11/10/04 01:28PM >>> Greg,

As discussed, attached is the letter identifying analyses reduction at restoration sites and a summary of submitted site reports pending NJDEP review. A hard copy is on the way. Any questions let me know.

Sincerely,

Douglas C. Guenther

Environmental Protection Specialist

U.S. Army, Directorate of Public Works

Attn: SELFM-PW-EV, Bldg. 173

Fort Monmouth, NJ 07703

Phone: 732-532-0986; Fax: 732-532-6263; DSN: 992-0986

E-mail: Douglas.Guenther@Mail1.Monmouth.Army.mil

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5101

REPLY TO
ATTENTION OF

Directorate of Public Works

November 10, 2004

ATTN: Mr. Greg Zalaskus
State of New Jersey
Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Case Management
401 East State Street, 5th Fl., West Wing
PO Box 028
Trenton, New Jersey 08625-0028

RE: **REDUCTION OF GROUNDWATER SAMPLING ANALYSES– MAIN POST&CHARLES WOODS**
Restoration Sites throughout Fort Monmouth, New Jersey

Dear Mr. Zalaskus:

As discussed during our telephone conversation on November 9, 2004, this letter summarizes groundwater sampling revisions at seven active restoration sites on Fort Monmouth property. The Directorate of Public Works (DPW) and TECOM-Vinnell Services (TVS) personnel currently conduct quarterly groundwater monitoring at each of these sites.

The DPW has submitted Remedial Investigation Reports (RIRs), prepared by VERSAR, Inc., requesting no further action (NFA) at four sites including Landfill M-12 (FTMM-12), Landfill M-18/290/296 (FTMM-18/55/54), Landfill M-3 (FTMM-03), and Site 108 (FTMM-57). Two RIRs requesting NFA are pending submittal including Site 80/166 (FTMM-56) and Landfill CW3A (FTMM-25), and one Remedial Action Report for Site 886 (FTMM-66) recommending natural attenuation is also pending submittal.

Initial groundwater sampling at each site consisted of a comprehensive analytical program including volatile organic compounds (VOCs); semi-volatile organic compounds (SVOCs); pesticides/polychlorinated biphenyls (PCBs); and TAL metals. Analytical results were then examined to establish potential contaminants of concern (COCs). Each site report presents the identified potential COCs based on the comparison of groundwater analytical results to the higher of the Practical Quantitation Limits (PQLs) and the NJDEP Groundwater Quality Criteria (GWQC) for Class II-A aquifers (NJAC 7:9-6, Table 1). Further evaluation of the potential COCs was then performed to assess contaminant occurrence/magnitude, transport (modeling), and risk to receptors, the environment and human health to determine if remedial action was warranted.

Based on report conclusions, Fort Monmouth DPW proposes the following revisions to the current groundwater sampling program at these sites to maintain a compliant and cost effective program. As discussed, proposed changes will be implemented immediately unless otherwise directed by the NJDEP.

The following table summarizes the revised sampling program at these sites:

Submitted No Further Action Requests

Site	Was Analyzed:	Revised Analysis:	Potential Contaminants of Concern
Landfill M-12 (FTMM-12)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Arsenic and lead
Landfill M-18/290/296 (FTMM-18/55/54)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs and TAL Metals.	Benzene, arsenic, cadmium, chromium and lead
Landfill M-3 (FTMM-03)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs.	Chlorobenzene
Site 108 (FTMM-57)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Arsenic
No Further Action Requests - Submittal Pending			
Site 80/166 (FTMM-56)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for Pesticides and TAL Metals.	a-chlordane, g-chlordane, arsenic and lead
Landfill CW3A (FTMM-25)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Non-Native Metals
Natural Attenuation Request - Submittal Pending			
Site 886 (FTMM-66)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs and SVOCs	Benzene and 2-butanone

Groundwater sampling and monitoring will continue at these sites as indicated above, in accordance with NJDEP *Technical Requirements for Site Remediation* (July 1999), NJAC 7:26E, et seq. and *Fort Monmouth Standard Sampling Operating Procedure* (1997), pending NJDEP review of these site documents. I have attached an updated summary table of site reports previously submitted to NJDEP which are pending review.

If you should have any questions or comments, please contact me at (732) 532-0986.

Sincerely,

Douglas C. Guenther
Environmental Protection Specialist
Directorate of Public Works

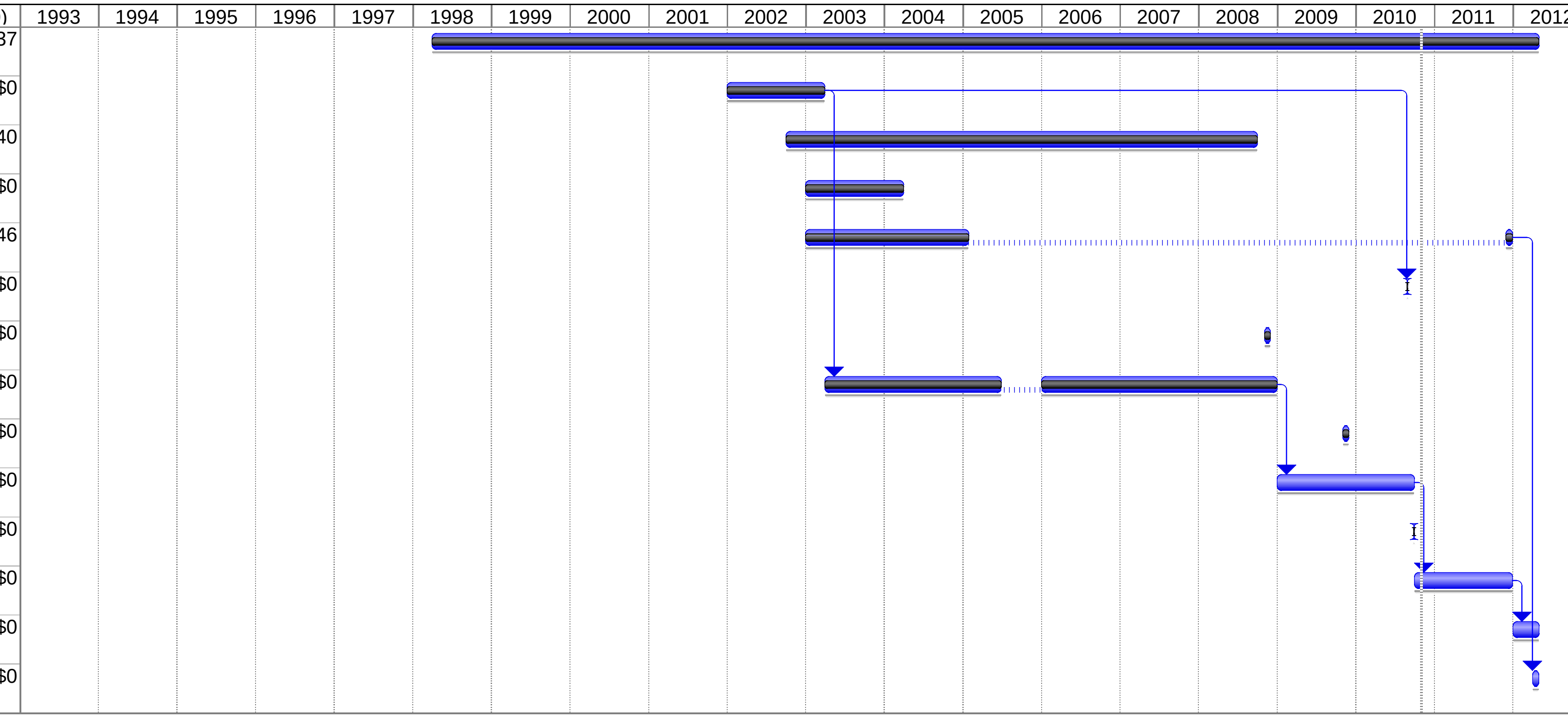
Attachment: Restoration Program Report Status Table
cc: File

Appendix E

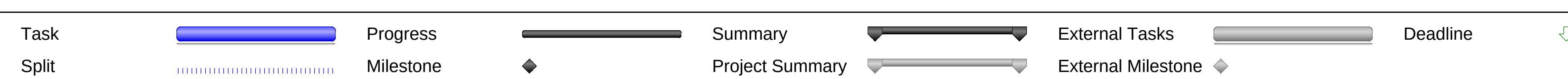
Costs and Schedule for Site 886

Fort Monmouth Installation Restoration Program, Site 886, FTMM-66, Schedule and Cost Summary

ID	Task Name	Start	Finish	Notes	COST ($000)
1	Bldg. 886, AST FTMM-66 Total Cost	Wed 4/1/98	Tue 5/1/12		$137
2	RI / Remedial Action Report for Soil & GW cont., January 2006	Tue 1/1/02	Mon 3/31/03	Versar Inc.	$0
3	Remedial Action - Operation	Wed 10/2/02	Tue 9/30/08		$140
4	Product Recovery System Operation	Wed 1/1/03	Wed 3/31/04		$0
5	LTM (Qtrly Monitoring Mar, May Aug & Dec)	Wed 1/1/03	Fri 12/30/11		$46
6	NJDEP approved RIR/RAWP	Fri 8/27/10	Mon 8/30/10		$0
7	Annual MW Inspections 2008	Mon 11/3/08	Sun 11/30/08		$0
8	RAPR 2003-2008 (2rd qtr '03 to 4th qtr '08) July 2010	Tue 4/1/03	Wed 12/31/08	VEETech Inc.	$0
9	Annual MW Inspections 2009	Mon 11/2/09	Mon 11/30/09		$0
10	Annual RAPR 2009-2010 (1st qtr '09 to 3rd qtr '10)	Thu 1/1/09	Thu 9/30/10		$0
11	Annual MW Inspections 2010	Mon 9/27/10	Thu 9/30/10		$0
12	RAPR 2010-2011 (4th Qtr '10 to 4th Qtr '11)	Fri 10/1/10	Fri 12/30/11		$0
13	Final RA Report and CEA	Mon 1/2/12	Tue 5/1/12		$0
14	MW Abandonment / Site Restoration	Mon 4/2/12	Mon 4/30/12		$0



Costs are primarily based on the DPW Obligation List.
Dated 10-29-08



APPENDIX K: FTMM-66 Building 886 Former AST

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A	LFPS Field Sheets

1.0 WATER LEVEL MEASUREMENTS AND WELL ASSESSMENT

Monitoring wells located within FTMM-66 were gauged on October 2, 2015. Monitoring well locations as well as other site features are provided in **Figure 1**. Details regarding the water level measurements are provided in **Table 1**. Groundwater elevations in monitoring wells ranged from 5.35 (886MW01) to 9.48 (886RW06) feet above mean sea level (amsl). The inferred shallow groundwater flow direction is generally to the north-northwest, as shown in **Figure 2**.

During the groundwater gauging, the physical condition of FTMM-66 monitoring wells were assessed. The site monitoring wells were found to be in good condition.

2.0 GROUNDWATER SAMPLING

Groundwater samples were collected from three monitoring wells located at FTMM-66 as part of the annual (fourth quarter) 2015 groundwater sampling event. The groundwater sampling program included measuring the depth to groundwater in monitoring wells prior to sampling and collection of groundwater samples using low-flow purging and sampling (LFPS). Groundwater samples were collected from wells 886RW01, 886RW06 and 886RW08 on November 20 and 23, 2015. Groundwater samples were analyzed for Target Compound List (TCL) semi-volatile organic compounds (SVOCs) plus Tentatively Identified Compounds (TICs) via USEPA method SW8270D.

The samples were collected in accordance with the New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (FSPM) and the Sampling Analysis Plan (SAP). Field blanks, duplicates, matrix spike, matrix spike duplicate and quality assurance (QA) split samples were collected for every 5% of samples collected per parameter, per matrix, in accordance with the Quality Assurance Project Plan (QAPP). Trip blanks accompanied each cooler each day in which VOCs were collected for laboratory analysis.

The completed LFPS field sheets can be found in **Attachment A**.

3.0 HISTORICAL GROUNDWATER SAMPLING RESULTS

From February 2003 through October 2004, FTMM-66 monitoring wells were sampled for volatile organic compounds (VOCs), SVOCs, total petroleum hydrocarbons (TPH) and metals. From January 2005 to December 2009, FTMM-66 wells were sampled for VOCs and SVOCs. From February 2010 to May 2010, monitoring wells were sampled for VOCs, SVOCs and metals.

In the last four rounds of quarterly groundwater sampling conducted at FTMM-66 from August 2010 to April 2011, samples were also analyzed for VOCs, SVOCs and metals. Within the last four rounds of groundwater sampling at FTMM-66, bis(2-ethylhexyl) phthalate, antimony, arsenic, beryllium and lead were detected above their respective NJDEP Ground Water Quality Standard (GWQS) in monitoring well 886MW01. The bis(2-ethylhexyl) phthalate detections appear to be anomalous as there is no historical trend of bis(2-ethylhexyl) phthalate detections above the GWQS. The detection of phthalates is attributed to the laboratory; it is considered a common laboratory contaminant since it is present in all laboratory equipment and reagents. The concentrations of antimony, arsenic, beryllium and lead were all below site background conditions (Weston, 1995).

No VOCs or SVOCs were detected in exceedance of any NJDEP GWQS within the last four rounds of historical groundwater sampling. Historical groundwater analytical results are presented in **Table 2**.

During the August 2013 Baseline Sampling Event, thirteen monitoring wells were sampled for VOCs, SVOCs and lead. One parameter, SVOC total tentatively identified compounds (TICs) was detected above its NJDEP GWQS of 500 µg/L at monitoring wells 886RW01 (879 µg/L) and 886RW08 (707 JN µg/L). Groundwater analytical results from samples collected during the August 2013 sampling event are presented in **Table 3**.

The Final August 2013 Baseline Groundwater Sampling Report was accepted by the NJDEP in their February 5, 2015 letter. Based on this approval, 10 out of the 13 groundwater monitoring wells were removed from the long-term monitoring (LTM) program including 886MW01, 886MW02, 886MW03, 886MW04, 886MW05, 886RW02, 886RW03, 886RW04, 886RW05 and 886RW07; and VOC and lead analyses were discontinued.

SVOC total TICs was the only parameter detected in monitoring wells 886RW01 and 886RW08 during the 2014 annual sampling event. Concentrations (15.4J µg/L and 46.4J µg/L respectively) were below the NJDEP GWQS of 500 µg/L. SVOCs were non-detect in the sample collected from 886RW06. Groundwater analytical results from 2014 sampling event are presented in **Table 3**. Based on the collective data, the Annual (Fourth Quarter) 2014 Groundwater Sampling Report recommended that one additional sampling round was needed to demonstrate that SVOC total TICs are below the NJDEP GWQS and discontinue the long-term monitoring program for the site. This was accepted by the NJDEP in their January 26, 2016 letter.

4.0 ANNUAL (FOURTH QUARTER) 2015 GROUNDWATER RESULTS

SVOC total TICs were only detected in monitoring well 886RW01 during the 2015 Annual Sampling Event. The estimated concentration (18JN µg/L) is below the NJDEP GWQS of 500 µg/L. SVOCs were non-detect in the samples collected from 886RW06 and 886RW08. Groundwater analytical results from 2015 sampling event are presented in **Table 3**.

5.0 FINDINGS AND RECOMMENDATIONS

Historically, SVOCs (including total TICs) have been detected below the NJDEP GWQS with only a few instances in 2009 and 2010 where bis(2-ethylhexyl)phthalate and total TICs have been above the GWQS. Concentrations of SVOCs (including total TICs) detected during the 2014 and 2015 sampling events were non-detect or below their NJDEP GWQS in wells 886RW01, 886RW06 and 886RW08. Based on the available data, it is recommended to discontinue the LTM sampling s at 886RW01, 886RW06 and 886RW08 and a no further action determination will be requested for groundwater at this site. A review of the historical groundwater sampling results is presented in **Table 4,** which provides the matrix used to determine the status of the wells relative to future groundwater sampling and analyses.

TABLES

Table 1 Groundwater Gauging Data and Elevations (October 2, 2015) and LFPS Sampling Summary

Table 2 Historical Groundwater Analytical Results

Table 3 Groundwater Analytical Results - 2013, 2014 and 2015

Table 4 Review of Historical Groundwater Sampling Results

Table 1
Groundwater Gauging Data and Elevations (October 2, 2015) and LFPS Sampling Summary
Site FTMM-66 Building 886 Former AST
Annual (Fourth Quarter) 2015 Groundwater Sampling Report
Fort Monmouth, New Jersey

Site/Well ID	Installation Date	Well Permit #	Y Coord. (North)	X Coord. (East)	Depth (ft. bgs)	Casing Length (ft)	Screen Length (ft)	TOC Elevation (ft)	Gauge Time	PID Reading (ppm)	Gauged Depth to Water (ft. TOC)	Gauged Depth to Bottom (ft. TOC)	Calculated Groundwater Elevation (ft)	Date Sampled
Shallow Monitoring Wells														
886MW01	1/8/2003	29-47835	538325.48	620981.00	17.0	2.0	15.0	12.95	11:58	0.0	7.60	17.30	5.35	
886MW02	1/8/2003	29-47836	538217.44	620928.79	17.0	2.0	15.0	12.90	10:49	0.0	5.87	16.95	7.03	
886MW03	1/8/2003	29-47837	538302.92	621071.25	17.0	2.0	15.0	13.70	12:22	0.0	7.25	17.20	6.45	
886MW04	1/8/2003	29-47838	538089.47	621100.44	17.0	2.0	15.0	18.22	12:30	0.0	8.86	20.35	9.36	
886MW05	1/8/2003	29-47839	538253.49	621193.80	17.0	2.0	15.0	18.29	12:26	0.0	11.63	19.45	6.66	
886MW06	12/9/2010	E201012412	538300.00	620950.00	20.0	5.0	15.0	13.84	11:46	0.0	6.13	19.80	7.71	
886RW01	1/7/2003	29-47840	538241.42	620972.44	17.0	2.0	15.0	13.62	11:13	0.0	6.97	16.18	6.65	11/23/2015
886RW02	1/7/2003	29-47841	538251.08	620895.34	17.0	2.0	15.0	13.92	11:19	0.0	7.32	17.00	6.60	
886RW03	1/7/2003	29-47842	538274.31	620998.04	17.0	2.0	15.0	13.96	11:27	0.0	6.55	16.15	7.41	
886RW04	1/7/2003	29-47843	538263.45	620990.21	17.0	2.0	15.0	13.80	11:24	0.0	7.20	16.82	6.60	
886RW05	1/7/2003	29-47844	538280.46	620985.98	17.0	2.0	15.0	13.71	11:23	0.0	7.23	15.00	6.48	
886RW06	1/7/2003	29-47845	538273.33	621052.87	17.0	2.0	15.0	15.00	12:19	0.0	5.52	15.22	9.48	11/23/2015
886RW07	1/9/2003	29-47846	538252.30	621047.21	17.0	2.0	15.0	14.32	12:14	0.0	7.81	16.15	6.51	
886RW08	1/10/2003	29-47847	538229.91	621038.87	17.0	2.0	15.0	13.84	12:11	0.0	7.22	15.70	6.62	11/20/2015

Notes:
1) The synoptic round of water levels in the wells was collected on October 2, 2015.
2) Information on well permit number, X and Y coordinates, depth, screen length, screen interval and TOC elevation were provided by FTMM in a table in June 2013.
3) ft = feet
4) DTW = depth to water (measured from the top of well casing)
5) DTB = depth to bottom of well (measured from the top of well casing)
6) bgs = below ground surface
7) ppm = parts per million (of VOCs)
8) TOC = Top of Casing
9) Elevation = feet above mean sea level
10) N/A = information not available
11) LFPS = Low-Flow Purging and Sampling

Table 2
Historical Groundwater Analytical Results
Site FTMM-66 Building 886 Former AST
Annual (Fourth Quarter) 2015 Groundwater Sampling Report
Fort Monmouth, New Jersey

				886MW01																	
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	886MW01	MW01 Dup	886MW01	MW01 Dup	886MW01	MW01 Dup	886MW01	MW01 Dup	886MW01	886MW01	MW01 Dup	886MW01	886MW01	MW01 Dup	886MW01	886MW01	MW01 Dup	LF1
Date Collected				8/2/2007	8/2/2007	10/12/2007	10/12/2007	3/27/2008	3/27/2008	6/25/2008	6/25/2008	9/16/2008	11/12/2008	11/12/2008	2/11/2009	6/10/2009	6/10/2009	9/28/2009	12/15/2009	12/15/2009	2/24/2010
Volatile Organic Compounds (µg/L)																					
Acetone	6,000	NLE	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether	70	NLE	--	ND	ND	3.86	4.46	2.48	NA	16.76	17.05	3.88	2.21	2.29	ND	0.24 J	0.26 J	4.85	0.92	0.85	1.44
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	0.38 J	NA	ND	ND	ND	ND	ND	ND	0.26 J	0.26 J	ND	0.31 J	0.31 J	ND
TICs*	500	NLE		ND	ND	ND	ND	242	NA	ND	ND	ND	13	11	200	119	124	ND	84	82	41
Total Petroleum Hydrocarbons (mg/L)																					
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																					
Acenaphthene	400	NLE	--	ND	ND	ND	ND	6.18	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.91	1.93	2.08
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.5	1.3 J	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7 J	1.8 J	2.2 J
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.96	1.91	2.31
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6 J	1.6 J	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	ND	ND	ND	ND	170.46	NA	ND	ND	61	19	4	15	96	90	ND	84.9	78.9	43.5
Metals (µg/L)																					
Antimony	6	6	20.70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
Arsenic	3	10	89.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.00 ER
Barium	6,000	2,000	699.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.7
Beryllium	1	4	2.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
Cadmium	4	5	9.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
Chromium	70	100	191.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
Copper	1,300	1,300	65.60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
Lead	5	15	22.70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND
Nickel	100	NLE	187	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.90 ER
Selenium	40	50	29.60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR

Notes:
Shaded cells = concentrations exceed the NJDEP GWQS
*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.
NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)
U.S. Environmental Protection Agency Maximum Contaminant Level (2012)
LF = Low-flow sampling method used to collect sample
ER - Estimated result
J - Estimated concentration exceeds the MDL and is less than the RL
NA - Not analyzed NR - Not reported
ND - Not detected
NLE - No limit established
a/ Elevated sample detection limit due to difficult sample matrix.

Table 2
Historical Groundwater Analytical Results
Site FTMM-66 Building 886 Former AST
Annual (Fourth Quarter) 2015 Groundwater Sampling Report
Fort Monmouth, New Jersey

				886MW01						**886MW02**										
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	LF2	LF3	LF4	LF5	LF5 Dup	LF6	886MW02	886MW02	886MW02	886MW02	886MW02	886MW02	886MW02	MW02 Dup	886MW02	886MW02	886MW02
Date Collected				5/24/2010	8/5/2010	10/13/2010	2/11/2011	2/11/2011	4/7/2011	8/2/2007	10/12/2007	3/27/2008	6/25/2008	9/16/2008	11/12/2008	2/11/2009	2/11/2009	6/10/2009	9/28/2009	12/15/2009
Volatile Organic Compounds (µg/L)																				
Acetone	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether	70	NLE	--	1	1.98	0.73	0.32 J	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.35 J	ND	ND
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	ND	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE		27	ND	ND	99	99	123	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons (mg/L)																				
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																				
Acenaphthene	400	NLE	--	0.535	ND	ND	4	3.85	3.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	2,000	NLE	--	ND	ND	ND	0.166	0.164	0.179	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	1.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	1.9 J	ND	ND	2.6 J	2.6 J	3.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	1.65	ND	ND	3.17	3.19	3.71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	ND	1.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	0.345	0.339	0.241	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	9	ND	ND	97	105.6	167.9	ND	15	39.3	ND	23	4	11	14	6	10	ND
Metals (µg/L)																				
Antimony	6	6	20.70	5.01 ER	9.32 ER	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	10	89.30	9.1	2.81 ER	2.25	9.8	10.3	19.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6,000	2,000	699.00	8.79	40.2	82.3	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	4	2.10	0.051 ER	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	5	9.50	0.511 ER	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	100	191.00	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1,300	1,300	65.60	1.27 ER	1.98 ER	ND	ND	ND	93.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	15	22.70	3.68 ER	ND	ND	ND	ND	6.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NLE	187	ND	4.37 ER	13.6	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	50	29.60	NR	NR	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Shaded cells = concentrations exceed the NJDEP GWQS

*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.

NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)

U.S. Environmental Protection Agency Maximum Contaminant Level (2012)

LF = Low-flow sampling method used to collect sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed NR - Not reported

ND - Not detected

NLE - No limit established

a/ Elevated sample detection limit due to difficult sample matrix.

Table 2
Historical Groundwater Analytical Results
Site FTMM-66 Building 886 Former AST
Annual (Fourth Quarter) 2015 Groundwater Sampling Report
Fort Monmouth, New Jersey

				886MW02												886MW03							
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	LF1	LF1 Dup	LF2	LF2 Dup	LF3	LF3 Dup	LF4	LF4 Dup	LF5	LF5 Dup	LF6	LF6 Dup	886MW03	886MW03	886MW03	MW03 Dup	886MW03	886MW03	886MW03	886MW03
Date Collected				2/22/2010	2/22/2010	5/24/2010	5/24/2010	8/4/2010	8/4/2010	10/12/2010	10/12/2010	2/9/2011	2/9/2011	4/7/2011	4/7/2011	8/2/2007	10/12/2007	3/28/2008	3/28/2008	6/25/2008	9/16/2008	11/12/2008	2/11/2009
Volatile Organic Compounds (µg/L)																							
Acetone	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether	70	NLE	--	0.27 J	0.28 J	0.32 J	0.28 J	0.28 J	0.31 J	0.26 J	0.24 J	0.23 J	0.23 J	0.31 J	0.33 J	ND	ND	ND	NA	ND	ND	ND	ND
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Toluene	600	1,000	--	0.43 J	0.48 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
TICs*	500	NLE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons (mg/L)																							
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																							
Acenaphthene	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n*-octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	5.9	5.8	ND	ND	ND	ND	ND	5.8	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	8	10
Metals (µg/L)																							
Antimony	6	6	20.70	6.62 ER	ND	10.6	12.1	10.5	12.6	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	10	89.30	2.80 ER	2.73 ER	2.82 ER	3.01 ER	3.01 ER	3.51 ER	1.71	1.63	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6,000	2,000	699.00	130	141	118	114	139	144	141	134	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	4	2.10	0.0446 ER	ND	0.141 ER	0.139 ER	0.0887 ER	0.092 ER	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	5	9.50	5.53	5.33	0.973 ER	0.903 ER	1.28 ER	1.21 ER	1.68	1.15	3.7	3.8	4.7	4.6	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	100	191.00	1.55 ER	1.68 ER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1,300	1,300	65.60	ND	ND	ND	1.26 ER	ND	1.27 ER	ND	ND	ND	ND	15.7	ND	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	15	22.70	ND	ND	2.95 ER	ND	ND	ND	ND	ND	ND	ND	ND	3.2	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NLE	187	31.7	34.3	25.3	23.4	29.7	31.2	27.8	26	27.9	28.5	28.5	27.1	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	50	29.60	NR	NR	NR	NR	NR	NR	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Shaded cells = concentrations exceed the NJDEP GWQS
*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.
NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)
U.S. Environmental Protection Agency Maximum Contaminant Level (2012)
LF = Low-flow sampling method used to collect sample
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NA - Not analyzed NR - Not reported
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a/ Elevated sample detection limit due to difficult sample matrix.

Table 2
Historical Groundwater Analytical Results
Site FTMM-66 Building 886 Former AST
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				886MW03									886MW04											
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	886MW03	886MW03	886MW03	LF1	LF2	LF3	LF4	LF5	LF6	886MW04	886MW04	886MW04	886MW04	886MW04	886MW04	886MW04	886MW04	886MW04	886MW04	LF1	LF2
Date Collected				6/10/2009	9/28/2009	12/15/2009	2/22/2010	5/24/2010	8/5/2010	10/12/2010	2/10/2011	4/7/2011	8/2/2007	10/12/2007	3/28/2008	6/25/2008	9/16/2008	11/12/2008	2/11/2009	6/10/2009	9/28/2009	12/15/2009	2/24/2010	5/24/2010
Volatile Organic Compounds (µg/L)																								
Acetone	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether	70	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.26	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons (mg/L)																								
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																								
Acenaphthene	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	1.4 J	1.8 J	ND	1.9 J	ND	ND	1.1 J	ND	ND	3.76 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	43.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	112	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	7	ND	ND	ND	8.1	ND	ND	327	ND	ND	4	ND	ND	14	12	12	6	ND	ND	ND	64.2
Metals (µg/L)																								
Antimony	6	6	20.70	NA	NA	NA	9.92 ER	9.76 ER	10.7	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	5.56 ER
Arsenic	3	10	89.30	NA	NA	NA	1.77 ER	5.86	9.07	8.57	ND	8.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.750 ER
Barium	6,000	2,000	699.00	NA	NA	NA	47.2	20.3	22.1	38.6	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.38 ER	15
Beryllium	1	4	2.10	NA	NA	NA	ND	0.122 ER	0.135 ER	0.673	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.091 ER	0.195 ER
Cadmium	4	5	9.50	NA	NA	NA	1.72 ER	0.531 ER	1.12 ER	1.5	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Chromium	70	100	191.00	NA	NA	NA	ND	1.08 ER	10.2	59.2	ND	44.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.52	ND
Copper	1,300	1,300	65.60	NA	NA	NA	9.33	28.1	23	154	21.2	50.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.38 ER	ND
Lead	5	15	22.70	NA	NA	NA	ND	5.09	7.09	19.3	4.4	11.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Nickel	100	NLE	187	NA	NA	NA	1.81 ER	2.46 ER	6.52	15.4	ND	11.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.66 ER	1.81 ER
Selenium	40	50	29.60	NA	NA	NA	NR	NR	NR	1.67	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR	NR

Notes:
Shaded cells = concentrations exceed the NJDEP GWQS
*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.
NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)
U.S. Environmental Protection Agency Maximum Contaminant Level (2012)
LF = Low-flow sampling method used to collect sample
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J - Estimated concentration exceeds the MDL and is less than the RL
NA - Not analyzed NR - Not reported
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a/ Elevated sample detection limit due to difficult sample matrix.

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				886MW04				886MW05																
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	LF3	LF4	LF5	LF6	886MW05	886MW05	886MW05	886MW05	886MW05	886MW05	886MW05	886MW05	886MW05	886MW05	LF1	LF1 Dup	LF2	LF3	LF4	LF5	LF6
Date Collected				8/5/2010	10/13/2010	2/11/2011	4/7/2011	8/2/2007	10/12/2007	3/28/2008	6/25/2008	9/16/2008	11/12/2008	2/11/2009	6/10/2009	9/28/2009	12/15/2009	2/24/2010	2/24/2010	5/24/2010	8/4/2010	10/12/2010	2/10/2011	4/7/2011
Volatile Organic Compounds (µg/L)																								
Acetone	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether	70	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE		ND	ND	ND	ND	28	35	6	23	17	60	ND	3	95	ND	ND	ND	6	22	9	ND	ND
Total Petroleum Hydrocarbons (mg/L)																								
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																								
Acenaphthene	400	NLE	--	ND	ND	ND	ND	ND	2.88 J	ND	ND	ND	ND	ND	ND	1.72	ND	ND	ND	0.414	1.34	ND	ND	ND
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.401	ND	ND	ND	ND	0.268	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7 B	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	ND	ND	ND	ND	ND	2.05 J	ND	ND	ND	ND	ND	ND	1.9 J	ND	ND	ND	0.41 J	1.5 J	ND	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n*-octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	ND	ND	ND	ND	ND	3.29 J	ND	ND	ND	ND	ND	ND	2.67	ND	ND	ND	0.552	2.13	ND	ND	ND
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	13.7	24.29	ND	ND	ND	11	ND	ND	0.91 J	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	1.15 J	1.02 J	ND	ND	ND	ND	ND	ND	0.439	ND	ND	ND	ND	0.167	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	ND	ND	1.44 J	ND	ND	ND	ND	ND	ND	1.35	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	ND	ND	ND	ND	21	100	10.1	34	90	67	17	7	103.6	12.4	ND	ND	7.5	9.2	187.9	ND	4.3
Metals (µg/L)																								
Antimony	6	6	20.70	5.10 ER	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	10	89.30	1.20 ER	0.66	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	2.78 ER	3.57 ER	ND	ND	3.2
Barium	6,000	2,000	699.00	34.8	53.4	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.69	6.95	3.83 ER	4.14 ER	15.2	ND	ND
Beryllium	1	4	2.10	0.229 ER	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.044 ER	ND	0.053 ER	ND	ND	ND	ND
Cadmium	4	5	9.50	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
Chromium	70	100	191.00	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.46 ER	1.61 ER	ND	ND	ND	ND	ND
Copper	1,300	1,300	65.60	1.31 ER	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	2.27 ER	1.36	ND	ND
Lead	5	15	22.70	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	2.82 ER	ND	ND	ND	ND
Nickel	100	NLE	187	5.28	8.35	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.25 ER	1.85 ER	ND	ND	ND	ND	ND
Selenium	40	50	29.60	NR	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR	NR	NR	NR	ND	ND	ND

Notes:
Shaded cells = concentrations exceed the NJDEP GWQS
*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.
NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)
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				886MW06		886RW01																886RW02		
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	LF5	LF6	886RW01	886RW01	886RW01	886RW01	886RW01	886RW01	886RW01	886RW01	886RW01	886RW01	LF1	LF2	LF3	LF4	LF5	LF6	886RW02	886RW02	886RW02
Date Collected				1/6/2011	4/7/2011	8/2/2007	10/11/2007	3/27/2008	6/25/2008	9/16/2008	11/12/2008	2/11/2009	6/10/2009	9/28/2009	12/16/2009	3/2/2010	5/25/2010	8/10/2010	10/14/2010	2/14/2011	4/11/2011	8/2/2007	10/11/2007	3/27/2008
Volatile Organic Compounds (µg/L)																								
Acetone	6,000	NLE	--	ND	ND	ND	ND	4.16	8.98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	0.65 J	1.75 J	0.67 J	1.14	0.87	0.56	0.68	0.51	1.63	0.94	ND	0.30 J	ND	ND	ND	0.46 J	0.79 J	0.31 J	0.84 J
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	0.93 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	0.68J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	5.81	9	3.34	3.05	1.84	1.5	0.29 J	1.32	2.5	ND	ND	ND	ND	ND	ND	ND	ND	0.46 J
Methyl *tert*-butyl ether	70	NLE	--	0.25J	0.54	ND	3.86	ND	10.14	4.3	4.83	2.86	7.13	1.11	0.33 J	ND	0.67	1.63	1.8	ND	ND	4.14	2.75	5.03
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	ND	ND	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	1.92 J	2.09 J	1.02	1.16	0.97	ND	0.30 J	ND	0.27 J	ND	0.30 J	ND	0.27 J	ND	ND	ND	ND	0.88 J
TICs*	500	NLE		ND	ND	519	93	333	271	169	159	176	160	216	190	ND	179	100	75	ND	123	77	35	97
Total Petroleum Hydrocarbons (mg/L)																								
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																								
Acenaphthene	400	NLE	--	ND	0.123	3.21 J	3.59 J	ND	ND	ND	ND	ND	ND	2.07	2.74	ND	2.47	1.9	1.98	ND	2.13	ND	ND	ND
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.136	0.153	0.15	ND	0.149	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	ND	ND	2.43 J	2.84 J	ND	ND	ND	ND	ND	ND	1.9 J	1.6 J	ND	2.5 J	2.1 J	2.1 J	ND	1.4 J	2.0 J	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n*-octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	ND	ND	3.60 J	4.04 J	ND	ND	ND	ND	ND	ND	2.93	2.73	ND	2.88	2.46	2.38	ND	1.96	1.8 J	ND	ND
2-Methylnaphthalene	NLE	NLE	--	ND	ND	35.03	18.28	ND	ND	ND	ND	15	ND	4.4	9.6	ND	1.6	ND	ND	ND	18.3	16.05	18.48	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	0.167	0.275	1.67 J	1.34 J	ND	ND	ND	ND	ND	ND	0.994	0.871	ND	0.627	ND	ND	ND	0.663	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	2.71 J	2.91 J	ND	ND	ND	ND	ND	ND	0.82	1.01	ND	0.875	0.224	0.171	ND	1.53	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.347	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	ND	ND	313	301	516.23	30	135	391	424	433	776	441.4	7.2	135.3	46.1	69	ND	246.3	71	99	51.08
Metals (µg/L)																								
Antimony	6	6	20.70	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	8.67 ER	10.2	ND	ND	ND	NA	NA	NA
Arsenic	3	10	89.30	10.2 /a	16.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.39 ER	10.75	ND	5.9	ND	5.3	NA	NA	NA
Barium	6,000	2,000	699.00	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24.8	41.7	59.8	54	ND	ND	NA	NA	NA
Beryllium	1	4	2.10	ND	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.080 ER	ND	ND	ND	ND	NA	NA	NA
Cadmium	4	5	9.50	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.789 ER	1.05 ER	0.812 ER	0.724	ND	ND	NA	NA	NA
Chromium	70	100	191.00	62.4 /a	61.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.40 ER	1.33 ER	1.87 ER	1.5	ND	ND	NA	NA	NA
Copper	1,300	1,300	65.60	ND	77.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.60 ER	ND	2.68 ER	1.64	ND	ND	NA	NA	NA
Lead	5	15	22.70	11 /a	11.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	2.50 ER	ND	ND	ND	ND	NA	NA	NA
Nickel	100	NLE	187	42.8 /a	33.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.95 ER	ND	1.61 ER	ND	ND	ND	NA	NA	NA
Selenium	40	50	29.60	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR	NR	NR	ND	ND	ND	NA	NA	NA

Notes:

Shaded cells = concentrations exceed the NJDEP GWQS

*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.

NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)

U.S. Environmental Protection Agency Maximum Contaminant Level (2012)

LF = Low-flow sampling method used to collect sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed   NR - Not reported

ND - Not detected

NLE - No limit established

a/ Elevated sample detection limit due to difficult sample matrix.

Table 2
Historical Groundwater Analytical Results
Site FTMM-66 Building 886 Former AST
Annual (Fourth Quarter) 2015 Groundwater Sampling Report
Fort Monmouth, New Jersey

				886RW02															886RW03					
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	886RW02	886RW02	RW02 Dup	886RW02	886RW02	886RW02	886RW02	886RW02	LF1	LF2	LF3	LF4	LF5	LF5 Dup	LF6	886RW03	886RW03	886RW03	886RW03	886RW03	886RW03
Date Collected				6/25/2008	9/16/2008	9/16/2008	11/12/2008	2/11/2009	6/10/2009	9/28/2009	12/16/2009	3/2/2010	5/25/2010	8/10/2010	10/14/2010	2/14/2011	2/14/2011	4/11/2011	8/2/2007	10/11/2007	3/27/2008	6/25/2008	9/16/2008	11/12/2008
Volatile Organic Compounds (µg/L)																								
Acetone	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	ND	0.3	0.98	ND	ND	0.35 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether	70	NLE	--	1.32	5.26	5.62	2.9	4.07	0.52	1.07	0.75	ND	ND	0.45 J	1.22	ND	ND	ND	ND	1.71 J	ND	ND	ND	ND
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	ND	ND	ND	0.22 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE		ND	46	30	36	41	ND	29	75	ND	ND	ND	ND	ND	ND	ND	ND	7	ND	ND	12	ND
Total Petroleum Hydrocarbons (mg/L)																								
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																								
Acenaphthene	400	NLE	--	ND	ND	ND	ND	ND	ND	2.12	2.03	ND	0.146	ND	0.166	0.126	ND	0.207	ND	ND	ND	ND	ND	ND
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	0.139	0.22	ND	ND	ND	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	ND	ND	ND	ND	ND	ND	1.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	ND	ND	ND	ND	ND	ND	0.98 J	0.90 J	ND	ND	ND	0.64 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n*-octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	ND	3.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	ND	ND	ND	ND	ND	ND	2.05	2.38	ND	ND	ND	0.222	ND	ND	0.218	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	15	ND	3.6	7.9	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	ND	ND	0.328	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	0.204	0.351	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	14	132	185	50	400	ND	68.6	94.7	ND	5.7	ND	5.3	ND	ND	4.2	ND	ND	ND	ND	ND	7
Metals (µg/L)																								
Antimony	6	6	20.70	NA	NA	NA	NA	NA	NA	NA	NA	ND	8.76 ER	12.8	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
Arsenic	3	10	89.30	NA	NA	NA	NA	NA	NA	NA	NA	4.46 ER	9.68	ND	18.56	ND	ND	5.5	NA	NA	NA	NA	NA	NA
Barium	6,000	2,000	699.00	NA	NA	NA	NA	NA	NA	NA	NA	41	42.1	45.7	42.8	ND	ND	ND	NA	NA	NA	NA	NA	NA
Beryllium	1	4	2.10	NA	NA	NA	NA	NA	NA	NA	NA	0.065 ER	0.238 ER	0.085 ER	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
Cadmium	4	5	9.50	NA	NA	NA	NA	NA	NA	NA	NA	ND	2.42	2.00 ER	1.38	ND	ND	ND	NA	NA	NA	NA	NA	NA
Chromium	70	100	191.00	NA	NA	NA	NA	NA	NA	NA	NA	3.97 ER	4.52 ER	5.72	2.13	ND	ND	ND	NA	NA	NA	NA	NA	NA
Copper	1,300	1,300	65.60	NA	NA	NA	NA	NA	NA	NA	NA	6.66	16.1	5.82	3.32	ND	ND	ND	NA	NA	NA	NA	NA	NA
Lead	5	15	22.70	NA	NA	NA	NA	NA	NA	NA	NA	ND	5.42	4.96 ER	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
Nickel	100	NLE	187	NA	NA	NA	NA	NA	NA	NA	NA	10.5	12.4	11	5.41	ND	ND	11.5	NA	NA	NA	NA	NA	NA
Selenium	40	50	29.60	NA	NA	NA	NA	NA	NA	NA	NA	NR	NR	NR	1.68	ND	ND	ND	NA	NA	NA	NA	NA	NA

Notes:
Shaded cells = concentrations exceed the NJDEP GWQS
*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.
NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)
U.S. Environmental Protection Agency Maximum Contaminant Level (2012)
LF = Low-flow sampling method used to collect sample
ER - Estimated result
J - Estimated concentration exceeds the MDL and is less than the RL
NA - Not analyzed NR - Not reported
ND - Not detected
NLE - No limit established
a/ Elevated sample detection limit due to difficult sample matrix.

Table 2
Historical Groundwater Analytical Results
Site FTMM-66 Building 886 Former AST
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Fort Monmouth, New Jersey

				886RW03												886RW04								
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	886RW03	886RW03	886RW03	886RW03	LF1	LF2	LF2 Dup	LF3	LF4	LF5	LF6	LF6 Dup	886RW04	886RW04	RW04 Dup	886RW04	886RW04	886RW04	886RW04	886RW04	886RW04
Date Collected				2/11/2009	6/10/2009	9/28/2009	12/16/2009	2/22/2010	5/25/2010	5/25/2010	8/5/2010	10/12/2010	2/10/2011	4/8/2011	4/8/2011	8/2/2007	10/11/2007	10/11/2007	3/27/2008	6/25/2008	9/16/2008	11/12/2008	2/11/2009	6/10/2009
Volatile Organic Compounds (µg/L)																								
Acetone	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.28	ND	ND	ND
Methyl *tert*-butyl ether	70	NLE	--	1.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.22	4.71	4.78	15.92	11.48	6.65	4.62	9.93	6.85
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.31	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18	0.65	ND	ND	ND
TICs*	500	NLE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	102	23	14	97	81	72	59	35	54
Total Petroleum Hydrocarbons (mg/L)																								
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																								
Acenaphthene	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.20 J	ND	ND	ND	ND	ND
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	ND	ND	ND	18.5 B	ND	4.2	ND	ND	ND	ND	ND	ND	ND	ND	2.68 J	ND	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n*-octyl phthalate	100	NLE	--	ND	ND	ND	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.30 J	ND	ND	ND	ND	ND	ND	1	ND
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15.63	7.14 J	10.23	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	19	6	ND	ND	ND	ND	4.2	ND	ND	54.6	ND	ND	201	62	106	196.46	ND	339	6	68	161
Metals (µg/L)																								
Antimony	6	6	20.70	NA	NA	NA	NA	9.54 ER	5.92 ER	ND	6.76 ER	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	10	89.30	NA	NA	NA	NA	ND	1.65 ER	1.61 ER	1.17 ER	1.46	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6,000	2,000	699.00	NA	NA	NA	NA	128	18.4	17.6	28	35.2	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	4	2.10	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	5	9.50	NA	NA	NA	NA	ND	ND	ND	ND	0.409	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	100	191.00	NA	NA	NA	NA	ND	ND	ND	2.90 ER	19.1	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1,300	1,300	65.60	NA	NA	NA	NA	ND	ND	ND	3.38 ER	2.22	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	15	22.70	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NLE	187	NA	NA	NA	NA	3.04 ER	ND	ND	0.973 ER	2.92	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	50	29.60	NA	NA	NA	NA	NR	NR	NR	NR	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Shaded cells = concentrations exceed the NJDEP GWQS
*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.
NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)
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Table 2
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Fort Monmouth, New Jersey

				886RW04								886RW05													
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	886RW04	886RW04	LF1	LF2	LF3	LF4	LF5	LF6	886RW05	886RW05	886RW05	886RW05	886RW05	886RW05	886RW05	886RW05	886RW05	RW05 Dup	886RW05	RW05 Dup	LF1	LF2
Date Collected				9/28/2009	12/16/2009	3/2/2010	5/25/2010	8/9/2010	10/14/2010	2/11/2011	4/11/2011	8/2/2007	10/11/2007	3/27/2008	6/25/2008	9/16/2008	11/12/2008	2/11/2009	6/10/2009	9/28/2009	9/28/2009	12/16/2009	12/16/2009	2/24/2010	5/25/2010
Volatile Organic Compounds (µg/L)																									
Acetone	6,000	NLE	--	ND	ND	ND	ND	ND	8.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether	70	NLE	--	4.93	1.65	ND	0.51	0.73	1.01	ND	0.81	ND	ND	2.36	ND	0.36	0.33	1.3	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	0.46 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	ND	0.25 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE		68	36	ND	ND	31	49	13	22	ND	ND	4	ND	4	ND	4	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons (mg/L)																									
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																									
Acenaphthene	400	NLE	--	0.665	0.656	ND	0.441	0.804	1	ND	0.636	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	0.58 J	0.65 J	ND	ND	0.86 J	0.89 J	ND	0.50 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.8	ND	ND
Fluorene	300	NLE	--	0.622	0.945	ND	0.351	1.19	1.09	ND	0.769	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.53 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	0.118	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	0.176	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	159.5	64.9	4.2	ND	10.9	62.5	108.9	4.7	ND	20	10	ND	60	13	69	21	ND	4	ND	ND	ND	ND
Metals (µg/L)																									
Antimony	6	6	20.70	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.21 ER	ND
Arsenic	3	10	89.30	NA	NA	5.02	6.6	ND	4.8	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	5.28
Barium	6,000	2,000	699.00	NA	NA	28.5	27.6	23.1	31.9	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.66 ER	18.4
Beryllium	1	4	2.10	NA	NA	0.104 ER	0.307 ER	0.117 ER	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.058 ER	0.174 ER
Cadmium	4	5	9.50	NA	NA	1.36 ER	1.08 ER	0.864 ER	1.01	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	1.08 ER
Chromium	70	100	191.00	NA	NA	5.99	22.2	9.06	3.25	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.22	13.7
Copper	1,300	1,300	65.60	NA	NA	6.12	5.61	4.99 ER	3.04	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.7	18.9
Lead	5	15	22.70	NA	NA	3.70 ER	5.56	2.93 ER	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	4.79 ER
Nickel	100	NLE	187	NA	NA	6.01	8.32	4.61 ER	18.5	18.4	11.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.59 ER	1.31 ER
Selenium	40	50	29.60	NA	NA	NR	NR	NR	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR	NR

Notes:

Shaded cells = concentrations exceed the NJDEP GWQS

*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.

NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)

U.S. Environmental Protection Agency Maximum Contaminant Level (2012)

LF = Low-flow sampling method used to collect sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed NR - Not reported

ND - Not detected

NLE - No limit established

a/ Elevated sample detection limit due to difficult sample matrix.

Table 2
Historical Groundwater Analytical Results
Site FTMM-66 Building 886 Former AST
Annual (Fourth Quarter) 2015 Groundwater Sampling Report
Fort Monmouth, New Jersey

				886RW05						886RW06														
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	LF3	LF3 Dup	LF4	LF4 Dup	LF5	LF6	886RW06	886RW06	886RW06	886RW06	886RW06	886RW06	886RW06	886RW06	886RW06	886RW06	LF1	LF2	LF3	LF4	LF4 Dup
Date Collected				8/9/2010	8/9/2010	10/14/2010	10/14/2010	2/11/2011	4/8/2011	8/2/2007	10/11/2007	3/28/2008	6/25/2008	9/16/2008	11/12/2008	2/11/2009	6/10/2009	9/28/2009	12/15/2009	2/22/2010	5/25/2010	8/5/2010	10/13/2010	10/13/2010
Volatile Organic Compounds (µg/L)																								
Acetone	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether	70	NLE	--	ND	ND	0.27 J	0.26 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons (mg/L)																								
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																								
Acenaphthene	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	10.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7 J	ND	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	ND	ND	ND	ND	9.3	ND	ND	17	ND	ND	100	37	23	14	ND	ND	ND	ND	ND	4.9	ND
Metals (µg/L)																								
Antimony	6	6	20.70	6.83 ER	9.38 ER	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Arsenic	3	10	89.30	6.5	6	10.42	11.13	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.35 ER	4.14 ER	5.3	2.22	2.27
Barium	6,000	2,000	699.00	19.4	21.6	44.6	45.1	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28.1	20.7	31.1	26.8	27
Beryllium	1	4	2.10	0.120 ER	0.124 ER	1.23	1.2	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.124 ER	0.259 ER	ND	ND
Cadmium	4	5	9.50	2.68	3	3.66	3.45	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Chromium	70	100	191.00	8.45	9.68	81	79.1	ND	15.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.47 ER	9.82	26.5	7.9	7.71
Copper	1,300	1,300	65.60	13.7	15.4	54	55.4	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.20 ER	6.45	16.1	4.92	5.02
Lead	5	15	22.70	ND	2.91 ER	15.1	12.2	ND	3.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	4.78 ER	9.54	ND	3.45
Nickel	100	NLE	187	2.94 ER	2.87 ER	8.44	8.73	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.60 ER	2.02 ER	4.63 ER	2.7	2.96
Selenium	40	50	29.60	NR	NR	1.43	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR	NR	NR	1.5	ND

Notes:
Shaded cells = concentrations exceed the NJDEP GWQS
*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.
NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)
U.S. Environmental Protection Agency Maximum Contaminant Level (2012)
LF = Low-flow sampling method used to collect sample
ER - Estimated result
J - Estimated concentration exceeds the MDL and is less than the RL
NA - Not analyzed NR - Not reported
ND - Not detected
NLE - No limit established
a/ Elevated sample detection limit due to difficult sample matrix.

Table 2
Historical Groundwater Analytical Results
Site FTMM-66 Building 886 Former AST
Annual (Fourth Quarter) 2015 Groundwater Sampling Report
Fort Monmouth, New Jersey

				886RW06		886RW07																	886RW08	
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	LF5	LF6	886RW07	886RW07	886RW07	886RW07	886RW07	886RW07	886RW07	886RW07	886RW07	886RW07	LF1	LF2	LF3	LF4	LF5	LF6	LF6 Dup	886RW08	886RW08
Date Collected				2/11/2011	4/8/2011	8/2/2007	10/12/2007	3/28/2008	6/25/2008	9/16/2008	11/12/2008	2/11/2009	6/10/2009	9/28/2009	12/15/2009	3/2/2010	5/25/2010	8/9/2010	10/13/2010	2/11/2011	4/11/2011	4/11/2011	8/2/2007	10/12/2007
Volatile Organic Compounds (µg/L)																								
Acetone	6,000	NLE	--	ND	ND	ND	ND	ND	2.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.11
Benzene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	3.37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether	70	NLE	--	ND	ND	ND	ND	0.49 J	ND	0.37	0.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	0.73	1.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE		ND	ND	ND	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons (mg/L)																								
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																								
Acenaphthene	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	3.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	ND	ND	9	ND	ND	7	5	32	33	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	6	17
Metals (µg/L)																								
Antimony	6	6	20.70	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	5.32 ER	7.46 ER	ND	ND	ND	ND	NA	NA
Arsenic	3	10	89.30	ND	4.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.28 ER	3.16 ER	ND	4.27	ND	3.7	4.3	NA	NA
Barium	6,000	2,000	699.00	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.79	6.28	7.66	20.1	ND	ND	ND	NA	NA
Beryllium	1	4	2.10	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.045 ER	0.113 ER	ND	ND	ND	ND	NA	NA
Cadmium	4	5	9.50	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.09 ER	1.09 ER	0.503 ER	0.859	ND	ND	ND	NA	NA
Chromium	70	100	191.00	ND	27.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.65 ER	2.78 ER	8.57	24.1	ND	22.6	23.7	NA	NA
Copper	1,300	1,300	65.60	ND	10.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.2	14.1	11.3	31.9	10.4	18.4	19.8	NA	NA
Lead	5	15	22.70	ND	7.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	2.62 ER	8.3	ND	5.4	5.5	NA	NA
Nickel	100	NLE	187	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.52 ER	0.556 ER	4.60 ER	4.93	ND	ND	ND	NA	NA
Selenium	40	50	29.60	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR	NR	NR	ND	ND	ND	ND	NA	NA

Notes:
Shaded cells = concentrations exceed the NJDEP GWQS
*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.
NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)
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Table 2
Historical Groundwater Analytical Results
Site FTMM-66 Building 886 Former AST
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Fort Monmouth, New Jersey

				886RW08														
WELL ID	**NJDEP GWQS**	**USEPA MCL**	**Weston 1995 Background (Main Post)**	886RW08	886RW08	886RW08	886RW08	886RW08	886RW08	886RW08	886RW08	LF1	LF1 Dup	LF2	LF3	LF4	LF5	LF6
Date Collected				3/28/2008	6/25/2008	9/16/2008	11/12/2008	2/11/2009	6/10/2009	9/28/2009	12/15/2009	3/2/2010	3/2/2010	5/25/2010	8/5/2010	10/13/2010	2/11/2011	4/8/2011
Volatile Organic Compounds (µg/L)																		
Acetone	6,000	NLE	--	2.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	700	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether	70	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	1	5	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	1,000	10,000	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons (mg/L)																		
Total Petroleum Hydrocarbons	NLE	NLE	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (µg/L)																		
Acenaphthene	400	NLE	--	ND	ND	ND	ND	ND	ND	0.158	ND	ND	ND	ND	ND	ND	ND	0.232
Anthracene	2,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	3	NLE	--	ND	ND	ND	ND	ND	ND	3.4	ND	ND	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	400	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	6,000	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	NLE	--	ND	ND	ND	ND	ND	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	NLE	--	ND	ND	ND	ND	ND	ND	0.137	ND	ND	ND	ND	ND	ND	ND	0.219
2-Methylnaphthalene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	--	241.85	ND	36	34	19	22	4.1	4.1	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																		
Antimony	6	6	20.70	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	8.41 ER	7.60 ER	ND	ND	ND
Arsenic	3	10	89.30	NA	NA	NA	NA	NA	NA	NA	NA	1.06 ER	1.10 ER	3.59 ER	3.72 ER	4.88	ND	3.6
Barium	6,000	2,000	699.00	NA	NA	NA	NA	NA	NA	NA	NA	8.95	8.65	10.4	22.8	19.4	ND	ND
Beryllium	1	4	2.10	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	0.080 ER	0.261 ER	ND	ND	ND
Cadmium	4	5	9.50	NA	NA	NA	NA	NA	NA	NA	NA	0.861 ER	0.759 ER	0.984 ER	1.39 ER	1.12	ND	ND
Chromium	70	100	191.00	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	5.85	18.8	26.4	10.5	ND
Copper	1,300	1,300	65.60	NA	NA	NA	NA	NA	NA	NA	NA	10.6	9.99	12	30.4	13.7	ND	ND
Lead	5	15	22.70	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	3.75 ER	5.89	5.87	ND	ND
Nickel	100	NLE	187	NA	NA	NA	NA	NA	NA	NA	NA	0.717 ER	0.793 ER	2.49 ER	5.43	6.04	ND	ND
Selenium	40	50	29.60	NA	NA	NA	NA	NA	NA	NA	NA	NR	NR	NR	NR	ND	ND	ND

Notes:
Shaded cells = concentrations exceed the NJDEP GWQS
*TICs - Tentatively identified compounds, cannot exceed 500 µg/L for total VOCs and SVOCs. No individual compound can exceed 100 µg/L.
NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010)
U.S. Environmental Protection Agency Maximum Contaminant Level (2012)
LF = Low-flow sampling method used to collect sample
ER - Estimated result
J - Estimated concentration exceeds the MDL and is less than the RL
NA - Not analyzed NR - Not reported
ND - Not detected
NLE - No limit established
a/ Elevated sample detection limit due to difficult sample matrix.

Table 3
Groundwater Analytical Results - 2013, 2014 and 2015
Site FTMM-66 Building 886 Former AST
Annual (Fourth Quarter) 2015 Groundwater Sampling Report
Fort Monmouth, New Jersey

Loc ID	NJDEP GWQS	2015-06 USEPA MCL	886MW01	886MW02	886MW03	886MW04	886MW05	886RW01			886RW02	886RW03	886RW04	886RW05
Sample ID			FTMM-66-GW-886MW01	FTMM-66-GW-886MW02	FTMM-66-GW-886MW03	FTMM-66-GW-886MW04	FTMM-66-GW-886MW05	FTMM-66-GW-886RW01	FTMM-66-GW-886RW01-11.55	FTMM-66-GW-886RW01-11.9	FTMM-66-GW-886RW02	FTMM-66-GW-886RW03	FTMM-66-GW-886RW04	FTMM-66-GW-886RW05
Sample Date			8/23/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013	8/23/2013	10/3/2014	11/23/2015	8/22/2013	8/22/2013	8/22/2013	8/22/2013
QA/QC			SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
Sample Method			LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS
Volatile Organic Compounds (µg/l)														
1,1,1,2-Tetrachloroethane	1	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,1,1-Trichloroethane	30	200	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,1,2,2-Tetrachloroethane	1	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane	3	5	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,1-Dichloroethane	50	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,1-Dichloroethene	1	7	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,1-Dichloropropene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,2,3-Trichlorobenzene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,2,3-Trichloropropane	0.03	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,2,4-Trichlorobenzene	9	70	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,2,4-Trimethylbenzene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,2-Dibromo-3-chloropropane	0.02	0.2	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,2-Dibromoethane	0.03	0.05	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,2-Dichlorobenzene	600	600	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,2-Dichloroethane	2	5	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,2-Dichloropropane	1	5	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,3,5-Trimethylbenzene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,3-Dichlorobenzene	600	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,3-Dichloropropane	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
1,4-Dichlorobenzene	75	75	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
2,2-Dichloropropane	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
2-Chlorotoluene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Acetone	6,000	NLE	< 5	< 5	**1.8 J**	**1.4 J**	**1.6 J**	**2.1 J**	NA	NA	**1.4 J**	< 5	**3.3 J**	< 5
Benzene	1	5	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Bromobenzene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Bromochloromethane	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Bromodichloromethane	1	80	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Bromoform	4	80	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Carbon tetrachloride	1	5	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Chlorobenzene	50	100	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Chlorodibromomethane	1	80	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Chloroethane	5	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Chloroform	70	80	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Cis-1,2-Dichloroethene	70	70	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Cis-1,3-Dichloropropene	1	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Cymene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Dichlorodifluoromethane	1,000	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Ethyl benzene	700	700	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Hexachlorobutadiene	1	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Isopropylbenzene	700	NLE	< 1	< 1	< 1	< 1	**0.34 J**	**0.32 J**	NA	NA	< 1	< 1	< 1	< 1
Meta/Para Xylene	1,000	NLE	< 2	< 2	< 2	< 2	< 2	< 2	NA	NA	< 2	< 2	< 2	< 2
Methyl bromide	10	NLE	**0.3 J**	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Methyl butyl ketone	300	NLE	< 5	< 5	< 5	< 5	< 5	< 5	NA	NA	< 5	< 5	< 5	< 5
Methyl chloride	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Methyl ethyl ketone	300	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Methyl isobutyl ketone	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Methyl Tertbutyl Ether	70	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Methylene chloride	3	5	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Naphthalene	300	NLE	< 1	< 1	< 1	< 1	**0.21 J**	< 1	NA	NA	< 1	< 1	< 1	< 1
n-Butylbenzene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Ortho Xylene	1,000	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
p-Chlorotoluene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Propylbenzene	100	NLE	< 1	< 1	< 1	< 1	**0.46 J**	**0.3 J**	NA	NA	< 1	< 1	< 1	< 1
sec-Butylbenzene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Styrene	100	100	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
tert-Butylbenzene	100	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Tetrachloroethene	1	5	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Toluene	600	1,000	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Total TIC, Volatile	500	NLE	ND	ND	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND
Total Xylenes	1,000	10,000	< 3	< 3	< 3	< 3	< 3	< 3	NA	NA	< 3	< 3	< 3	< 3
Trans-1,2-Dichloroethene	100	100	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Trans-1,3-Dichloropropene	1	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Trichloroethene	1	5	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Trichlorofluoromethane	2,000	NLE	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1
Vinyl chloride	1	2	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	< 1	< 1	< 1	< 1

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Fort Monmouth, New Jersey

Loc ID	NJDEP GWQS	2015-06 USEPA MCL	886MW01	886MW02	886MW03	886MW04	886MW05	886RW01			886RW02	886RW03	886RW04	886RW05
Sample ID			FTMM-66-GW-886MW01	FTMM-66-GW-886MW02	FTMM-66-GW-886MW03	FTMM-66-GW-886MW04	FTMM-66-GW-886MW05	FTMM-66-GW-886RW01	FTMM-66-GW-886RW01-11.55	FTMM-66-GW-886RW01-11.9	FTMM-66-GW-886RW02	FTMM-66-GW-886RW03	FTMM-66-GW-886RW04	FTMM-66-GW-886RW05
Sample Date			8/23/2013	8/22/2013	8/22/2013	8/22/2013	8/22/2013	8/23/2013	10/3/2014	11/23/2015	8/22/2013	8/22/2013	8/22/2013	8/22/2013
QA/QC			SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
Sample Method			LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS
Semivolatile Organic Compounds (µg/l)														
1,2,4-Trichlorobenzene	9	70	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
1,2-Dichlorobenzene	600	600	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
1,2-Diphenylhydrazine	20	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
1,3-Dichlorobenzene	600	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
1,4-Dichlorobenzene	75	75	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2,4,5-Trichlorophenol	700	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2,4,6-Trichlorophenol	20	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2,4-Dichlorophenol	20	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2,4-Dimethylphenol	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2,4-Dinitrophenol	40	NLE	< 25	< 25	< 25	< 25	< 25	< 25	< 26	< 25 UJ	< 25	< 25	< 25	< 25
2,4-Dinitrotoluene	10	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2,6-Dinitrotoluene	10	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2-Chloronaphthalene	600	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2-Chlorophenol	40	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2-Methylnaphthalene	30	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2-Methylphenol	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
2-Nitroaniline	100	NLE	< 25	< 25	< 25	< 25	< 25	< 25	< 26	< 25	< 25	< 25	< 25	< 25
2-Nitrophenol	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
3,3'-Dichlorobenzidine	30	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3 UJ	< 5	< 5	< 5	< 5	< 5
3+4-Methylphenol	NLE	NLE	< 10	< 10	< 10	< 10	< 10	< 10	NA	NA	< 10	< 10	< 10	< 10
3-Nitroaniline	100	NLE	< 25	< 25	< 25	< 25	< 25	< 25	< 26	< 25 UJ	< 25	< 25	< 25	< 25
4,6-Dinitro-2-methylphenol	1	NLE	< 25	< 25	< 25	< 25	< 25	< 25	< 26	< 25 UJ	< 25	< 25	< 25	< 25
4-Bromophenyl phenyl ether	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
4-Chloro-3-methylphenol	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
4-Chloroaniline	30	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5 UJ	< 5	< 5	< 5	< 5
4-Chlorophenyl phenyl ether	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
4-Methylphenol	NLE	NLE	NA	NA	NA	NA	NA	NA	< 11	NA	NA	NA	NA	NA
4-Nitroaniline	5	NLE	< 25	< 25	< 25	< 25	< 25	< 25	< 26	< 25	< 25	< 25	< 25	< 25
4-Nitrophenol	100	NLE	< 25	< 25	< 25	< 25	< 25	< 25	< 26	< 25	< 25	< 25	< 25	< 25
Acenaphthene	400	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Acenaphthylene	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Anthracene	2,000	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Benzidine	20	NLE	< 100	< 100	< 100	< 100	< 100	< 100	< 110 UJ	< 100	< 100	< 100	< 100	< 100
Benzo(a)anthracene	0.1	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Benzo(a)pyrene	0.1	0.2	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Benzo(b)fluoranthene	0.2	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Benzo(ghi)perylene	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Benzo(k)fluoranthene	0.5	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Benzyl alcohol	2,000	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Bis(2-Chloroethoxy)methane	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Bis(2-Chloroethyl)ether	7	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Bis(2-Chloroisopropyl)ether	300	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Bis(2-Ethylhexyl)phthalate	3	6	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Butyl benzyl phthalate	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Carbazole	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Chrysene	5	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Cresol	NLE	NLE	NA	NA	NA	NA	NA	NA	NA	< 10	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.3	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Dibenzofuran	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Diethyl phthalate	6,000	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Dimethyl phthalate	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Di-n-butylphthalate	700	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Di-n-octylphthalate	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Fluoranthene	300	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Fluorene	300	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Hexachlorobenzene	0.02	1	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Hexachlorobutadiene	1	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Hexachlorocyclopentadiene	40	50	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Hexachloroethane	7	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Indeno(1,2,3-cd)pyrene	0.2	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Isophorone	40	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Naphthalene	300	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Nitrobenzene	6	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
N-Nitrosodimethylamine	0.8	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
N-Nitroso-di-n-propylamine	10	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
N-Nitrosodiphenylamine	10	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Pentachlorophenol	0.3	1	< 25	< 25	< 25	< 25	< 25	< 25	< 26	< 25	< 25	< 25	< 25	< 25
Phenanthrene	100	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Phenol	2,000	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
Pyrene	200	NLE	< 5	< 5	< 5	< 5	< 5	< 5	< 5.3	< 5	< 5	< 5	< 5	< 5
TIC SVOCs (mg/l)														
Total TIC, Semi-Volatile	500	NLE	**64.2**	**14 J**	**12 J**	**65 JN**	**18.3 J**	**878.9**	**15.4 J**	**18 JN**	**39.7 J**	ND	**15 J**	ND
Inorganics (µg/l)														
Lead	5	15	< 2	< 2	**1.9 J**	< 2	< 2	< 2	NA	NA	< 2	**1.9 J**	**0.863 J**	**2.2 J**

Table 3
Groundwater Analytical Results - 2013, 2014 and 2015
Site FTMM-66 Building 886 Former AST
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Loc ID	NJDEP GWQS	2015-06 USEPA MCL	886RW05	886RW06				886RW07	886RW08		
Sample ID			FTMM-66-GW-886RW105	FTMM-66-GW-886RW06	FTMM-66-GW-886RW06-10.12	FTMM-66-GW-886RW106-10.12	FTMM-66-GW-886RW06-8.75	FTMM-66-GW-886RW07	FTMM-66-GW-886RW08	FTMM-66-GW-886RW08-11.22	FTMM-66-GW-886RW08-11.2
Sample Date			8/22/2013	8/22/2013	10/3/2014	10/3/2014	11/23/2015	8/22/2013	8/22/2013	10/3/2014	11/20/2015
QA/QC			DU	SA	SA	DU	SA	SA	SA	SA	SA
Sample Method			LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS
Volatile Organic Compounds (µg/l)											
1,1,1,2-Tetrachloroethane	1	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,1,1-Trichloroethane	30	200	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,1,2,2-Tetrachloroethane	1	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,1,2-Trichloroethane	3	5	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,1-Dichloroethane	50	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,1-Dichloroethene	1	7	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,1-Dichloropropene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,2,3-Trichlorobenzene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,2,3-Trichloropropane	0.03	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,2,4-Trichlorobenzene	9	70	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,2,4-Trimethylbenzene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,2-Dibromo-3-chloropropane	0.02	0.2	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,2-Dibromoethane	0.03	0.05	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,2-Dichlorobenzene	600	600	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,2-Dichloroethane	2	5	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,2-Dichloropropane	1	5	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,3,5-Trimethylbenzene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,3-Dichlorobenzene	600	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,3-Dichloropropane	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
1,4-Dichlorobenzene	75	75	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
2,2-Dichloropropane	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
2-Chlorotoluene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Acetone	6,000	NLE	< 5	< 5	NA	NA	NA	< 5	**1.6 J**	NA	NA
Benzene	1	5	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Bromobenzene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Bromochloromethane	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Bromodichloromethane	1	80	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Bromoform	4	80	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Carbon tetrachloride	1	5	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Chlorobenzene	50	100	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Chlorodibromomethane	1	80	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Chloroethane	5	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Chloroform	70	80	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Cis-1,2-Dichloroethene	70	70	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Cis-1,3-Dichloropropene	1	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Cymene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Dichlorodifluoromethane	1,000	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Ethyl benzene	700	700	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Hexachlorobutadiene	1	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Isopropylbenzene	700	NLE	< 1	< 1	NA	NA	NA	< 1	**0.31 J**	NA	NA
Meta/Para Xylene	1,000	NLE	< 2	< 2	NA	NA	NA	< 2	< 2	NA	NA
Methyl bromide	10	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Methyl butyl ketone	300	NLE	< 5	< 5	NA	NA	NA	< 5	< 5	NA	NA
Methyl chloride	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Methyl ethyl ketone	300	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Methyl isobutyl ketone	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Methyl Tertbutyl Ether	70	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Methylene chloride	3	5	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Naphthalene	300	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
n-Butylbenzene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Ortho Xylene	1,000	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
p-Chlorotoluene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Propylbenzene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
sec-Butylbenzene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Styrene	100	100	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
tert-Butylbenzene	100	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Tetrachloroethene	1	5	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Toluene	600	1,000	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Total TIC, Volatile	500	NLE	ND	ND	NA	NA	NA	ND	ND	NA	NA
Total Xylenes	1,000	10,000	< 3	< 3	NA	NA	NA	< 3	< 3	NA	NA
Trans-1,2-Dichloroethene	100	100	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Trans-1,3-Dichloropropene	1	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Trichloroethene	1	5	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Trichlorofluoromethane	2,000	NLE	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA
Vinyl chloride	1	2	< 1	< 1	NA	NA	NA	< 1	< 1	NA	NA

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Loc ID	NJDEP GWQS	2015-06 USEPA MCL	886RW05	886RW06				886RW07	886RW08		
Sample ID			FTMM-66-GW-886RW105	FTMM-66-GW-886RW06	FTMM-66-GW-886RW06-10.12	FTMM-66-GW-886RW106-10.12	FTMM-66-GW-886RW06-8.75	FTMM-66-GW-886RW07	FTMM-66-GW-886RW08	FTMM-66-GW-886RW08-11.22	FTMM-66-GW-886RW08-11.2
Sample Date			8/22/2013	8/22/2013	10/3/2014	10/3/2014	11/23/2015	8/22/2013	8/22/2013	10/3/2014	11/20/2015
QA/QC			DU	SA	SA	DU	SA	SA	SA	SA	SA
Sample Method			LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS	LFPS
Semivolatile Organic Compounds (µg/l)											
1,2,4-Trichlorobenzene	9	70	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
1,2-Dichlorobenzene	600	600	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
1,2-Diphenylhydrazine	20	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
1,3-Dichlorobenzene	600	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
1,4-Dichlorobenzene	75	75	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2,4,5-Trichlorophenol	700	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2,4,6-Trichlorophenol	20	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2,4-Dichlorophenol	20	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2,4-Dimethylphenol	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2,4-Dinitrophenol	40	NLE	< 25	< 25	< 28	< 28	< 25 UJ	< 25	< 25	< 28	< 25
2,4-Dinitrotoluene	10	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2,6-Dinitrotoluene	10	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2-Chloronaphthalene	600	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2-Chlorophenol	40	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2-Methylnaphthalene	30	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2-Methylphenol	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
2-Nitroaniline	100	NLE	< 25	< 25	< 28	< 28	< 25	< 25	< 25	< 28	< 25
2-Nitrophenol	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
3,3'-Dichlorobenzidine	30	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
3+4-Methylphenol	NLE	NLE	< 10	< 10	NA	NA	NA	< 10	< 10	NA	NA
3-Nitroaniline	100	NLE	< 25	< 25	< 28	< 28	< 25 UJ	< 25	< 25	< 28	< 25
4,6-Dinitro-2-methylphenol	1	NLE	< 25	< 25	< 28	< 28	< 25 UJ	< 25	< 25	< 28	< 25
4-Bromophenyl phenyl ether	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
4-Chloro-3-methylphenol	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
4-Chloroaniline	30	NLE	< 5	< 5	< 5.6	< 5.6	< 5 UJ	< 5	< 5	< 5.6	< 5
4-Chlorophenyl phenyl ether	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
4-Methylphenol	NLE	NLE	NA	NA	< 11	< 11	NA	NA	NA	< 11	NA
4-Nitroaniline	5	NLE	< 25	< 25	< 28	< 28	< 25	< 25	< 25	< 28	< 25
4-Nitrophenol	100	NLE	< 25	< 25	< 28	< 28	< 25	< 25	< 25	< 28	< 25
Acenaphthene	400	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Acenaphthylene	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Anthracene	2,000	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Benzidine	20	NLE	< 100	< 100	< 110 UJ	< 110 UJ	< 100	< 100	< 100	< 110	< 100 UJ
Benzo(a)anthracene	0.1	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Benzo(a)pyrene	0.1	0.2	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Benzo(b)fluoranthene	0.2	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Benzo(ghi)perylene	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Benzo(k)fluoranthene	0.5	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Benzyl alcohol	2,000	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Bis(2-Chloroethoxy)methane	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Bis(2-Chloroethyl)ether	7	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Bis(2-Chloroisopropyl)ether	300	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Bis(2-Ethylhexyl)phthalate	3	6	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Butyl benzyl phthalate	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Carbazole	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Chrysene	5	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Cresol	NLE	NLE	NA	NA	NA	NA	< 10	NA	NA	NA	< 10
Dibenz(a,h)anthracene	0.3	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Dibenzofuran	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Diethyl phthalate	6,000	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Dimethyl phthalate	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Di-n-butylphthalate	700	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Di-n-octylphthalate	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Fluoranthene	300	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Fluorene	300	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Hexachlorobenzene	0.02	1	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Hexachlorobutadiene	1	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Hexachlorocyclopentadiene	40	50	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Hexachloroethane	7	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Indeno(1,2,3-cd)pyrene	0.2	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Isophorone	40	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Naphthalene	300	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Nitrobenzene	6	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
N-Nitrosodimethylamine	0.8	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
N-Nitroso-di-n-propylamine	10	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
N-Nitrosodiphenylamine	10	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Pentachlorophenol	0.3	1	< 25	< 25	< 28	< 28	< 25	< 25	< 25	< 28	< 25
Phenanthrene	100	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Phenol	2,000	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
Pyrene	200	NLE	< 5	< 5	< 5.6	< 5.6	< 5	< 5	< 5	< 5.6	< 5
TIC SVOCs (mg/l)											
Total TIC, Semi-Volatile	500	NLE	ND	**468.7**	ND	ND	ND	**13**	**707 JN**	**46.4 J**	ND
Inorganics (µg/l)											
Lead	5	15	**1.4 J**	**1.4 J**	NA	NA	NA	**1.7 J**	< 2	NA	NA

Table 3
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Footnote:

1) All historical data collected prior to 2013 are reported as provided by others.

2) Number of Analyses is the number of detected and non-detected results excluding rejected results. Sample duplicate pairs have not been averaged.

3) NLE = no limit established.

4) ND = not detected in any background sample, no background concentration available.

5) Chemical result qualifiers are assigned by the laboratory and is typically evaluated and modified (if necessary) by during data validation.

[blank] = detect, i.e. detected chemical result value.
B = Compound detected in the sample and its associated blank sample.
R = Rejected, data validation rejected the results.
U = non-detect, i.e. not detected equal to or above this value.
U-DL = Elevated sample detection limit due to difficult sample matrix.
U-ND = Analyte not detected in sample, but no detection or reporting limit provided.

J = estimated (detect or non-detect) value.
E (or ER) = Estimated result.
D = Results from dilution of sample.
J-DL = Elevated sample detection limit due to difficult sample matrix.
JN = Tentatively identified compound, estimated concentration.

6) Chemical results greater than or equal to the action level (depending on criteria) are highlighted based on the Criteria that are present.

- Cell Shade values represent a result that is above the NJ Ground Water Quality Criteria ####

NJDEP Interim Specific GWQC values are presented for the NJ GWQS where there is not a Specific Ground Water Quality Criteria. A full list of compounds is available at (http://www.nj.gov/dep/wms/bwqsa/gwqs_interim_criteria_table.htm).

NJDEP Interim Generic GWQC values are presented for the NJ GWQS where there is not a XXXXX or a NJDEP Interim Specific GWQC. Available at (http://www.nj.gov/dep/wms/bwqsa/gwqs_interim_criteria_table.htm).

- Bold Outline represent a result that is above the USEPA 2014-05 MCL. ###

- Cell Style values represent a result that is above the Weston 1995 Background (Main Post). ###

n/a = all concentrations were less than the detection limit, therefore, no location of maximum value identified.

Dash (-) = only background concentrations for metals are being used as comparison criteria.

7) Criteria action level source document and web address.

- The NJ Ground Water Quality Criteria refers to the NJDEP Groundwater Quality Standards - Adopted July 22, 2010
http://www.state.nj.us/dep/wms/bwqsa/docs/njac79C.pdf
- The 2014-05 USEPA MCL refers to the USEPA's Region 9 Regional Screening Levels (HQ=1.0) - 5/31/2014 (Last revised)
http://www.epa.gov/region9/superfund/prg/
- The Weston 1995 Background (Main Post) refers to the FTMM reports.
NA

8) Wells sampled in the most recent fourth quarter sampling event are highlighted in yellow. Sample ID

Table 4
Review of Historical Groundwater Sampling Results
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Fort Monmouth, New Jersey

Site Name/ Well ID	Interpretation of Historical and 2015 Results [1]			2015 Evaluation				Retain Analyte/Well (Yes or No)	Rationale
	Chem Class / Analyte	Does it Exceed NJDEP GWQS (Yes or No) (If Yes, identify compound)	Do Metals Exceed FTMM Background Concentration (Yes or No) (If yes, identify compound)	Seasonal Effect?[2] (Y/N)	Anomaly? (Y/N)	Exceedance part of overall trend? (Y/N)	Well needed for sentinel purposes? (Y/N)		
FTMM-66, B886									
886RW01	SVOC	SVOC Total TICs	No	No	No	No	No	Yes	Metals and VOCs discontinued in 2013. Groundwater sampling results are below NJDEP GWQS, discontinue sampling.
886RW06		As, Pb	No	N/A	N/A	N/A	Yes	Yes	Metals and VOCs discontinued in 2013. Groundwater sampling results are below NJDEP GWQS, discontinue sampling.
886RW08		SVOC Total TICs	No	No	No	No	No	Yes	Metals and VOCs discontinued in 2013. Groundwater sampling results are below NJDEP GWQS, discontinue sampling.

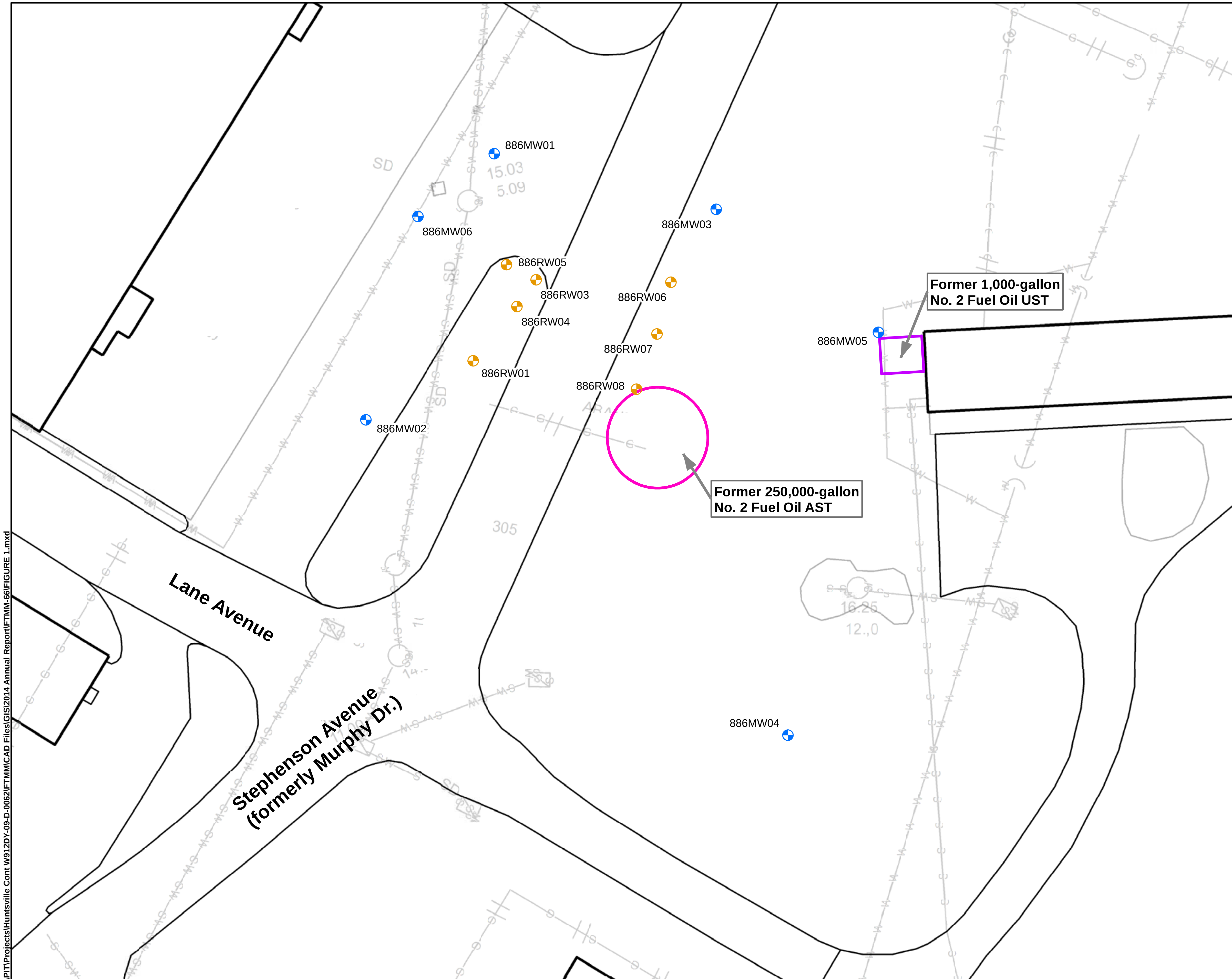
Notes

1. Has any of the analyte compounds exceeded the NJDEP GWQS in the 2015 data and the 4 previous quarterly data rounds or 2 previous annual rounds?
   a. If yes then keep analyte in LTM list
   b. If no then remove this analyte from LTM list
   c. a and b above may be occasionally superseded on a case-by-case basis, depending on site conditions.
2. Has any of the analyte compounds exceeded the NJDEP GWQS seasonally (winter spring vs. summer fall)?
3. TIC - Tentatively Identified Compound
4. N/A - Not applicable
5. Per the 2/5/15 NJDEP approval letter of the Final 2013 Baseline Groundwater Report, groundwater monitoring wells 886MW01, 886MW02, 886MW03, 886MW04, 886MW05, 886RW02, 886RW03, 886RW04, 886RW05 and 886RW07 were removed from the long-term monitoring sampling program and VOC and lead analysis were discontinued in 2014.

FIGURES

Figure 1 Layout of FTMM-66 Building 886 Former AST

Figure 2 FTMM-66 Shallow Groundwater Contours - October 2, 2015

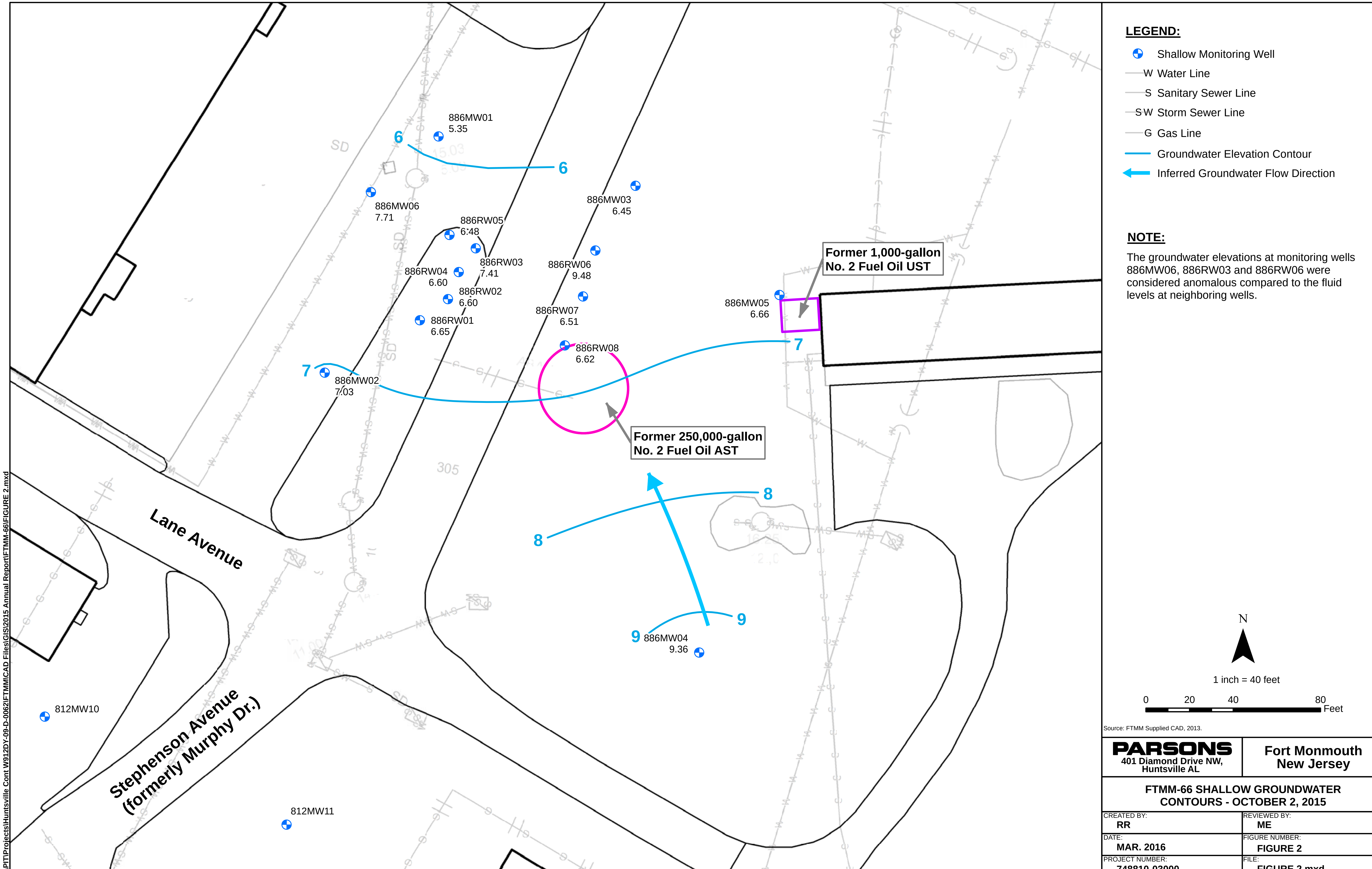


PARSONS
401 Diamond Drive NW,
Huntsville AL

Fort Monmouth
New Jersey

LAYOUT OF FTMM-66
BUILDING 886 FORMER AST

CREATED BY: RR	REVIEWED BY: ME
DATE: NOV. 2015	FIGURE NUMBER: FIGURE 1
PROJECT NUMBER: 748810-01000	FILE: FIGURE 1.mxd


886MW01
5.35
6
6
886MW06
7.71
886MW03
6.45
886RW05
6.48
886RW03
7.41
886RW04
6.60
886RW06
9.48
886RW02
6.60
886RW01
6.65
886RW07
6.51
886RW08
6.62
886MW05
6.66
7
7
886MW02
7.03
Former 1,000-gallon
No. 2 Fuel Oil UST
Former 250,000-gallon
No. 2 Fuel Oil AST
8
8
9
9
886MW04
9.36
Lane Avenue
Stephenson Avenue
(formerly Murphy Dr.)
812MW10
812MW11
SD
305
LEGEND:
Shallow Monitoring Well
W Water Line
S Sanitary Sewer Line
SW Storm Sewer Line
G Gas Line
Groundwater Elevation Contour
Inferred Groundwater Flow Direction
NOTE:
The groundwater elevations at monitoring wells 886MW06, 886RW03 and 886RW06 were considered anomalous compared to the fluid levels at neighboring wells.
N
1 inch = 40 feet
0
20
40
80
Feet
Source: FTMM Supplied CAD, 2013.
PARSONS
401 Diamond Drive NW, Huntsville AL
Fort Monmouth New Jersey
FTMM-66 SHALLOW GROUNDWATER CONTOURS - OCTOBER 2, 2015
CREATED BY: RR
REVIEWED BY: ME
DATE: MAR. 2016
FIGURE NUMBER: FIGURE 2
PROJECT NUMBER: 748810-03000
FILE: FIGURE 2.mxd
P:\PIT\Projects\Huntsville Cont W912DY-09-D-0062\FTMM\CAD Files\GIS\2015 Annual Report\FTMM-66\FIGURE 2.mxd

ATTACHMENTS

Attachment A LFPS Field Sheets

LOW FLOW PURGE AND SAMPLING (LFPS) RECORD - GROUNDWATER

PARSONS

CLIENT: FTMM - USACE

WELL #: 812MW04

PROJECT: Q4 GW Sampling

AOC # (AREA): M-64

SCREENED INTERVAL (TOC): 2-7

WELL DIAMETER (in.) 4

WELL PERMIT #: 29412875

DATE: 11/25/15

SAMPLING PERSONNEL NAME: C. Watson

SAMPLING PERSONNEL NAME: —

BOREHOLE DIAMETER FACTORS

DIAMETER (INCHES):	1	1.5	2	3	4	5	6	7	8	9	10
GALLONS/FOOT:	0.041	0.092	0.163	0.367	0.654	1.02	1.47	2	2.61	3.3	5.87

WELL HEAD VOC CONCENTRATION (ppm): 0

WELL DEPTH (TOC): 7

FEET OF WATER IN WELL (ft): 4.7

FEET OF SATURATED SCREEN (ft): 5'

DEPTH TO WATER BEFORE PUMP INSTALLATION (ft below TOC): 2.30

PUMP INTAKE DEPTH (ft below TOC): 4.7

PURGING AND SAMPLING

TIME	PURGING	SAMPLING	pH (pH units) READING	pH CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	CHANGE*	REDOX POTENTIAL (mv) READING	CHANGE*	DISSOLVED OXYGEN (mg/L) READING	CHANGE*	TURBIDITY (NTU) READING	CHANGE*	TEMPERATURE (degrees C) READING	CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
1245	x		7.19	NA	0.430	NA	64.9	NA	7.72	NA	249.4	NA	12.97	NA	225	2.51
1250	x		7.02		0.420		79		6.61		234.2		13.49		225	2.86
1255	x		6.99		0.418		86.5		6.55		212.0		13.43		225	3.00
1300	x		6.90		0.421		91.2		7.14		200.2		13.47		200	3.36
1305	x		6.97		0.423		91.1		6.65		55.8		14.04		200	3.68
1310	x		6.96		0.425		90.8		7.00		56.0		14.16		200	3.82
1315	x		6.93		0.426		91.7		7.34		51.0		14.25		200	3.93
1320	x		6.93		0.426		92.8		7.29		51.8		14.28		200	4.02
1325		x	6.92		0.426		93.9		7.22		53.0		14.22		200	4.12

*Indicator readings have stabilized when 3 consecutive readings are within: +/- 0.1 for pH; +/- 3% for Specific Conductivity and Temperature; +/- 10 mv for Redox Potential; and +/- 10% for Dissolved Oxygen and Turbidity

LOW FLOW PURGE AND SAMPLING (LFPS) RECORD - GROUNDWATER

PARSONS

CLIENT: USACE

WELL #: 812MW04

SAMPLING INFORMATION

SAMPLING DEVICE: LFPS

SAMPLE NAME (ID): FTMM-64-GW-812MW04-4.7

SAMPLE PARAMETER	TIME	CONTAINER	COLOR	TURBIDITY	COMMENTS
VOCs	1325	40mL VOAs	Clear	53.0	

QA/QC SAMPLES:

DUPLICATE SAMPLE COLLECTED: YES or NO

DUPLICATE SAMPLE NAME (ID): ________

MS/MSD SAMPLE COLLECTED: YES or NO

MS / MSD SAMPLE NAME (ID): ________

PURGING AND SAMPLING COMMENTS:

INVESTIGATION DERIVED WASTE (IDW): PTGS

Date:									
Volume Transfered to Drum:									
Drum Number:									

ATTACHMENT F
Compliance Averaging Methodology Applied at FTMM-660

ATTACHMENT F

Details Regarding Compliance Averaging using the 95 percent Upper Confidence Limit
FTMM-66 (Building 886 Former Aboveground Storage Tank)

INTRODUCTION

This attachment summarizes the methodology and results of compliance averaging using the 95 percent Upper Confidence Limit (UCL) of the mean (95% UCL) for the FTMM-66 site at Fort Monmouth (FTMM) in Oceanport, New Jersey. New Jersey Department of Environmental Protection (NJDEP) technical guidance (2012) provides a 95% UCL approach that can be used for all exposure pathways in the remedial investigation or remedial action phases. At FTMM-66, the site has already been investigated and soils containing total petroleum hydrocarbon (TPH) have already been excavated during previous remedial actions. Compliance averaging is used herein to determine whether the current residential remedial goal for extractable petroleum hydrocarbons (EPH) has been achieved at FTMM-66. The previous TPH results, presented in Table 1 of the letter to which this is an attachment, are considered comparable to EPH results for decision making purposes based on NJDEP guidance (2010a and 2010b).

COMPLIANCE AVERAGING APPROACH

Regulatory Approach: NJDEP's "Technical Guidance for Attainment of Remediation Standards and Site-Specific Criteria" (2012) notes in Section 9.0 that the requirements for investigating EPH are found in the "Protocol for Addressing Extractable Petroleum Hydrocarbons" (NJDEP, 2010a), which provides remedial standards for petroleum hydrocarbons. It is Parsons understanding that NJDEP will accept a compliance averaging approach for EPH if the two following criteria are met: 1) the petroleum hydrocarbons are Category 1 (i.e., No. 2 fuel oil and/or diesel fuel) discharges; and 2) EPH concentrations are less than the 8,000 parts per million (ppm) residual product/free product limit. FTMM-66 meets the first criterion.

With regard to the second criteria, although EPH concentrations greater than 8,000 mg/kg were measured at multiple in-place sample locations at FTMM-66, these sample data are over 14 years old. Because the source of contamination was removed by 2003 and is no longer contributing to the onsite release, it is likely that TPH concentrations have been significantly reduced by natural degradation processes since the remediation occurred. Further, subsequent post-excavation groundwater monitoring has demonstrated the reduction of petroleum constituents in groundwater over time (see Parsons, 2016), as well as the lack of measurable free product, such that long-term groundwater monitoring was discontinued based on the recommendations of the Annual (Fourth Quarter) 2015 Groundwater Sampling Report (Parsons, 2016), which was approved by the NJDEP (2016). Therefore, it is Parsons professional judgment that the site conditions meet the intent of the NJDEP policy criteria for EPH. Compliance averaging was used herein to determine whether the current residential remedial goal for EPH has been achieved at FTMM-66.

Approach to Applying Compliance Averaging: The 95% UCL method for compliance averaging was applied at FTMM-66 using an approach consistent with the attainment guidance (NJDEP, 2012). The horizontal and vertical definition of each functional area was drawn using the data points where soil samples results exceeded the NJDEP RDCSRS and the guidelines provided in Appendix A of the NJDEP attainment guidance (NJDEP, 2012). Two functional areas were defined at FTMM-66: Functional Area 1 (0.33 acres) and Functional Area 2 (0.31 acres) (**Figure 1**). Each functional area has two vertical zones, per NJDEP guidance (NJDEP, 2012): the surface zone, less than two feet bgs (0 to 2 feet bgs) is designated with “A”, and the subsurface zone (greater than 2 feet bgs), designated with “B”.

The size of the functional areas is constrained horizontally by the NJDEP attainment guidance. The maximum size of the functional area for residential exposure scenarios is 0.25 acres (for ingestion-dermal pathway). The NJDEP guidance indicates that this size represents one-half of the residential lot size, and assumes exposure is occurring in either the front yard or the back yard of the residence. However, the NJDEP guidance allows for an area to be increased by up to 50 percent, to a total of 0.375 acres, if needed; the sizes of the two functional areas at FTMM-66 are within this limit. Also, the NJDEP guidance indicates that the preferred shape of the functional area is a square, but can vary somewhat based on site configuration and contaminant distribution. Therefore, the guidance allows a rectangular functional area, with a length not more than four times the width. The boundaries of the functional areas include samples used to delineate the boundary of contamination (i.e., where TPH was detected at concentrations less than 5,100 mg/kg).

Therefore, using the naming convention for the functional areas above, the functional areas for at FTMM-66 have names as follows: 1A, 1B, 2A, and 2B. The name and definition of each functional area, including acreage and vertical definition, is included on **Table 1** below**.**

The 95% UCL was calculated for each functional area using ProUCL software (version 5.1). The 95% UCL was calculated using in-place sample results (i.e., following excavation). The 95% UCL is a conservative estimate because it does not account for placement of clean fill after excavation. The higher of field duplicate results was used in the UCL calculations. All data from single sample locations (i.e., from different depth intervals at the same sample location) within the vertical functional area were included in the UCL calculations. Because the reporting limits were not published, the method detection limits were used for non-detects.

Sample location 886-41 was sampled on June 10, 2002, and then resampled in November 2002 with no specific justification provided (Versar, 2006), except that the first sample was in error. Because the resampled location had much lower concentrations at some depths, NJDEP commented on August 27, 2010 (NJDEP, 2010c), that the original sample, with an exceedance of 10,000 mg/kg, could not be dismissed without clear justification. Therefore, the highest value at each depth for sample location 886-41 was selected for the UCL calculation.

At Functional Area 2A, there was not a sufficient number of samples (i.e., 10 or more) or detections for ProUCL to calculate meaningful or reliable statistics. Therefore, the arithmetic mean compliance averaging method was used for this functional area, as described in the NJDEP attainment guidance (NJDEP, 2012).

RESULTS

The results are summarized in **Table 1** below. The supporting documentation for ProUCL and the arithmetic mean calculation are provided in **Attachment A** below. The average TPH concentration for each functional area met the RDCSRS of 5,100 mg/kg (**Table1** below).

REFERENCES

NJDEP, 2010a. Protocol for Addressing Extractable Petroleum Hydrocarbons. Version 5.0, August 9.

NJDEP, 2010b. Health Based and Ecological Screening Criteria for Petroleum Hydrocarbons, Frequently Asked Questions. Version 4.0, August 9.

NJDEP, 2010c. NJDEP letter to the Army dated August 27, 2010, re: Remedial Action Report, Building 886 Site – Main Post, Fort Monmouth, New Jersey.

NJDEP, 2012. Technical Guidance for the Attainment of Remediation Standards and Site Specific Criteria. September 24.

NJDEP, 2016. NJDEP letter to the Army dated November 14, 2016, re: Annual (Fourth Quarter) 2015 Groundwater Sampling Report dated September 2016. Fort Monmouth, Oceanport, Monmouth County.

Parsons, 2016. *Final Annual (Fourth Quarter) 2015 Groundwater Sampling Report, Fort Monmouth, Oceanport, Monmouth County, New Jersey*. September.

Versar, 2006. Remedial Action Report for Soil and Groundwater Contamination. Building 886. U.S. Army Garrison Fort Monmouth, Fort Monmouth, New Jersey. January 13.

ATTACHMENTS

Table 1. Summary of Compliance Averaging Results

Figure 1. TPH Soil Samples and Functional Areas

Attachment A. ProUCL Output and Arithmetic Mean Calculation for Functional Area 2A.

TABLES

Table 1. Summary of Compliance Averaging Results

Functional Area	Acreage	Number of Samples [A]	Functional Area Depth Interval (feet bgs)	95% Upper Confidence Limit
EPH Remedial Standard = 5,100 mg/kg				
1A	0.33	28	0 - 2	662
1B	0.33	110	>2	3,333
2A	0.31	8	0 - 2	714 [B]
2B	0.31	56	>2	5,033

Notes:

[A] – Does not include field duplicates.

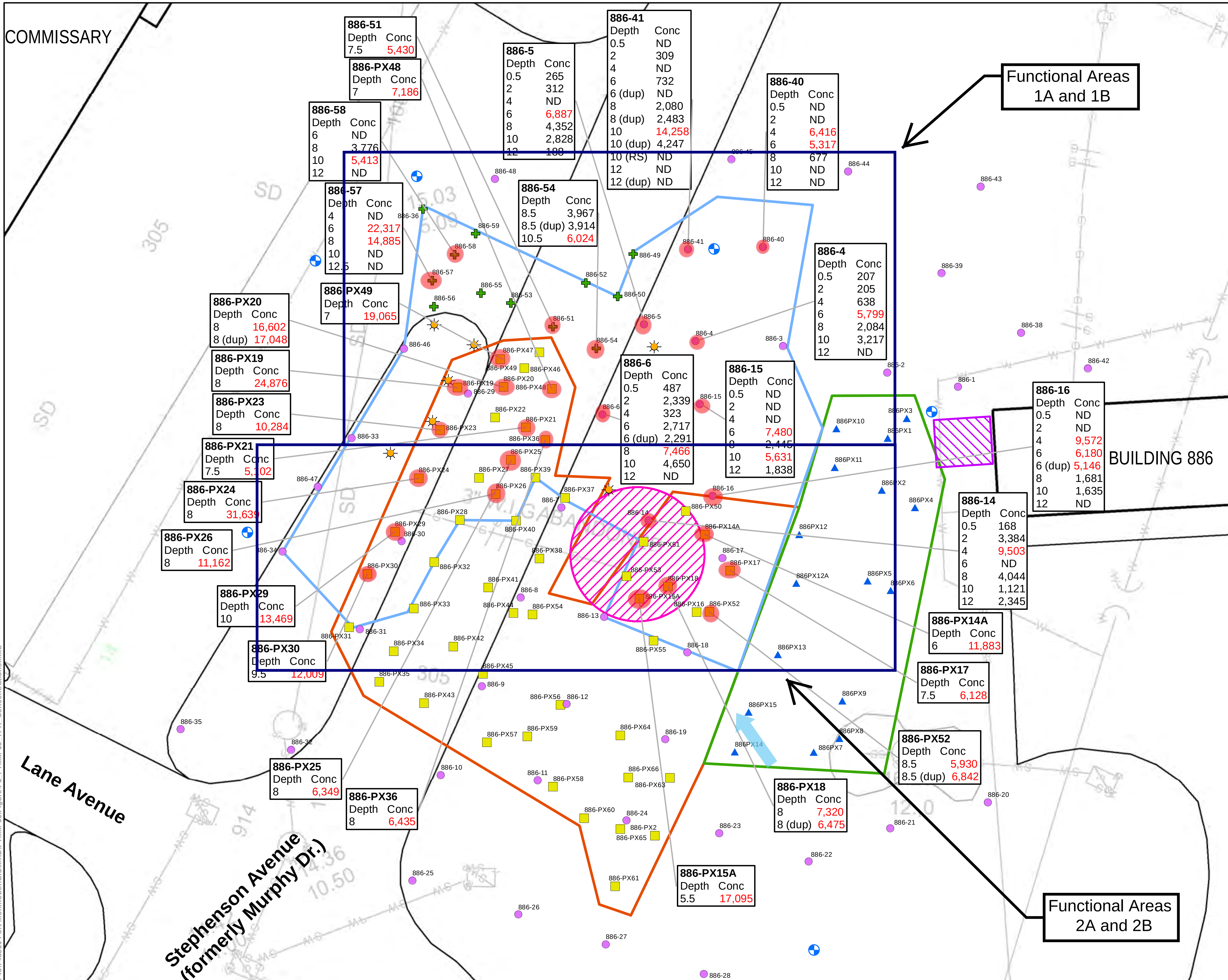
[B] - Too few detections were available to calculate a UCL. Therefore, the arithmetic mean is presented.

Value — UCL achieves compliance with remedial goal

Abbreviations:

bgs - below ground surface

FIGURES



Legend

- Phase 1 Post-Excavation Soil Sample (January - March 2002)
- Phase 1 RI Soil Boring (March - June 2002)
- Phase 2 RI Soil Boring (November 2002)
- Phase 2 Post-Excavation Soil Sample (November 2002 - February 2003)
- Shallow Monitoring Well
- Recovery Well
- Sample Location with TPH > 5,100mg/kg
- Former Aboveground Storage Tank
- Former Underground Storage Tank
- Extent of Soil TPH > 5,100 mg/kg remaining after Phase 2 Excavation
- FTMM-66 Phase 1 Excavation
- FTMM-66 Phase 2 Excavation
- Functional Area
- W Water Line
- S Sanitary Sewer Line
- SW Storm Sewer Line
- G Gas Line
- Estimated Groundwater Flow Direction

ND Not Detected
(dup) Field Duplicate Sample
(RS) Resampled at a Later Date

Notes:
(1) Concentrations are in milligrams per kilogram (mg/kg) and depths are in feet below ground surface.
(2) All TPH concentrations shown were left in place following Phase 2 Excavation in 2002-2003.

N

0 12.5 25 50 75 Feet

Source: FTMM Supplied CAD, 2013. 1 inch = 30 feet

PARSONS
401 Diamond Drive NW, Huntsville AL

Fort Monmouth New Jersey

Extent of TPH > 5,100 mg/kg Remaining in Soil Following Phase 2 Excavation

CREATED BY: TS	REVIEWED BY: JH
DATE: January 2017	FIGURE NUMBER: Figure 1
PROJECT NUMBER: 748810.02170	FILE: Figure4-1_FTMM-66_TPH_Concentrations.mxd

J:\748\748810 Fort Monmouth\GIS\MXD\FTMM-66\Figure4-1_FTMM-66_TPH_Concentrations.mxd

ATTACHMENT A

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 1A

User Selected Options	
Date/Time of Computation	ProUCL 5.11/23/2017 6:55:17 AM
From File	CA.ProUCL.Input.012317.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TPH

General Statistics

Total Number of Observations	28	Number of Distinct Observations	19
Number of Detects	7	Number of Non-Detects	21
Number of Distinct Detects	7	Number of Distinct Non-Detects	12
Minimum Detect	206	Minimum Non-Detect	157
Maximum Detect	2340	Maximum Non-Detect	176
Variance Detects	604636	Percent Non-Detects	75%
Mean Detects	589.7	SD Detects	777.6
Median Detects	309.9	CV Detects	1.319
Skewness Detects	2.567	Kurtosis Detects	6.665
Mean of Logged Detects	5.953	SD of Logged Detects	0.848

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.557	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.803	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.41	Lilliefors GOF Test
5% Lilliefors Critical Value	0.304	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	265.2	KM Standard Error of Mean	82.83
KM SD	405.8	95% KM (BCA) UCL	426.4
95% KM (t) UCL	406.2	95% KM (Percentile Bootstrap) UCL	415.2
95% KM (z) UCL	401.4	95% KM Bootstrap t UCL	987.8
90% KM Chebyshev UCL	513.7	95% KM Chebyshev UCL	626.2
97.5% KM Chebyshev UCL	782.4	99% KM Chebyshev UCL	1089

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.143	Anderson-Darling GOF Test
5% A-D Critical Value	0.724	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.352	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.318	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.313	k star (bias corrected MLE)	0.846
Theta hat (MLE)	448.9	Theta star (bias corrected MLE)	697.2
nu hat (MLE)	18.39	nu star (bias corrected)	11.84
Mean (detects)	589.7		

Gamma ROS Statistics using Imputed Non-Detects

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 1A

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	147.4
Maximum	2340	Median	0.01
SD	449.4	CV	3.048
k hat (MLE)	0.115	k star (bias corrected MLE)	0.126
Theta hat (MLE)	1286	Theta star (bias corrected MLE)	1168
nu hat (MLE)	6.421	nu star (bias corrected)	7.066
Adjusted Level of Significance (β)	0.0404		
Approximate Chi Square Value (7.07, α)	2.207	Adjusted Chi Square Value (7.07, β)	2.043
95% Gamma Approximate UCL (use when n>=50)	472	95% Gamma Adjusted UCL (use when n<50)	509.9

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	265.2	SD (KM)	405.8
Variance (KM)	164664	SE of Mean (KM)	82.83
k hat (KM)	0.427	k star (KM)	0.405
nu hat (KM)	23.91	nu star (KM)	22.68
theta hat (KM)	621	theta star (KM)	654.6
80% gamma percentile (KM)	428.6	90% gamma percentile (KM)	747.3
95% gamma percentile (KM)	1097	99% gamma percentile (KM)	1975

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (22.68, α)	12.85	Adjusted Chi Square Value (22.68, β)	12.39
95% Gamma Approximate KM-UCL (use when n>=50)	468	95% Gamma Adjusted KM-UCL (use when n<50)	485.3

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.747	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.803	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.312	Lilliefors GOF Test
5% Lilliefors Critical Value	0.304	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	162.3	Mean in Log Scale	3.574
SD in Original Scale	444.5	SD in Log Scale	1.571
95% t UCL (assumes normality of ROS data)	305.4	95% Percentile Bootstrap UCL	319.9
95% BCA Bootstrap UCL	405.5	95% Bootstrap t UCL	648.1
95% H-UCL (Log ROS)	325.4		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	5.28	KM Geo Mean	196.4
KM SD (logged)	0.552	95% Critical H Value (KM-Log)	1.985
KM Standard Error of Mean (logged)	0.113	95% H-UCL (KM -Log)	282.5
KM SD (logged)	0.552	95% Critical H Value (KM-Log)	1.985
KM Standard Error of Mean (logged)	0.113		

DL/2 Statistics

DL/2 Normal	DL/2 Log-Transformed

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 1A

Mean in Original Scale	209.8	Mean in Log Scale	4.803
SD in Original Scale	429.3	SD in Log Scale	0.786
95% t UCL (Assumes normality)	347.9	95% H-Stat UCL	231.9

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	626.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 1B

User Selected Options	
Date/Time of Computation	ProUCL 5.11/23/2017 6:56:01 AM
From File	CA.ProUCL.Input.012317_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TPH

General Statistics

Total Number of Observations	110	Number of Distinct Observations	74
		Number of Missing Observations	6
Number of Detects	45	Number of Non-Detects	65
Number of Distinct Detects	45	Number of Distinct Non-Detects	29
Minimum Detect	188	Minimum Non-Detect	153
Maximum Detect	24877	Maximum Non-Detect	4248
Variance Detects	35024996	Percent Non-Detects	59.09%
Mean Detects	5615	SD Detects	5918
Median Detects	4227	CV Detects	1.054
Skewness Detects	1.783	Kurtosis Detects	2.882
Mean of Logged Detects	8.023	SD of Logged Detects	1.273

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.785	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.945	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.221	Lilliefors GOF Test
5% Lilliefors Critical Value	0.131	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	2392	KM Standard Error of Mean	444.2
KM SD	4606	95% KM (BCA) UCL	3206
95% KM (t) UCL	3129	95% KM (Percentile Bootstrap) UCL	3110
95% KM (z) UCL	3123	95% KM Bootstrap t UCL	3281
90% KM Chebyshev UCL	3725	95% KM Chebyshev UCL	4328
97.5% KM Chebyshev UCL	5166	99% KM Chebyshev UCL	6812

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.477	Anderson-Darling GOF Test
5% A-D Critical Value	0.779	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.108	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.136	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.952	k star (bias corrected MLE)	0.903
Theta hat (MLE)	5901	Theta star (bias corrected MLE)	6219
nu hat (MLE)	85.64	nu star (bias corrected)	81.26
Mean (detects)	5615		

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 1B

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2297
Maximum	24877	Median	0.01
SD	4672	CV	2.034
k hat (MLE)	0.112	k star (bias corrected MLE)	0.115
Theta hat (MLE)	20593	Theta star (bias corrected MLE)	20050
nu hat (MLE)	24.54	nu star (bias corrected)	25.21
Adjusted Level of Significance (β)	0.0478		
Approximate Chi Square Value (25.21, α)	14.77	Adjusted Chi Square Value (25.21, β)	14.66
95% Gamma Approximate UCL (use when n>=50)	3920	95% Gamma Adjusted UCL (use when n<50)	3949

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	2392	SD (KM)	4606
Variance (KM)	21212856	SE of Mean (KM)	444.2
k hat (KM)	0.27	k star (KM)	0.268
nu hat (KM)	59.35	nu star (KM)	59.06
theta hat (KM)	8868	theta star (KM)	8911
80% gamma percentile (KM)	3557	90% gamma percentile (KM)	7139
95% gamma percentile (KM)	11332	99% gamma percentile (KM)	22386

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (59.06, α)	42.39	Adjusted Chi Square Value (59.06, β)	42.2
95% Gamma Approximate KM-UCL (use when n>=50)	3333	95% Gamma Adjusted KM-UCL (use when n<50)	3348

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.122	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.131	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2387	Mean in Log Scale	6.096
SD in Original Scale	4629	SD in Log Scale	1.901
95% t UCL (assumes normality of ROS data)	3119	95% Percentile Bootstrap UCL	3118
95% BCA Bootstrap UCL	3262	95% Bootstrap t UCL	3315
95% H-UCL (Log ROS)	4841		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	6.261	KM Geo Mean	523.9
KM SD (logged)	1.677	95% Critical H Value (KM-Log)	2.929
KM Standard Error of Mean (logged)	0.162	95% H-UCL (KM -Log)	3422
KM SD (logged)	1.677	95% Critical H Value (KM-Log)	2.929
KM Standard Error of Mean (logged)	0.162		

DL/2 Statistics

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 1B

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	2374	Mean in Log Scale	5.952
SD in Original Scale	4639	SD in Log Scale	1.95
95% t UCL (Assumes normality)	3108	95% H-Stat UCL	4723

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL 3333

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 2A

User Selected Options	
Date/Time of Computation	ProUCL 5.11/23/2017 6:57:10 AM
From File	CA.ProUCL.Input.012317_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TPH

General Statistics

Total Number of Observations	8	Number of Distinct Observations	7
Number of Detects	3	Number of Non-Detects	5
Number of Distinct Detects	3	Number of Distinct Non-Detects	4
Minimum Detect	168.1	Minimum Non-Detect	162
Maximum Detect	3385	Maximum Non-Detect	172
Variance Detects	2634824	Percent Non-Detects	62.5%
Mean Detects	1903	SD Detects	1623
Median Detects	2155	CV Detects	0.853
Skewness Detects	-0.683	Kurtosis Detects	N/A
Mean of Logged Detects	6.976	SD of Logged Detects	1.619

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.

For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.982	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.228	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	815.2	KM Standard Error of Mean	506.5
KM SD	1170	95% KM (BCA) UCL	N/A
95% KM (t) UCL	1775	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	1648	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	2335	95% KM Chebyshev UCL	3023
97.5% KM Chebyshev UCL	3978	99% KM Chebyshev UCL	5855

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.003	k star (bias corrected MLE)	N/A

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 2A

Theta hat (MLE)	1897	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	6.018	nu star (bias corrected)	N/A
Mean (detects)	1903		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	713.5
Maximum	3385	Median	0.01
SD	1312	CV	1.839
k hat (MLE)	0.117	k star (bias corrected MLE)	0.156
Theta hat (MLE)	6123	Theta star (bias corrected MLE)	4569
nu hat (MLE)	1.864	nu star (bias corrected)	2.499
Adjusted Level of Significance (β)	0.0195		
Approximate Chi Square Value (2.50, α)	0.241	Adjusted Chi Square Value (2.50, β)	0.142
95% Gamma Approximate UCL (use when n>=50)	7403	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	815.2	SD (KM)	1170
Variance (KM)	1368404	SE of Mean (KM)	506.5
k hat (KM)	0.486	k star (KM)	0.387
nu hat (KM)	7.769	nu star (KM)	6.189
theta hat (KM)	1679	theta star (KM)	2107
80% gamma percentile (KM)	1310	90% gamma percentile (KM)	2316
95% gamma percentile (KM)	3426	99% gamma percentile (KM)	6228

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (6.19, α)	1.737	Adjusted Chi Square Value (6.19, β)	1.208
95% Gamma Approximate KM-UCL (use when n>=50)	2904	95% Gamma Adjusted KM-UCL (use when n<50)	4177

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.86	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.334	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.425	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	723.4	Mean in Log Scale	4.219
SD in Original Scale	1306	SD in Log Scale	2.514
95% t UCL (assumes normality of ROS data)	1598	95% Percentile Bootstrap UCL	1413
95% BCA Bootstrap UCL	1717	95% Bootstrap t UCL	17033
95% H-UCL (Log ROS)	2191788		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	5.798	KM Geo Mean	329.6
KM SD (logged)	1.22	95% Critical H Value (KM-Log)	3.987
KM Standard Error of Mean (logged)	0.528	95% H-UCL (KM -Log)	4359

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 2A

KM SD (logged)	1.22	95% Critical H Value (KM-Log)	3.987
KM Standard Error of Mean (logged)	0.528		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	765.7	Mean in Log Scale	5.381
SD in Original Scale	1280	SD in Log Scale	1.579
95% t UCL (Assumes normality)	1623	95% H-Stat UCL	14556

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL 1775

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 2B

User Selected Options	
Date/Time of Computation	ProUCL 5.11/23/2017 7:00:17 AM
From File	CA.ProUCL.Input.012317_c.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TPH

General Statistics

Total Number of Observations	56	Number of Distinct Observations	46
		Number of Missing Observations	8
Number of Detects	27	Number of Non-Detects	29
Number of Distinct Detects	27	Number of Distinct Non-Detects	19
Minimum Detect	217	Minimum Non-Detect	161
Maximum Detect	31639	Maximum Non-Detect	191
Variance Detects	46031506	Percent Non-Detects	51.79%
Mean Detects	6625	SD Detects	6785
Median Detects	5482	CV Detects	1.024
Skewness Detects	2.108	Kurtosis Detects	6.167
Mean of Logged Detects	8.226	SD of Logged Detects	1.254

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.802	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.172	Lilliefors GOF Test
5% Lilliefors Critical Value	0.167	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	3277	KM Standard Error of Mean	768
KM SD	5639	95% KM (BCA) UCL	4715
95% KM (t) UCL	4562	95% KM (Percentile Bootstrap) UCL	4584
95% KM (z) UCL	4541	95% KM Bootstrap t UCL	5046
90% KM Chebyshev UCL	5581	95% KM Chebyshev UCL	6625
97.5% KM Chebyshev UCL	8073	99% KM Chebyshev UCL	10918

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.208	Anderson-Darling GOF Test
5% A-D Critical Value	0.773	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0844	Kolmogorov-Smirnov GOF
5% K-S Critical Value	0.173	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.007	k star (bias corrected MLE)	0.92
Theta hat (MLE)	6580	Theta star (bias corrected MLE)	7203
nu hat (MLE)	54.37	nu star (bias corrected)	49.66
Mean (detects)	6625		

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 2B

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	3194
Maximum	31639	Median	0.01
SD	5737	CV	1.796
k hat (MLE)	0.122	k star (bias corrected MLE)	0.127
Theta hat (MLE)	26189	Theta star (bias corrected MLE)	25084
nu hat (MLE)	13.66	nu star (bias corrected)	14.26
Adjusted Level of Significance (β)	0.0457		
Approximate Chi Square Value (14.26, α)	6.751	Adjusted Chi Square Value (14.26, β)	6.614
95% Gamma Approximate UCL (use when n>=50)	6748	95% Gamma Adjusted UCL (use when n<50)	6887

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	3277	SD (KM)	5639
Variance (KM)	31803102	SE of Mean (KM)	768
k hat (KM)	0.338	k star (KM)	0.332
nu hat (KM)	37.83	nu star (KM)	37.13
theta hat (KM)	9704	theta star (KM)	9885
80% gamma percentile (KM)	5138	90% gamma percentile (KM)	9540
95% gamma percentile (KM)	14511	99% gamma percentile (KM)	27276

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (37.13, α)	24.18	Adjusted Chi Square Value (37.13, β)	23.91
95% Gamma Approximate KM-UCL (use when n>=50)	5033	95% Gamma Adjusted KM-UCL (use when n<50)	5091

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.139	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3293	Mean in Log Scale	6.627
SD in Original Scale	5682	SD in Log Scale	1.815
95% t UCL (assumes normality of ROS data)	4564	95% Percentile Bootstrap UCL	4580
95% BCA Bootstrap UCL	4983	95% Bootstrap t UCL	5016
95% H-UCL (Log ROS)	9190		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	6.597	KM Geo Mean	733.2
KM SD (logged)	1.789	95% Critical H Value (KM-Log)	3.438
KM Standard Error of Mean (logged)	0.244	95% H-UCL (KM -Log)	8317
KM SD (logged)	1.789	95% Critical H Value (KM-Log)	3.438
KM Standard Error of Mean (logged)	0.244		

DL/2 Statistics

UCL Statistics for Data Sets with Non-Detects

FTMM-66, Functional Area 2B

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	3239	Mean in Log Scale	6.28
SD in Original Scale	5712	SD in Log Scale	2.081
95% t UCL (Assumes normality)	4516	95% H-Stat UCL	13748

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Approximate Gamma UCL 5033

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment A
Calculation of Arithmetic Mean for Functional Area 2A
FTMM-66

Boring ID / Sample	Field Sample ID	Sample Date	Sample Depth (feet bgs)	Sample Type	Total Petroleum Hydrocarbons (mg/kg) Original Results	Total Petroleum Hydrocarbons (mg/kg) Calculation of Arithmetic Mean [A]
886-14	886-14-0-6 "	3/12/2002	0.5	N	**168**	**168**
886-14	886-14-24 "	3/12/2002	2	N	**3,385**	**3,385**
886-16	886-16-0-6 "	3/12/2002	0.5	N	ND	0
886-16	886-16-24 "	3/12/2002	2	N	ND	0
886-34	886-34-0-6 "	4/19/2002	0.5	N	ND	0
886-34	886-34-24 "	4/19/2002	2	N	**2,155**	**2,155**
866-47	866-47-0-6"	6/18/2002	0.5	N	ND	0
866-47	886-47 2'	6/18/2002	2	N	ND	0
					Arithmetic Mean:	714

Notes:

[A] - Per NJDEP (2012), nondetects are replaced with 0 when calculating the arithmetic mean.

Bold indicates sample detection.