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NAS CECIL FIELD, FL
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THIRD QUARTER 2005 OPERATIONS AND MAINTENANCE STATUS REPORT FOR DAY
TANK 1 SITE NAS CECIL FIELD FL
11/1/2005
TERRAINE INC ENVIRONMENTAL SERVICES

**THIRD QUARTER 2005
Operations and Maintenance
Status Report
July 1, 2005 to September 30, 2005**

DAY TANK 1 SITE

**Contract No. N62467-02-G-0352
Contract Task Order No. 0001**

**Naval Air Station Cecil Field
Jacksonville, Florida**

Submitted to:

**U.S. Naval Facilities
Engineering Command
Southern Division**

Prepared by:

SIGNATURE PAGE

We, the undersigned, do hereby affirm that the information contained in this report is accurate and correct to the best of our knowledge and belief.

| | | |
|--|------|---|
| James L. Young, P.G., REM President/CEO TERRAINE, Inc. | Date | <u>PG-FL2090, REM-6089</u> Registration Nos. |
|--|------|---|



| | |
|---|------|
| Karen L. Baer Field Superintendent TERRAINE, Inc. | Date |
|---|------|

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ACRONYMS

| | |
|----------|--|
| BOA | Basic Ordering Agreement |
| °C | Degrees Celsius |
| CTO | Contract Task Order |
| DO | Dissolved Oxygen |
| EPA | Environmental Protection Agency |
| FAC | Florida Administrative Code |
| FDEP | Florida Department of Environmental Protection |
| Ft. | Feet |
| Gal. | Gallon |
| Gal/min | Gallon per minute |
| GCTL | Groundwater Cleanup Target Levels |
| IDW | Investigation Derived Waste |
| LNAPL | Light Non-Aqueous Phase Liquids |
| mg/L | Milligrams per liter |
| µS/cm | Microsiemens per centimeter |
| mS/cm | Millisiemens per centimeter |
| mV | millivolts |
| NA | Not Analyzed / Not Available |
| NADSC | Natural Attenuation Default Source Criteria |
| NAS | Naval Air Station |
| NAVFAC | Naval Facilities Engineering Command |
| ND | Non Detect |
| NGVD | National Geodetic Vertical Datum |
| NM | Not Measured |
| NS | Not sampled |
| NTU | Nephelometric Turbidity Units |
| O&M | Operation and Maintenance |
| ORP | Oxidation Reduction Potential |
| S.U. | Standard Unit |
| SVOA | Semi-Volatile Organic Aromatics |
| SVOC | Semi-Volatile Organic Compounds |
| SWS | Southern Waste Services |
| TERRAINE | Terraine Environmental Services, Inc. |
| VEW | Vapor Extraction Well |
| VOA | Volatile Organic Aromatics |
| VOC | Volatile Organic Compounds |

EXECUTIVE SUMMARY

SCOPE

The objective of the remedial action at the site of Day Tank 1 was to reduce the concentrations of petroleum-related contaminants in the groundwater and unsaturated soils to target levels specified by Chapter 62-777 Florida Administrative Code (FAC). A biosparge and vapor extraction system was selected as the remediation system for the site.

Due to the substantial reduction of contaminant concentrations in wells within the area of influence of the remediation system, the Florida Department of Environmental Protection (FDEP) approved deactivating the remediation system on approximately August 15, 2003. Post-active remediation monitoring in accordance with Chapter 62-770.750, FAC began at that time.

As a part of the post-active remediation monitoring, the following wells were to be sampled quarterly for volatile organic aromatics (VOAs) and semi-volatile organic aromatics (SVOAs) for a period of one year to evaluate rebound: vapor extraction wells VEW-2, VEW-3, VEW-4, VEW-5, and VEW-7; and monitoring wells CEF-293-9, and CEF-293-22.

On September 30, 2004, the FDEP recommended to begin sampling groundwater from vapor extraction well VEW-1. Groundwater sampling at this location began during the 4th quarter of 2004.

The purpose of this quarterly Groundwater Monitoring Report is to provide a summary of activities performed at the site during the period of July 1, 2005 to September 30, 2005.

CONCLUSIONS AND RECOMMENDATIONS

Excavation activities at and near the site began between the September 2003 and December 2003 sampling events and continued through September 2004. Excavation was performed on site to the north of the remediation system facility and offsite to the north of the Day Tank 1 site. Possible rebound, first noted in December 2003, could be a result of once adsorbed contaminants being released into groundwater during the beginning of excavation activities. In September 2005, higher /increasing contaminant concentrations were present in groundwater collected near the former excavation site on the western portion of the property (CEF-293-9, VEW-2, VEW-7). In general, contaminant concentrations in groundwater sampled from all other wells indicated decreasing or stabilizing concentrations in comparison to previous sampling events.

Based on analytical data obtained to date, the following is recommended for the site:

- Continue groundwater sampling from monitoring wells CEF-293-9, CEF-293-22 and vapor extraction wells VEW-1, VEW-2, VEW-3, VEW-4, VEW-5, and VEW-7 on a quarterly basis.
- Sample vapor extraction wells VEW-6 and VEW-8 and monitoring wells CEF-293-2 and CEF-293-13 in December 2005 to obtain additional data for the site.
- After obtaining additional data in December 2005, reevaluate site conditions to determine if reactivating the entire system/portions of the system or initiating a natural attenuation monitoring plan is necessary.

OPERATIONS AND MAINTENANCE STATUS REPORT

**DAY TANK 1 SITE
 NAVAL AIR STATION, CECIL FIELD
 JACKSONVILLE, FLORIDA
 SEPTEMBER 2005**

| | |
|-------------------------------|------------------------------------|
| <i>PREPARED FOR:</i> | Mr. Gabe Magwood - SOUTH DIV |
| <i>PREPARED BY:</i> | <i>TERRAINE, Inc.</i> |
| <i>PERIOD OF PERFORMANCE:</i> | July 1, 2005 to September 30, 2005 |
| <i>FIELD TEAM:</i> | Karen Baer, Larry Wolski |
| <i>CONTRACT NUMBER:</i> | N62467-02-G-0352 |
| <i>TASK ORDER NUMBER:</i> | 0001 |
| <i>TASK ORDER MANAGER:</i> | James L. Young, P.G.; REM |
| <i>SUBMITTAL DATE:</i> | November 2005 |

1.0 INTRODUCTION

Terraine, Inc. (TERRAINE) has been contracted by the Department of the Navy, Southern Division Naval Facilities Engineering Command (NAVFAC), to provide Operation and Maintenance (O&M) services at Day Tank 1, Naval Air Station (NAS) Cecil Field, Jacksonville, Florida, under **Basic Ordering Agreement (BOA) Contract No. N62467-02-G-0352, Contract Task Order (CTO) No. 0001**. The purpose of this O&M Report is to provide a summary of activities performed at the site during the period of July 1, 2005 to September 30, 2005.

1.1 Purpose

The objective of the remedial action at the Day Tank 1 site was to reduce the concentrations of petroleum-related contaminants in the groundwater and unsaturated soils to target levels specified by Chapter 62-777 FAC. Biosparging/vapor collection was the technology utilized to achieve this objective.

A system description and a site background and history summary are included in the First Quarter 2004 Operations and Maintenance Status Report submitted by TERRAINE.

1.2 Site Location and Description

The Day Tank 1 site is located at the former NAS Cecil Field, approximately 1/8 mile south of the "A" Avenue gate on Jet Road. A base map illustrating the site location is included in **Figure 1, Appendix A**. A site map is included in **Figure 2, Appendix A**.

2.0 INVESTIGATION AND METHODOLOGY SUMMARY

2.1 System Performance Monitoring

A post-active remediation system check was performed on September 8, 2005. During this check, the system operated for 15 minutes before being manually shut down.

2.2 Summary of Maintenance

No maintenance was performed on the system during the 3rd Quarter 2005.

2.3 Water Level Measurements

Depth-to-groundwater measurements were recorded on September 8, 2005 at monitoring wells CEF-293-9 and CEF-293-22 and vapor extraction wells VEW-1, VEW-2, VEW-3, VEW-4, VEW-5, and VEW-7. Using data collected on September 8, 2005, a groundwater elevation map indicated a groundwater flow pattern to the east-southeast, away from well VEW-1 and is included in **Figure 3, Appendix A**. The top-of-casing elevations, historical calculated Light Non-Aqueous Phase Liquids (LNAPL) thickness, historical depth-to-LNAPL measurements, depth-to-water measurements, and calculated water level elevations are provided in **Table 1, Appendix B**.

No LNAPL was detected in any of the monitoring wells or vapor extraction wells during the Third Quarter 2005.

2.4 Groundwater Sampling

2.4.2 Methodology

Groundwater sampling was conducted at Day Tank 1 on September 8, 2005. Two (2) monitoring wells (CEF-293-9 and CEF-293-22) and six (6) vapor extraction wells (VEW-1, VEW-2, VEW-3, VEW-4, VEW-5, and VEW-7) were purged and sampled using the low-flow methodology. Purging of wells consisted of removing groundwater with a Nomad[®] submersible pump or a Geotech[®] peristaltic pump at a flow rate equal to or less than the groundwater recharge rate in the well until field parameters (temperature, pH, conductivity, turbidity, Dissolved Oxygen [DO] and Oxidation Reduction Potential [ORP]) had stabilized. Water levels in the wells were continuously monitored to maintain drawdown at less than 0.3 feet.

The results from the field measurements are summarized on **Table 2, Appendix B**. Copies of the groundwater purging/sampling logs including all field parameter measurements are provided in **Appendix C**.

2.4.2 Chemical Analysis Suite

Groundwater samples from the monitoring wells were laboratory analyzed for the following analyte suite:

- Volatile Organic Compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260B
- Semi Volatile Organic Compounds (SVOCs) by EPA Method 8270C

2.5 Investigative Derived Waste

Purge water collected from the monitoring wells was collected and containerized. All investigative derived waste (IDW) is stored at the Day Tank 1 remediation compound site in 55-gallon drums and will be transported to Industrial Water Services in Jacksonville, Florida by Southern Waste Services (SWS) Environmental First Response within 90 days of the September 8, 2005 sampling event.

3.0 SUMMARY OF SAMPLING AND LABORATORY ANALYTICAL RESULTS

3.1 Data Validation

A review of quality control data was performed. This review evaluated data completeness, holding time compliance, laboratory blank contamination, and detection limits. The validation process resulted in qualifiers that are shown with the analyte concentrations in **Table 2, Appendix B**.

3.2 Groundwater Monitoring

3.2.1 VOCs

- Groundwater sampled from vapor extraction well VEW-7 exhibited benzene concentrations greater than the Groundwater Cleanup Target Level (GCTL).
- Groundwater sampled from monitoring well CEF-293-9 exhibited ethylbenzene concentrations greater than the GCTL.
- Groundwater sampled from monitoring well CEF-293-9 exhibited xylene concentrations greater than the GCTL.
- Groundwater sampled from monitoring well CEF-293-9 and vapor extraction wells VEW-4 and VEW-7 exhibited naphthalene concentrations greater than the GCTL by EPA Method 8260.
- Groundwater sampled from monitoring well CEF-293-09 and vapor extraction wells VEW-2 and VEW-4 exhibited 1,2,4-trimethylbenzene concentrations greater than the GCTL. Groundwater sampled from monitoring well CEF-293-09 and vapor extraction well VEW-4 exhibited 1,3,5-trimethylbenzene concentrations greater than the GCTL.

3.2.2 PAHs

- Groundwater sampled from monitoring well CEF-293-09 and vapor extraction well VEW-7 exhibited naphthalene concentrations greater than the GCTL by EPA Method 8270.
- Groundwater sampled from monitoring well CEF-293-09 and vapor extraction well VEW-7 exhibited 1-methylnaphthalene and 2-methylnaphthalene concentrations greater than the GCTL.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Excavation activities at and near the site began between the September 2003 and December 2003 sampling events and continued through September 2004. Excavation was performed on site to the north of the remediation system facility and offsite to the north of the Day Tank 1 site. Possible rebound, first noted in December 2003, could be a result of once adsorbed contaminants being released into groundwater during the beginning of excavation activities. In September 2005, higher /increasing contaminant concentrations were present in groundwater collected near the former excavation site on the western portion of the property (CEF-293-9, VEW-2, VEW-7). In general, contaminant concentrations in groundwater sampled from all other wells indicated decreasing or stabilizing concentrations in comparison to previous sampling events.

Based on analytical data obtained to date, the following is recommended for the site:

- Continue groundwater sampling from monitoring wells CEF-293-9, CEF-293-22 and vapor extraction wells VEW-1, VEW-2, VEW-3, VEW-4, VEW-5, and VEW-7 on a quarterly basis.
- Sample vapor extraction wells VEW-6 and VEW-8 and monitoring wells CEF-293-2 and CEF-293-13 in December 2005 to obtain additional data for the site.
- After obtaining additional data in December 2005, reevaluate site conditions to determine if reactivating the entire system/portions of the system or initiating a natural attenuation monitoring plan is necessary.

5.0 REFERENCES

Terraine, Inc. First Quarter 2004 Operation and Maintenance Status Report, Biosparging and Soil Vapor Extraction System, Day Tank 1 Site, Naval Air Station, Cecil Field, Jacksonville, Florida.

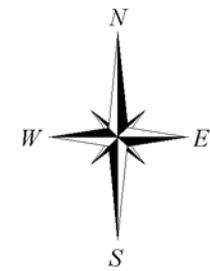
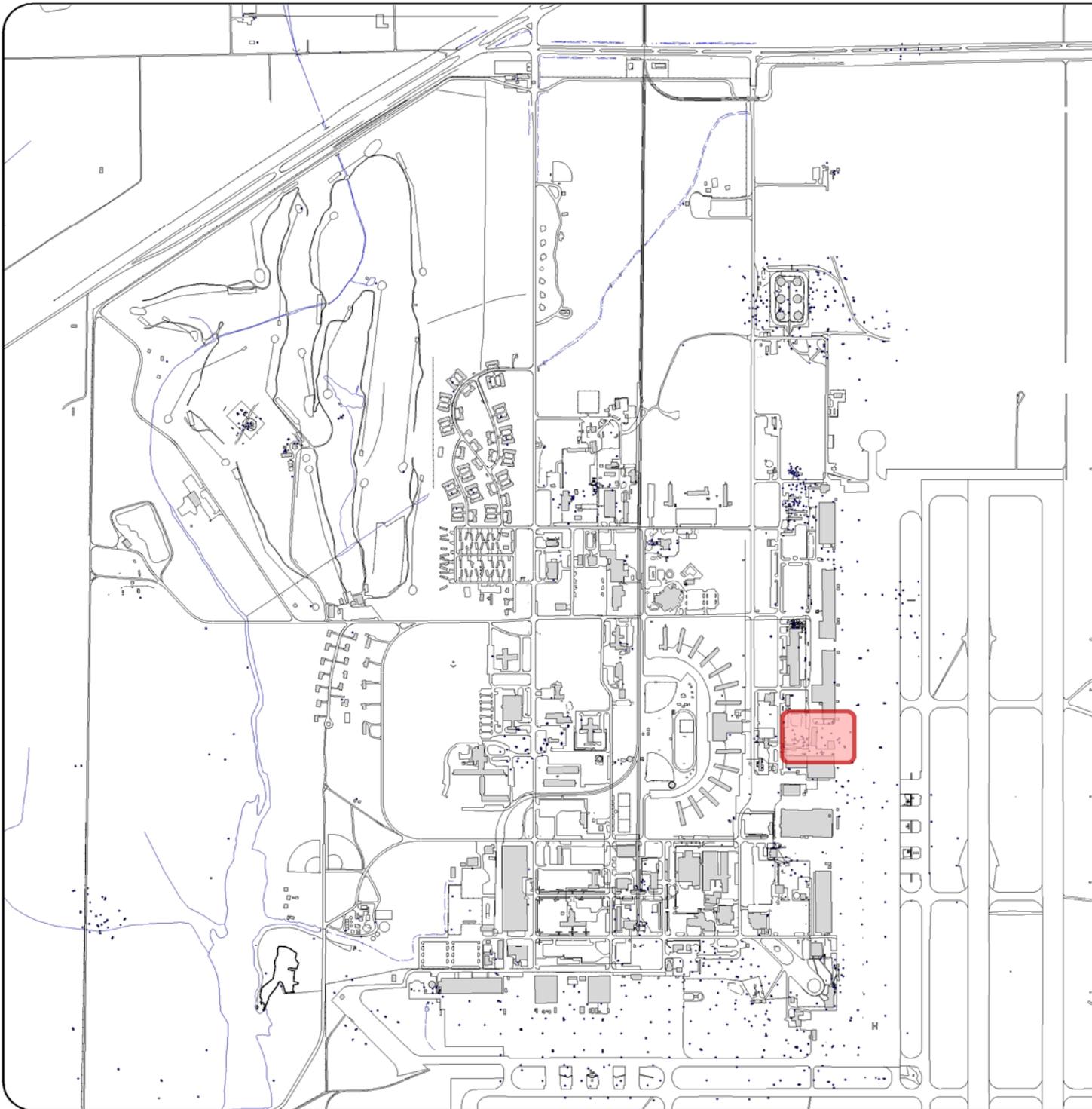
APPENDIX A

FIGURES

Figure 1 *Site Location Map, Day Tank 1*

Figure 2 *Site Map, Day Tank 1*

Figure 3 *Groundwater Elevation Map, September 2005*



NOTES

Sources: Environmental IR Gateway (www.sdirport.com)

LEGEND

 APPROXIMATE SITE BOUNDARY

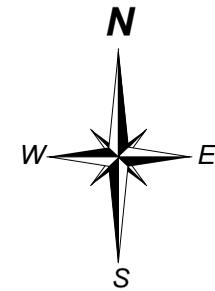
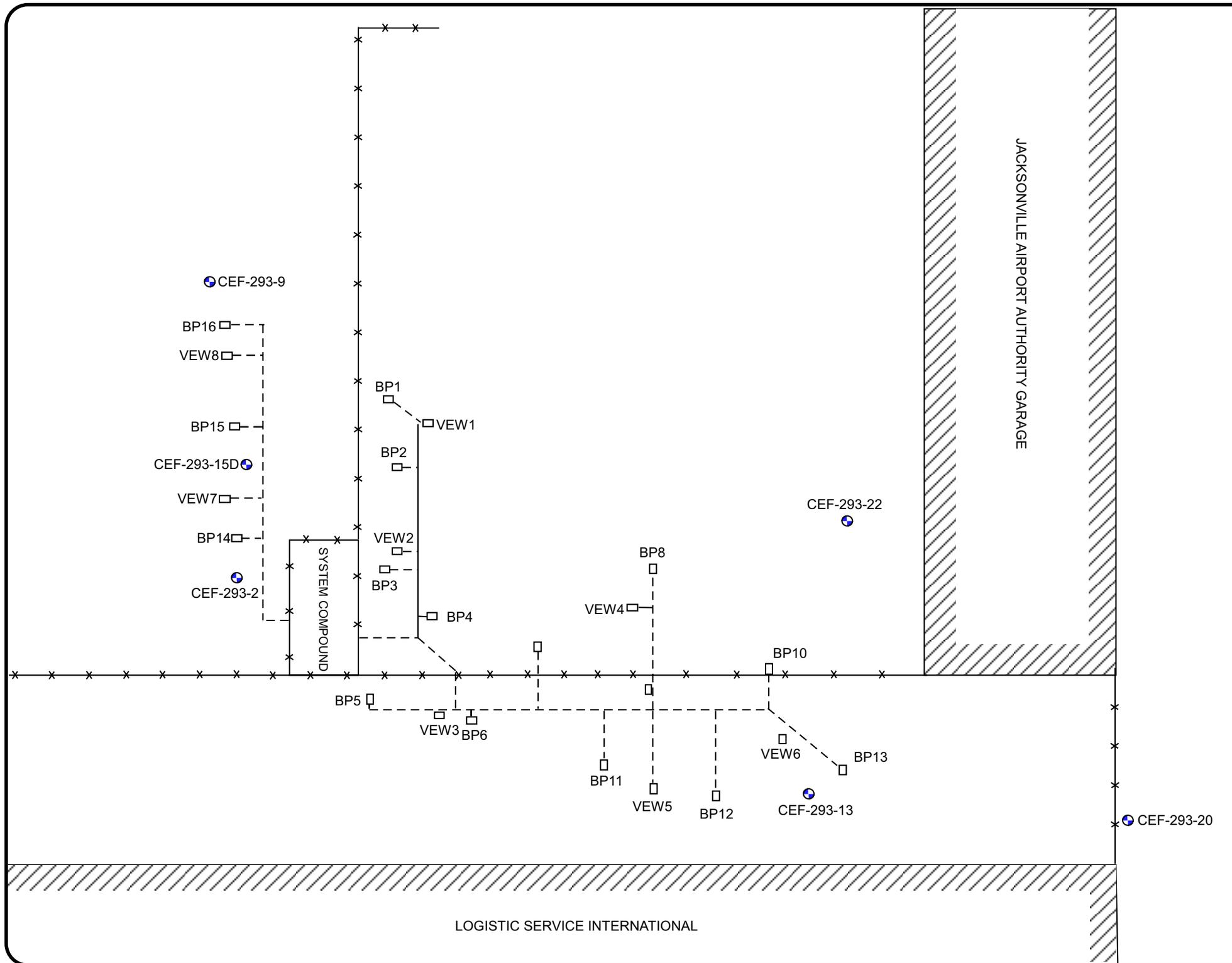
0 0.25 0.5
APPROXIMATE SCALE IN MILES



**NAS CECIL FIELD
FIGURE 1: SITE LOCATION MAP
DAY TANK 1**

Prepared For:
U.S. Naval Facilities Engineering
Command, Southern Division

| | |
|-------------------|-------------|
| DWN BY: LFW | CHK BY: KBG |
| SCALE: SEE LEGEND | APR BY: JLY |
| DATE: 10/12/04 | FILE: N/A |

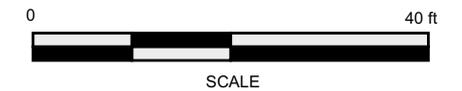


NOTES

DASHED LINES INDICATE SUBSURFACE FEATURES

LEGEND

- x — x — FENCE
- - - - UNDERGROUND LINES
- VAULT COVER
- MONITORING WELL



**NAS CECIL FIELD
FIGURE 2: SITE MAP
DAY TANK 1**

Prepared For:
U.S. Naval Facilities Engineering
Command, Southern Division

DWN BY: JLY

CHK BY:
MJP

SCALE: SEE LEGEND

APR BY: JLY

DATE: 8-26-04

FILE: 04-41001

| Well ID | Groundwater Elevation |
|------------|-----------------------|
| CEF-293-09 | 70.28 |
| CEF-293-22 | 69.64 |
| VEW-1 | 70.69 |
| VEW-2 | 70.05 |
| VEW-3 | 69.93 |
| VEW-4 | 69.80 |
| VEW-5 | 69.93 |
| VEW-7 | 70.19 |

Groundwater elevation is in feet.



NOTES

DASHED LINES INDICATE SUBSURFACE FEATURES

LEGEND

- x — x — FENCE
- - - - UNDERGROUND LINES
- VAULT COVER
- MONITORING WELL



**NAS CECIL FIELD
FIGURE 3: GROUNDWATER
ELEVATION MAP
SEPTEMBER 2005**

Prepared For:
U.S. Naval Facilities Engineering
Command, Southern Division

DWN BY: JLY

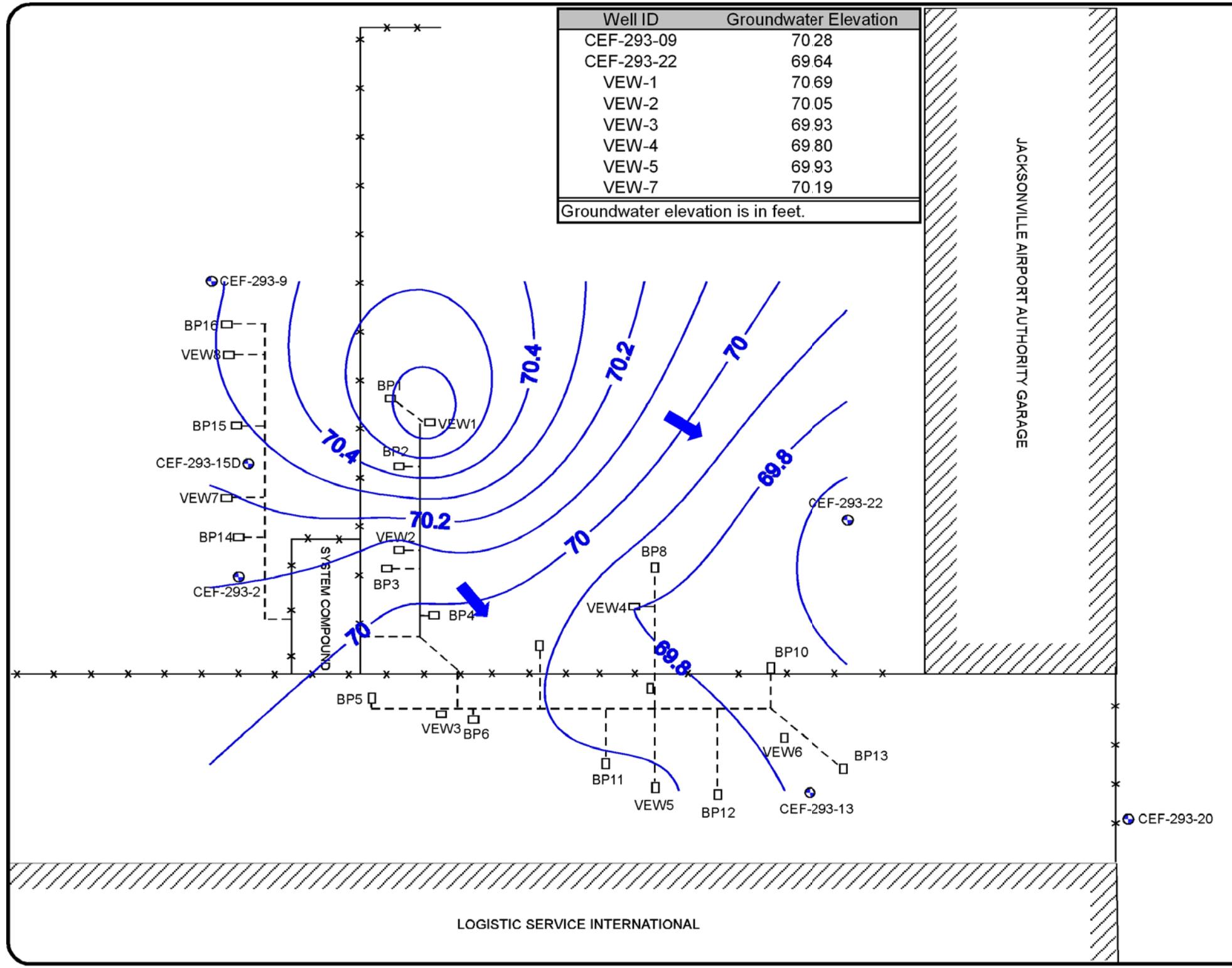
CHK BY:
MJP

SCALE: SEE LEGEND

APR BY: JLY

DATE: 8-03-05

FILE: 04-41001



APPENDIX B
TABLES

Table 1 *Depth to Groundwater/LNAPL Measurements*

Table 2 *Groundwater Field Analytical Results*

Table 3 *Groundwater Analytical Results*

TABLE 1
DEPTH TO GROUNDWATER/LNAPL MEASUREMENTS
DAY TANK 1 BIOSPARGE/VAPOR COLLECTION SYSTEM
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

| Well Identification | Date | Top of Casing Elevation (Feet) | Depth to LNAPL (Feet) | Depth to Water (Feet) | LNAPL Thickness (Feet) | Water Level Elevation (Feet) |
|---------------------|----------|--------------------------------|-----------------------|-----------------------|------------------------|------------------------------|
| CEF-293-09 | 06/13/00 | 77.36 | none present | 9.93 | 0.00 | 67.43 |
| | 03/11/03 | | none present | 6.09 | 0.00 | 71.27 |
| | 06/06/03 | | none present | 7.85 | 0.00 | 69.51 |
| | 09/02/03 | | none present | 7.29 | 0.00 | 70.07 |
| | 12/12/03 | | none present | 9.62 | 0.00 | 67.74 |
| | 03/17/04 | | none present | 9.84 | 0.00 | 67.52 |
| | 06/09/04 | | none present | 9.83 | 0.00 | 67.53 |
| | 09/20/04 | | none present | 6.30 | 0.00 | 71.06 |
| | 12/02/04 | | none present | 8.75 | 0.00 | 68.61 |
| | 03/11/05 | | none present | 8.79 | 0.00 | 68.57 |
| | 06/08/05 | | none present | 8.65 | 0.00 | 68.71 |
| | 09/08/05 | | none present | 7.08 | 0.00 | 70.28 |
| CEF-293-22 | 06/13/00 | 75.95 | none present | 8.88 | 0.00 | 67.07 |
| | 03/11/03 | | none present | 8.33 | 0.00 | 67.62 |
| | 06/07/03 | | none present | 7.00 | 0.00 | 68.95 |
| | 09/02/03 | | none present | 6.34 | 0.00 | 69.61 |
| | 12/12/03 | | none present | 8.65 | 0.00 | 67.30 |
| | 03/17/04 | | none present | 8.80 | 0.00 | 67.15 |
| | 06/09/04 | | none present | 8.56 | 0.00 | 67.39 |
| | 09/20/04 | | none present | 5.60 | 0.00 | 70.35 |
| | 12/02/04 | | none present | 7.90 | 0.00 | 68.05 |
| | 03/11/05 | | none present | 7.90 | 0.00 | 68.05 |
| | 06/08/05 | | none present | 7.71 | 0.00 | 68.24 |
| | 09/08/05 | | none present | 6.31 | 0.00 | 69.64 |
| VEW-01 | 06/13/00 | 76.32 | 8.60 | 10.89 | 2.29 | 67.03 |
| | 03/11/03 | | 5.08 | 5.80 | 0.72 | 71.02 |
| | 06/07/03 | | 6.90 | 7.40 | 0.50 | 69.27 |
| | 09/02/03 | | 4.40 | 4.90 | 0.50 | 71.77 |
| | 12/12/03 | | none present | NM | 0.00 | NM |
| | 03/17/04 | | none present | NM | 0.00 | NM |
| | 06/09/04 | | none present | 8.40 | 0.00 | 67.92 |
| | 09/20/04 | | none present | 4.90 | 0.00 | 71.42 |
| | 12/02/04 | | none present | 7.44 | 0.00 | 68.88 |
| | 03/11/05 | | none present | 7.39 | 0.00 | 68.93 |
| | 06/08/05 | | none present | 7.24 | 0.00 | 69.08 |
| | 09/08/05 | | none present | 5.63 | 0.00 | 70.69 |
| VEW-02 | 06/13/00 | 75.86 | 7.50 | 13.02 | 5.52 | 62.84 |
| | 03/11/03 | | none present | 4.71 | 0.00 | 71.15 |
| | 06/07/03 | | none present | 6.50 | 0.00 | 69.36 |
| | 09/02/03 | | none present | 5.96 | 0.00 | 69.90 |
| | 12/12/03 | | none present | 11.04 | 0.00 | 64.82 |
| | 03/17/04 | | none present | 8.40 | 0.00 | 67.46 |
| | 06/09/04 | | none present | 8.54 | 0.00 | 67.32 |
| | 09/20/04 | | none present | 5.01 | 0.00 | 70.85 |
| | 12/02/04 | | none present | 7.61 | 0.00 | 68.25 |
| | 03/11/05 | | none present | 7.52 | 0.00 | 68.34 |
| | 06/08/05 | | none present | 7.39 | 0.00 | 68.47 |
| | 09/08/05 | | none present | 5.81 | 0.00 | 70.05 |

TABLE 1
DEPTH TO GROUNDWATER/LNAPL MEASUREMENTS
DAY TANK 1 BIOSPARGE/VAPOR COLLECTION SYSTEM
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

| Well Identification | Date | Top of Casing Elevation (Feet) | Depth to LNAPL (Feet) | Depth to Water (Feet) | LNAPL Thickness (Feet) | Water Level Elevation (Feet) |
|---------------------|----------|--------------------------------|-----------------------|-----------------------|------------------------|------------------------------|
| VEW-03 | 06/13/00 | 75.28 | none present | 8.05 | 0.00 | 67.23 |
| | 12/11/02 | | none present | 6.23 | 0.00 | 69.05 |
| | 03/11/03 | | none present | 4.07 | 0.00 | 71.21 |
| | 06/06/03 | | none present | 6.10 | 0.00 | 69.18 |
| | 09/02/03 | | none present | 5.35 | 0.00 | 69.93 |
| | 12/12/03 | | none present | 7.80 | 0.00 | 67.48 |
| | 03/17/04 | | none present | 8.02 | 0.00 | 67.26 |
| | 06/09/04 | | none present | 8.01 | 0.00 | 67.27 |
| | 09/20/04 | | none present | 4.30 | 0.00 | 70.98 |
| | 12/02/04 | | none present | 7.10 | 0.00 | 68.18 |
| | 03/11/05 | | none present | 7.05 | 0.00 | 68.23 |
| | 06/08/05 | | none present | 6.90 | 0.00 | 68.38 |
| | 09/08/05 | | none present | 5.35 | 0.00 | 69.93 |
| VEW-04 | 06/13/00 | 75.54 | none present | 8.38 | 0.00 | 67.16 |
| | 03/11/03 | | none present | 4.66 | 0.00 | 70.88 |
| | 06/07/03 | | none present | 6.50 | 0.00 | 69.04 |
| | 09/02/03 | | none present | 5.80 | 0.00 | 69.74 |
| | 12/12/03 | | none present | 8.12 | 0.00 | 67.42 |
| | 03/17/04 | | none present | 8.30 | 0.00 | 67.24 |
| | 06/09/04 | | none present | 8.37 | 0.00 | 67.17 |
| | 09/20/04 | | none present | 4.95 | 0.00 | 70.59 |
| | 12/02/04 | | none present | 7.50 | 0.00 | 68.04 |
| | 03/11/05 | | none present | 7.45 | 0.00 | 68.09 |
| | 06/08/05 | | none present | 7.20 | 0.00 | 68.34 |
| | 09/08/05 | | none present | 5.74 | 0.00 | 69.80 |
| | VEW-05 | | 06/13/00 | 74.63 | none present | 7.53 |
| 03/11/03 | | none present | 3.80 | | 0.00 | 70.83 |
| 06/06/06 | | none present | 6.75 | | 0.00 | 67.88 |
| 09/02/03 | | none present | 4.95 | | 0.00 | 69.68 |
| 12/12/03 | | none present | 7.40 | | 0.00 | 67.23 |
| 03/17/04 | | none present | 7.50 | | 0.00 | 67.13 |
| 06/09/04 | | none present | 7.55 | | 0.00 | 67.08 |
| 09/20/04 | | none present | 4.10 | | 0.00 | 70.53 |
| 12/02/04 | | none present | 6.80 | | 0.00 | 67.83 |
| 03/11/05 | | none present | 6.25 | | 0.00 | 68.38 |
| 06/08/05 | | none present | 6.10 | | 0.00 | 68.53 |
| 09/08/05 | | none present | 4.70 | | 0.00 | 69.93 |
| VEW-07 | | 06/13/00 | 76.44 | | none present | 9.06 |
| | 03/11/03 | none present | | 5.01 | 0.00 | 71.43 |
| | 06/07/03 | none present | | 6.97 | 0.00 | 69.47 |
| | 09/04/03 | none present | | 6.45 | 0.00 | 69.99 |
| | 12/12/03 | none present | | 8.90 | 0.00 | 67.54 |
| | 03/17/04 | none present | | 9.00 | 0.00 | 67.44 |
| | 06/09/04 | none present | | 8.99 | 0.00 | 67.45 |
| | 09/20/04 | none present | | 5.39 | 0.00 | 71.05 |
| | 12/02/04 | none present | | 8.37 | 0.00 | 68.07 |
| | 03/11/05 | none present | | 7.96 | 0.00 | 68.48 |
| | 06/08/05 | none present | | 7.90 | 0.00 | 68.54 |
| | 09/08/05 | none present | | 6.25 | 0.00 | 70.19 |

LNAPL = Light Non-Aqueous Phase Liquid

NM = Not Measured

Elevation is referenced to National Geodetic Vertical Datum 1929 (NGVD 1929)

Depth to LNAPL is measured from top of casing

Depth to water is measured from top of casing

| TABLE 2 GROUNDWATER FIELD ANALYTICAL RESULTS | | | | | | |
|--|------------|-----------|----------------------|-------------------------|------------------------------------|------------------|
| DAY TANK 1 BIOSPARGE/VAPOR COLLECTION SYSTEM NAS CECIL FIELD JACKSONVILLE, FLORIDA | | | | | | |
| | Date | pH (S.U.) | Conductivity (mS/cm) | Dissolved Oxygen (mg/L) | Oxidation Reduction Potential (mV) | Temperature (°C) |
| CEF-293-9 | 1/25/2000 | 5.99 | 0.088 | NM | NM | 21.40 |
| | 3/11/2003 | 5.90 | 0.29 | 4.29 | 177.00 | 20.85 |
| | 6/6/2003 | 6.00 | 0.472 | 0.00 | -26.00 | 23.26 |
| | 9/2/2003 | 5.84 | 0.730 | 0.93 | -90.00 | 26.10 |
| | 12/12/2003 | 5.86 | 0.998 | 0.01 | -41.00 | 23.22 |
| | 3/17/2004 | 5.40 | 0.279 | 1.00 | NM | 21.10 |
| | 6/9/2004 | 5.61 | 0.280 | 0.26 | -109.60 | 24.03 |
| | 9/20/2004 | 5.66 | 0.283 | 0.15 | -148.80 | 25.79 |
| | 12/2/2004 | 5.82 | 0.342 | 0.19 | -196.90 | 24.97 |
| | 3/11/2005 | 8.34 | 0.240 | 1.49 | -118.00 | 22.08 |
| | 6/8/2005 | 5.44 | 0.263 | 0.23 | -196.50 | 23.67 |
| 9/8/2005 | 5.25 | 0.526 | 0.69 | -249.90 | 25.97 | |
| CEF-293-22 | 1/25/2000 | 6.44 | 0.126 | NM | NM | 23.00 |
| | 3/11/2003 | 3.95 | 0.508 | 3.13 | 193.00 | 21.50 |
| | 6/7/2003 | 5.72 | 0.428 | 0.12 | -20.00 | 25.90 |
| | 9/2/2003 | 5.57 | 0.929 | 0.72 | 52.00 | 28.75 |
| | 12/12/2003 | 5.63 | 0.626 | 4.24 | 99.00 | 24.35 |
| | 3/17/2004 | 5.71 | 0.480 | NM | 74.00 | 23.01 |
| | 6/9/2004 | 4.96 | 0.172 | 0.90 | 15.00 | 25.32 |
| | 9/20/2004 | 4.97 | 0.478 | 0.35 | 70.00 | 27.10 |
| | 12/2/2004 | 5.68 | 0.716 | 0.33 | 6.00 | 26.08 |
| | 3/11/2005 | 5.23 | 0.518 | 0.25 | -83.30 | 21.87 |
| | 6/8/2005 | 5.41 | 0.378 | 0.09 | -98.80 | 25.54 |
| 9/8/2005 | 5.68 | 0.507 | 0.46 | 45.40 | 28.60 | |
| VEW-1 | 12/2/2004 | 5.92 | 0.302 | 0.10 | -216.50 | 25.40 |
| | 3/11/2005 | 7.46 | 0.120 | 0.00 | -100.00 | 21.55 |
| | 6/8/2005 | 5.16 | 0.134 | 0.08 | -198.20 | 23.18 |
| | 9/8/2005 | 6.13 | 0.091 | 1.97 | 48.10 | 27.26 |
| VEW-2 | 1/25/2000 | 5.63 | 0.085 | NM | NM | 22.70 |
| | 3/11/2003 | 5.90 | 0.110 | 2.51 | -53.00 | 21.10 |
| | 6/7/2003 | 6.09 | 0.132 | 0.00 | -86.00 | 22.90 |
| | 9/4/2003 | 5.60 | 0.342 | 1.34 | -163.00 | 26.85 |
| | 12/12/2003 | 5.82 | 0.563 | 4.01 | 23.00 | 22.78 |
| | 3/17/2004 | 5.48 | 0.172 | 0.80 | NM | 21.30 |
| | 6/9/2004 | 5.57 | 0.172 | 0.16 | -75.90 | 23.45 |
| | 9/20/2004 | 6.49 | 0.777 | 0.10 | -141.60 | 25.98 |
| | 12/2/2004 | 5.91 | 0.404 | 0.05 | -225.70 | 24.79 |
| | 3/11/2005 | 8.53 | 0.310 | 0.98 | -170.00 | 21.92 |
| | 6/8/2005 | 5.67 | 0.280 | 0.06 | -209.00 | 23.53 |
| 9/8/2005 | 5.57 | 0.710 | 0.39 | -85.30 | 26.71 | |
| VEW-3 | 1/25/2000 | 5.90 | 0.070 | NM | NM | 22.10 |
| | 3/11/2003 | 4.84 | 0.166 | 6.06 | 202.00 | 21.30 |
| | 6/7/2003 | 5.61 | 0.159 | 0.34 | 30.00 | 25.10 |
| | 9/2/2003 | 5.06 | 0.306 | 0.51 | NM | 27.40 |
| | 12/12/2003 | 5.10 | 0.354 | 0.66 | -223.00 | 24.60 |
| | 3/17/2004 | 5.40 | 0.398 | NM | 176.00 | 21.80 |
| | 6/9/2004 | 4.70 | 0.145 | 0.42 | 70.00 | 25.63 |
| | 9/20/2004 | 5.62 | 0.137 | 0.00 | -42.00 | 27.32 |
| | 12/2/2004 | 5.39 | 0.341 | 0.45 | 32.00 | 25.51 |
| | 3/11/2005 | 5.01 | 0.275 | 0.31 | -10.30 | 22.06 |
| | 6/8/2005 | 4.91 | 0.145 | 0.82 | -9.90 | 26.13 |
| 9/8/2005 | 5.33 | 0.315 | 1.65 | -196.20 | 23.50 | |
| VEW-4 | 1/25/2000 | 5.59 | 0.078 | NM | NM | 23.00 |
| | 3/11/2003 | 4.35 | 0.126 | 5.85 | 190.00 | 22.40 |
| | 6/7/2003 | 5.60 | 0.109 | 0.00 | -41.00 | 25.10 |
| | 9/2/2003 | 5.35 | 0.277 | 0.00 | 106.00 | 27.53 |
| | 12/12/2003 | 5.37 | 0.358 | 0.28 | 182.00 | 24.34 |
| | 3/17/2004 | 5.17 | 0.316 | NM | 200.00 | 22.73 |
| | 6/9/2004 | 4.63 | 0.128 | 0.57 | 210.00 | 25.43 |
| | 9/20/2004 | 5.15 | 0.282 | 0.07 | -46.10 | 27.60 |
| | 12/2/2004 | 4.83 | 0.683 | 0.27 | 103.20 | 26.27 |
| | 3/11/2005 | 4.39 | 0.393 | 0.24 | 44.90 | 22.55 |
| | 6/8/2005 | 4.69 | 0.203 | 0.05 | 64.30 | 26.93 |
| 9/8/2005 | 5.24 | 0.254 | 0.30 | 150.80 | 29.26 | |
| VEW-5 | 1/25/2000 | 6.28 | 0.113 | NM | NM | 21.50 |
| | 3/11/2003 | 4.35 | 0.104 | 5.25 | 227.00 | 20.70 |
| | 6/6/2003 | 5.10 | 0.122 | 0.02 | 40.00 | 24.70 |
| | 9/2/2003 | 4.84 | 0.319 | 0.08 | 158.00 | 27.69 |
| | 12/12/2003 | 4.68 | 0.278 | 0.36 | -214.00 | 23.62 |
| | 3/17/2004 | 5.00 | 0.245 | NM | 232.00 | 21.51 |
| | 6/9/2004 | 4.47 | 0.106 | 0.11 | 238.00 | 25.83 |
| | 9/20/2004 | 3.94 | 0.110 | 0.04 | 144.00 | 26.88 |
| | 12/2/2004 | 5.11 | 0.227 | 0.62 | 159.20 | 24.44 |
| | 3/11/2005 | 5.24 | 0.253 | 0.23 | 53.50 | 20.82 |
| | 6/8/2005 | 4.62 | 0.127 | 0.25 | 206.10 | 25.33 |
| 9/8/2005 | 5.70 | 0.202 | 1.11 | -168.20 | 28.55 | |
| VEW-7 | 1/25/2000 | 5.63 | 0.074 | NM | NM | 21.80 |
| | 3/11/2003 | 4.98 | 0.111 | 2.69 | 86.00 | 18.50 |
| | 6/7/2003 | 5.70 | 0.134 | 0.00 | -36.00 | 22.00 |
| | 9/4/2003 | 5.01 | 0.318 | 2.26 | -42.00 | 25.31 |
| | 12/12/2003 | 5.07 | 0.469 | 0.17 | -307.00 | 23.18 |
| | 3/17/2004 | 5.44 | 0.186 | 1.20 | NM | 21.40 |
| | 6/9/2004 | 5.36 | 0.214 | 0.18 | -65.60 | 24.23 |
| | 9/20/2004 | 5.41 | 0.220 | 0.24 | -137.90 | 25.36 |
| | 12/2/2004 | 5.71 | 0.295 | 0.18 | -145.90 | 24.95 |
| | 3/11/2005 | 7.92 | 0.260 | 3.32 | -107.00 | 22.00 |
| | 6/8/2005 | 5.26 | 0.241 | 0.3 | -138.00 | 23.08 |
| 9/8/2005 | 5.16 | 0.421 | 0.59 | -203.60 | 25.70 | |

S.U. = standard units
mS/cm = millisiemens per centimeter
mg/L = Milligrams per liter
°C = degrees Centigrade
NM = not measured

TABLE 3
Groundwater Analytical Results
NAS Cecil Field, Jacksonville, Florida

| Sample I.D. | Date | Benzene | Ethylbenzene | Toluene | Xylenes (total) | Acenaphthylene | Acenaphthene | Fluoranthene | Pyrene | Chrysene | Benzo (a) anthracene | Benzo(b) Fluoranthene | Benzo(K) Fluoranthene | Benzo(a) Pyrene | Benzo(g,h,i) Perylene | Indeno (1,2,3-cd) Pyrene | Naphthalene by Method 8270C-SM | Naphthalene by Method 8260 | 1-Methylnaphthalene | 2-Methylnaphthalene | Phenanthrene | Fluorene | Isopropylbenzene | Chloroform | n-Propylbenzene | sec-Butylbenzene | n-Butylbenzene | T-butylbenzene | 1,2,4 Trimethylbenzene | 1,3,5 Trimethylbenzene | p-Isopropyltoluene | | | |
|-------------|----------|--------------|--------------|---------|-----------------|----------------|--------------|--------------|--------|----------|----------------------|-----------------------|-----------------------|-----------------|-----------------------|--------------------------|--------------------------------|----------------------------|---------------------|---------------------|--------------|----------|------------------|------------|-----------------|------------------|----------------|----------------|------------------------|------------------------|--------------------|--------|-------|------|
| CEF 293-9 | 01/25/00 | 43.1 | 652 | 626 | 2150 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 378 | -- | 128 | 162 | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 12/09/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 06/06/03 | 3.8 | 4.3 | ND | 20.2 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 3.9 | ND | ND | ND | 5.8 | ND | -- | -- | -- | ND | -- | ND | -- | ND | -- | | |
| | 09/02/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.36 | ND | 0.20 | ND | ND | ND | 11.8 | ND | -- | -- | ND | -- | ND | -- | ND | -- | | |
| | 12/12/03 | 2.9 | 5.8 | ND | 3.5 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 19.4 | 18.4 | ND | ND | ND | 11.8 | ND | 12.5 | 3.3 | 1.9 | ND | -- | ND | -- | ND | -- | |
| | 03/17/04 | 2.3 | 5.7 | ND | ND | ND | 0.14 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 136 | 144 | 47.1 | 50.4 | ND | 7.9 | ND | 13.1 | 4.1 | 2.4 | ND | -- | ND | -- | ND | -- | |
| | 06/09/04 | ND | 6.96 | ND | 1.54 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 63.8 | 81.6 | 24.6 | 22.4 | ND | 12.2 | ND | 15.9 | 6.63 | ND | ND | 6.93 | 2.98 | 3.47 | 1.2 | | |
| | 09/20/04 | ND | 1.25 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 12.4 | 24.1 | 3.8 | 4.5 | ND | 3.6 | ND | 4.48 | 1.04 | ND | ND | 3.75 | 3.06 | ND | ND | | |
| | 12/02/04 | ND | 7.180 | ND | 3.25 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 33.64 | 72.84 | 16.1 J3 | 22.7 J3 | ND | 12.51 | ND | 15.37 | 6.20 | ND | ND | 26.34 | 7.77 | 5.53 | 5.56 | | |
| | 03/11/05 | ND | 6.060 | ND | 1.461 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 19.2 | 66.2 | 7.48 | 12.2 | ND | 17.4 | ND | 22.0 | 8.20 | ND | ND | 30.7 | 6.50 | ND | ND | | |
| 06/08/05 | ND | 17.8 | ND | 21.7 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 11.8 | 29.2 | 7.21 | 12.1 | ND | 17.5 | ND | 16.9 | 5.24 | ND | ND | 36.4 | 13.80 | 4.11 | 4.11 | | | |
| 09/08/05 | ND | 41.1 | 1.181 | 47.4 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 50.4 | 75.4 | 26.9 | 43.3 | ND | 18.9 | ND | 23.5 | 7.42 | ND | ND | 70.9 | 31.80 | 8.81 | 8.81 | | | |
| CEF 293-22 | 01/25/00 | 24.2 | 19.4 | 0.88 | 47.8 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 142 | -- | 59.6 | 67 | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 03/11/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | ND | 2.4 | ND | 0.13 | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | |
| | 06/09/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.64 | -- | 4.97 | 3.76 | 0.21 | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | |
| | 09/02/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 1.34 | 0.96 | 0.12 | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | |
| | 12/12/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 1.07 | 0.88 | 0.23 | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | |
| | 03/17/04 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 1.35 | 1.20 | 0.16 | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | |
| | 06/09/04 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | ND | 0.7801 | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | |
| | 09/20/04 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | ND | ND | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | |
| | 12/02/04 | 3.67 | ND | ND | 1.801 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | ND | ND | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | |
| | 03/11/05 | 3.59 | 1.561 | ND | 3.73 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | ND | ND | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | |
| 06/08/05 | 2.74 | 1.661 | ND | 5.89 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | ND | ND | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | | |
| 09/08/05 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | ND | ND | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | | | | |
| VEW-1 | 01/25/00 | 18.5 | 257 | 59.4 | 729 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 390 | -- | 397 | 397 | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 06/13/00 | FREE PRODUCT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 03/11/03 | FREE PRODUCT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 06/07/03 | FREE PRODUCT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 09/04/03 | FREE PRODUCT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 12/12/03 | NOT SAMPLED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 03/17/04 | NOT SAMPLED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 06/09/04 | NOT SAMPLED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 09/20/04 | NOT SAMPLED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 12/02/04 | ND | 18.17 | 0.97001 | 39.7 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 7.590 | ND J3 | ND J3 | ND | ND | 4.7 | ND | 4.280 | 2.20 | ND | ND | 32.06 | 5.13 | 4.080 | | | |
| 03/11/05 | ND | 11.0 | 0.4501 | 28.0 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 12.4 | ND | ND | ND | ND | 4.86 | ND | 2.28 | ND | ND | ND | ND | ND | 39 | 5.25 | | | |
| 06/08/05 | ND | 28.4 | 1.291 | 83.1 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 35.2 | ND | ND | ND | ND | 12.0 | ND | 15.8 | 10.80 | ND | ND | 94.1 | 19.5 | 17.0 | | | | |
| 09/08/05 | ND | 0.4101 | ND | 0.5101 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.4301 | ND | ND | | | | |
| VEW-2 | 01/25/00 | 91.6 | 149 | 29.2 | 573 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 283 | -- | 118 | 139 | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 03/11/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 06/07/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | 1.06 | 0.42 | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 09/04/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 1.4 | 0.54 | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 12/12/03 | ND | ND | ND | 3.7 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 0.18 | ND | ND | 3.2 | ND | ND | -- | -- | -- | -- | -- | -- | | | |
| | 03/17/04 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 0.58 | ND | 1.09 | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | |
| | 06/09/04 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 0.2841 | ND | 0.3961 | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | |
| | 09/20/04 | ND | ND | ND | 2.45 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | -- | -- | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | ND, J3 | | |
| | 12/02/04 | ND | 1.3101 | ND | 3.85 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 1.161 | 10.03 | 3.18 J31 | 2.05 J31 | ND | ND | 1.6901 | ND | 2.14 | 1.931 | ND | ND | 16.56 | 1.701 | 3.52 |
| | 03/11/05 | ND | 0.9301 | ND | 1.251 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 0.5571 | 13.0 | 1.291 | 1.151 | ND | ND | 1.481 | ND | 2.45 | 1.941 | ND | ND | 13.30 | 2.84 | |
| 06/08/05 | ND | 0.5601 | ND | 0.4601 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 4.9 | ND | ND | 1.161 | ND | 1.431 | 2.02 | ND | ND | 11.70 | 0.7501 | 1.931 | | | | |
| 09/08/05 | ND | 0.5601 | ND | 1.231 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | -- | 1.521 | 4.9 | 4.231 | 1.531 | ND | 2.46 | 2.52 | ND | ND | 16.90 | 3.5 | 3.73 | | | | |
| VEW-3 | 01/25/00 | 24.4 | 95.6 | 11.9 | 128 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 288 | -- | 78 | 102 | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 03/11/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 06/06/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND | 1.8 | ND | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 09/02/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| | 12/12/03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | ND | ND | ND | 3.2 | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | |
| | 03/17/04 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | -- | ND | 2.27 | ND | ND | 3.8 | ND | 4.2 | | | | | | | | | |

APPENDIX C

*September 2005 Groundwater Purging and Sampling
Logs*

GROUNDWATER PURGING & SAMPLING LOG



Project Information

| | | | |
|---|--|---------------------------------|--|
| Project No: 04-41001/5 | Project Name: Day Tank 1 - Cecil Field LTM/RAO | | |
| Technician 1: Karen Baer | Technician 2: | Weather: "Partly Cloudy, Sunny" | |
| Sampling ID: 04-41001/5:CEF-293-09:9/8/05 | | | |
| Notes: | | | |

Well Information

| | | | |
|----------------------------------|--------------------------------|----------------------------|--|
| Well ID: CEF-293-09 | Sampling Date: 9/8/2005 | | |
| Well Diam (in): 2.0 | Total Well Depth (ft): 14.00 | Well Screen Interval (ft): | |
| TOC Elevation (ft amsl): 77.36 | Northing: 0 | Easting: 0 | |
| Static Depth to Water (ft): 7.08 | Well Capacity (gal): 1.12 | | |

Purge Setup

| | | | |
|---------------------------|-------------------------|----------------------------|-------------------------|
| Purge Method: Peristaltic | Tubing Material: PPE | | Pump Set at (ft): 11.00 |
| pH Meter: YSI 556 MPS | Cond. Meter: YSI 556MPS | DO Meter: YSI 556 MPS | Turb. Meter: Hach 2100P |
| Purge Start: 14:44 | Purge End: 15:18 | Total Volume Purged (gal): | 2.20 |

Purging Data

| Time | Water Level (ft) | Vol Purged (gal) | Pump Rate (gal/min) | DO (mg/L) | Temp (°C) | SEC (µS/cm) | pH | ORP (mV) | Turbidity (NTU) | Salinity | Color | Odor |
|-------|------------------|------------------|---------------------|-----------|-----------|-------------|------|----------|-----------------|----------|-------|----------|
| 15:08 | 7.15 | 1.60 | 0.06 | 1.17 | 26.06 | 533.0 | 5.29 | -249.8 | 9.77 | | clear | sulfuric |
| 15:12 | 7.19 | 1.80 | 0.05 | 0.87 | 26.02 | 533.0 | 5.28 | -251.1 | 8.07 | | | |
| 15:16 | 7.19 | 2.20 | 0.10 | 0.71 | 25.98 | 527.0 | 5.25 | -249.8 | 7.02 | | | |

Sampling Data

| <u>Sample Information</u> | | <u>Final Purge Readings</u> | | <u>Hach Field Data (mg/L)</u> | | <u>CHEMetrics Field Data (mg/L)</u> | |
|------------------------------|--------------------------|-----------------------------|--------|-------------------------------|--|-------------------------------------|--|
| Sample Date: | 9/8/2005 | DO (mg/L): | 0.69 | DO: | | DO High Range: | |
| Sample Start Time: | 15:18 | Temp (°C): | 25.97 | CO2: | | DO High Range: | |
| Sample End Time: | 15:24 | SEC (uS/cm): | 526 | Alkalinity: | | CO2 High Range: | |
| Field Filtered: | <input type="checkbox"/> | pH: | 5.25 | Ferrous Iron: | | CO2 Low Range: | |
| Duplicate: | <input type="checkbox"/> | ORP (mV): | -249.9 | H2S: | | | |
| | | Turb (NTU): | 6.96 | Manganese: | | | |
| | | Salinity: | | Sulfate: | | Alkalinity High Range: | |
| | | | | Sulfide: | | Alkalinity Low Range: | |
| | | | | Nitrate: | | | |
| <u>Lab Analyses/Methods:</u> | | <u>Technician Initials</u> | | | | | |
| "PAHs, VOCs" | | | | | | | |

GROUNDWATER PURGING & SAMPLING LOG



Project Information

| | | | |
|---|--|------------------------|--|
| Project No: 04-41001/5 | Project Name: Day Tank 1 - Cecil Field LTM/RAO | | |
| Technician 1: Larry Wolski | Technician 2: | Weather: Partly Cloudy | |
| Sampling ID: 04-41001/5:CEF-293-22:9/8/05 | | | |
| Notes: | | | |

Well Information

| | | | |
|----------------------------------|--------------------------------|----------------------------|--|
| Well ID: CEF-293-22 | Sampling Date: 9/8/2005 | | |
| Well Diam (in): 2.0 | Total Well Depth (ft): 14.70 | Well Screen Interval (ft): | |
| TOC Elevation (ft amsl): 75.95 | Northing: 0 | Easting: 0 | |
| Static Depth to Water (ft): 6.31 | Well Capacity (gal): 1.36 | | |

Purge Setup

| | | | |
|---------------------------|-------------------------|----------------------------|-------------------------|
| Purge Method: Peristaltic | Tubing Material: PPE | | Pump Set at (ft): 11.00 |
| pH Meter: YSI 556 MPS | Cond. Meter: YSI 556MPS | DO Meter: YSI 556 MPS | Turb. Meter: Hach 2100P |
| Purge Start: 12:34 | Purge End: 13:06 | Total Volume Purged (gal): | 1.85 |

Purging Data

| Time | Water Level (ft) | Vol Purged (gal) | Pump Rate (gal/min) | DO (mg/L) | Temp (°C) | SEC (µS/cm) | pH | ORP (mV) | Turbidity (NTU) | Salinity | Color | Odor |
|-------|------------------|------------------|---------------------|-----------|-----------|-------------|------|----------|-----------------|----------|-------|------|
| 12:57 | 6.54 | 1.40 | 0.06 | 0.71 | 28.61 | 523.0 | 5.65 | 58.7 | 8.38 | | clear | none |
| 13:01 | 6.48 | 1.60 | 0.05 | 0.54 | 28.73 | 517.0 | 5.68 | 51.4 | 6.14 | | | |
| 13:05 | 6.48 | 1.80 | 0.05 | 0.47 | 28.67 | 509.0 | 5.67 | 46.4 | 5.41 | | | |

Sampling Data

| <u>Sample Information</u> | | <u>Final Purge Readings</u> | | <u>Hach Field Data (mg/L)</u> | | <u>CHEMetrics Field Data (mg/L)</u> | |
|------------------------------|--------------------------|-----------------------------|------|-------------------------------|--|-------------------------------------|--|
| Sample Date: | 9/8/2005 | DO (mg/L): | 0.46 | DO: | | DO High Range: | |
| Sample Start Time: | 13:06 | Temp (°C): | 28.6 | CO2: | | DO High Range: | |
| Sample End Time: | 13:15 | SEC (uS/cm): | 507 | Alkalinity: | | CO2 High Range: | |
| Field Filtered: | <input type="checkbox"/> | pH: | 5.68 | Ferrous Iron: | | CO2 Low Range: | |
| Duplicate: | <input type="checkbox"/> | ORP (mV): | 45.4 | H2S: | | | |
| | | Turb (NTU): | 5.51 | Manganese: | | | |
| | | Salinity: | | Sulfate: | | Alkalinity High Range: | |
| | | | | Sulfide: | | Alkalinity Low Range: | |
| | | | | Nitrate: | | | |
| <u>Lab Analyses/Methods:</u> | | <u>Technician Initials</u> | | | | | |
| "PAHs, VOCs" | | | | | | | |

GROUNDWATER PURGING & SAMPLING LOG



Project Information

| | | | |
|---------------------------------------|--|---------------------------------|--|
| Project No: 04-41001/5 | Project Name: Day Tank 1 - Cecil Field LTM/RAO | | |
| Technician 1: Larry Wolski | Technician 2: | Weather: "Windy, Partly Cloudy" | |
| Sampling ID: 04-41001/5:VEW-01:9/8/05 | | | |
| Notes: | | | |

Well Information

| | | | |
|----------------------------------|--------------------------------|----------------------------|--|
| Well ID: VEW-01 | Sampling Date: 9/8/2005 | | |
| Well Diam (in): 2.0 | Total Well Depth (ft): 14.50 | Well Screen Interval (ft): | |
| TOC Elevation (ft amsl): 76.32 | Northing: 0 | Easting: 0 | |
| Static Depth to Water (ft): 5.63 | Well Capacity (gal): 1.44 | | |

Purge Setup

| | | | |
|---------------------------|-------------------------|----------------------------|-------------------------|
| Purge Method: Peristaltic | Tubing Material: PPE | | Pump Set at (ft): 10.00 |
| pH Meter: YSI 556 MPS | Cond. Meter: YSI 556MPS | DO Meter: YSI 556 MPS | Turb. Meter: Hach 2100P |
| Purge Start: 14:56 | Purge End: 15:37 | Total Volume Purged (gal): | 1.95 |

Purging Data

| Time | Water Level (ft) | Vol Purged (gal) | Pump Rate (gal/min) | DO (mg/L) | Temp (°C) | SEC (µS/cm) | pH | ORP (mV) | Turbidity (NTU) | Salinity | Color | Odor |
|-------|------------------|------------------|---------------------|-----------|-----------|-------------|------|----------|-----------------|----------|-------|------|
| 15:26 | 5.74 | 1.50 | 0.07 | 2.15 | 27.12 | 92.0 | 5.95 | 57.7 | 128.00 | | brown | none |
| 15:30 | 5.75 | 1.70 | 0.05 | 2.12 | 27.10 | 92.0 | 6.02 | 55.2 | 135.00 | | | |
| 15:34 | 5.74 | 1.90 | 0.05 | 2.00 | 27.22 | 92.0 | 6.07 | 49.1 | 141.00 | | | |

Sampling Data

| <u>Sample Information</u> | | <u>Final Purge Readings</u> | | <u>Hach Field Data (mg/L)</u> | | <u>CHEMetrics Field Data (mg/L)</u> | |
|------------------------------|--------------------------|-----------------------------|-------|-------------------------------|--|-------------------------------------|--|
| Sample Date: | 9/8/2005 | DO (mg/L): | 1.97 | DO: | | DO High Range: | |
| Sample Start Time: | 15:37 | Temp (°C): | 27.26 | CO2: | | DO High Range: | |
| Sample End Time: | 15:52 | SEC (uS/cm): | 91 | Alkalinity: | | CO2 High Range: | |
| Field Filtered: | <input type="checkbox"/> | pH: | 6.13 | Ferrous Iron: | | CO2 Low Range: | |
| Duplicate: | <input type="checkbox"/> | ORP (mV): | 48.1 | H2S: | | | |
| | | Turb (NTU): | 142 | Manganese: | | | |
| | | Salinity: | | Sulfate: | | Alkalinity High Range: | |
| | | | | Sulfide: | | Alkalinity Low Range: | |
| | | | | Nitrate: | | | |
| <u>Lab Analyses/Methods:</u> | | <u>Technician Initials</u> | | | | | |
| "PAHs, VOCs" | | | | | | | |

GROUNDWATER PURGING & SAMPLING LOG



Project Information

| | | | |
|---------------------------------------|--|---------------------------------|--|
| Project No: 04-41001/5 | Project Name: Day Tank 1 - Cecil Field LTM/RAO | | |
| Technician 1: Larry Wolski | Technician 2: | Weather: "Windy, Partly Cloudy" | |
| Sampling ID: 04-41001/5:VEW-02:9/8/05 | | | |
| Notes: | | | |

Well Information

| | | | |
|----------------------------------|--------------------------------|----------------------------|--|
| Well ID: VEW-02 | Sampling Date: 9/8/2005 | | |
| Well Diam (in): 2.0 | Total Well Depth (ft): 16.00 | Well Screen Interval (ft): | |
| TOC Elevation (ft amsl): 75.86 | Northing: 0 | Easting: 0 | |
| Static Depth to Water (ft): 5.81 | Well Capacity (gal): 1.66 | | |

Purge Setup

| | | | |
|---------------------------|-------------------------|----------------------------|-------------------------|
| Purge Method: Peristaltic | Tubing Material: PPE | | Pump Set at (ft): 11.00 |
| pH Meter: YSI 556 MPS | Cond. Meter: YSI 556MPS | DO Meter: YSI 556 MPS | Turb. Meter: Hach 2100P |
| Purge Start: 14:16 | Purge End: 14:36 | Total Volume Purged (gal): | 0.55 |

Purging Data

| Time | Water Level (ft) | Vol Purged (gal) | Pump Rate (gal/min) | DO (mg/L) | Temp (°C) | SEC (µS/cm) | pH | ORP (mV) | Turbidity (NTU) | Salinity | Color | Odor |
|-------|------------------|------------------|---------------------|-----------|-----------|-------------|------|----------|-----------------|----------|--------|------|
| 14:27 | 5.85 | 0.30 | 0.02 | 0.72 | 27.02 | 724.0 | 5.33 | -64.6 | 71.40 | | orange | none |
| 14:30 | 5.84 | 0.40 | 0.03 | 0.55 | 26.78 | 716.0 | 5.39 | -66.4 | 69.50 | | | |
| 14:34 | 5.85 | 0.50 | 0.02 | 0.41 | 26.72 | 712.0 | 5.55 | -83.0 | 66.60 | | | |

Sampling Data

| <u>Sample Information</u> | | <u>Final Purge Readings</u> | | <u>Hach Field Data (mg/L)</u> | | <u>CHEMetrics Field Data (mg/L)</u> | |
|------------------------------|--------------------------|-----------------------------|-------|-------------------------------|--|-------------------------------------|--|
| Sample Date: | 9/8/2005 | DO (mg/L): | 0.39 | DO: | | DO High Range: | |
| Sample Start Time: | 14:36 | Temp (°C): | 26.71 | CO2: | | DO High Range: | |
| Sample End Time: | 14:48 | SEC (uS/cm): | 710 | Alkalinity: | | CO2 High Range: | |
| Field Filtered: | <input type="checkbox"/> | pH: | 5.57 | Ferrous Iron: | | CO2 Low Range: | |
| Duplicate: | <input type="checkbox"/> | ORP (mV): | -85.3 | H2S: | | | |
| | | Turb (NTU): | 65.5 | Manganese: | | | |
| | | Salinity: | | Sulfate: | | Alkalinity High Range: | |
| | | | | Sulfide: | | Alkalinity Low Range: | |
| | | | | Nitrate: | | | |
| <u>Lab Analyses/Methods:</u> | | <u>Technician Initials</u> | | | | | |
| "PAHs, VOCs" | | | | | | | |

GROUNDWATER PURGING & SAMPLING LOG



Project Information

| | | |
|---------------------------------------|--|------------------------|
| Project No: 04-41001/5 | Project Name: Day Tank 1 - Cecil Field LTM/RAO | |
| Technician 1: Karen Baer | Technician 2: | Weather: Partly Cloudy |
| Sampling ID: 04-41001/5:VEW-03:9/8/05 | | |
| Notes: Well capacity inaccurate | | |

Well Information

| | | |
|----------------------------------|--------------------------------|----------------------------|
| Well ID: VEW-03 | Sampling Date: 9/8/2005 | |
| Well Diam (in): 2.0 | Total Well Depth (ft): 0.00 | Well Screen Interval (ft): |
| TOC Elevation (ft amsl): 75.28 | Northing: 0 | Easting: 0 |
| Static Depth to Water (ft): 5.35 | Well Capacity (gal): 0.00 | |

Purge Setup

| | | | |
|---------------------------|-------------------------|---------------------------------|-------------------------|
| Purge Method: Peristaltic | Tubing Material: PPE | Pump Set at (ft): 8.00 | |
| pH Meter: YSI 556 MPS | Cond. Meter: YSI 556MPS | DO Meter: YSI 556 MPS | Turb. Meter: Hach 2100P |
| Purge Start: 12:40 | Purge End: 13:12 | Total Volume Purged (gal): 1.00 | |

Purging Data

| Time | Water Level (ft) | Vol Purged (gal) | Pump Rate (gal/min) | DO (mg/L) | Temp (°C) | SEC (µS/cm) | pH | ORP (mV) | Turbidity (NTU) | Salinity | Color | Odor |
|-------|------------------|------------------|---------------------|-----------|-----------|-------------|------|----------|-----------------|----------|-------|------|
| 13:04 | 5.40 | 0.50 | 0.02 | 2.25 | 28.48 | 314.0 | 5.48 | -114.6 | 6.80 | | clear | none |
| 13:07 | 5.40 | 0.70 | 0.06 | 1.69 | 28.46 | 316.0 | 5.39 | -147.3 | 5.39 | | | |
| 13:11 | 5.40 | 1.00 | 0.07 | 1.67 | 28.48 | 315.0 | 5.34 | -154.4 | 4.72 | | | |

Sampling Data

| <u>Sample Information</u> | | <u>Final Purge Readings</u> | | <u>Hach Field Data (mg/L)</u> | | <u>CHEMetrics Field Data (mg/L)</u> | |
|------------------------------|--------------------------|-----------------------------|--------|-------------------------------|--|-------------------------------------|--|
| Sample Date: | 9/8/2005 | DO (mg/L): | 1.65 | DO: | | DO High Range: | |
| Sample Start Time: | 13:12 | Temp (°C): | 23.5 | CO2: | | DO High Range: | |
| Sample End Time: | 13:24 | SEC (uS/cm): | 315 | Alkalinity: | | CO2 High Range: | |
| Field Filtered: | <input type="checkbox"/> | pH: | 5.33 | Ferrous Iron: | | CO2 Low Range: | |
| Duplicate: | <input type="checkbox"/> | ORP (mV): | -156.2 | H2S: | | | |
| | | Turb (NTU): | 5.1 | Manganese: | | | |
| | | Salinity: | | Sulfate: | | Alkalinity High Range: | |
| | | | | Sulfide: | | Alkalinity Low Range: | |
| | | | | Nitrate: | | | |
| <u>Lab Analyses/Methods:</u> | | <u>Technician Initials</u> | | | | | |
| "PAHs, VOCs" | | | | | | | |

GROUNDWATER PURGING & SAMPLING LOG



Project Information

| | | | |
|---------------------------------------|--|------------------------|--|
| Project No: 04-41001/5 | Project Name: Day Tank 1 - Cecil Field LTM/RAO | | |
| Technician 1: Larry Wolski | Technician 2: | Weather: Partly Cloudy | |
| Sampling ID: 04-41001/5:VEW-04:9/8/05 | | | |
| Notes: | | | |

Well Information

| | | | |
|----------------------------------|--------------------------------|----------------------------|--|
| Well ID: VEW-04 | Sampling Date: 9/8/2005 | | |
| Well Diam (in): 2.0 | Total Well Depth (ft): 15.10 | Well Screen Interval (ft): | |
| TOC Elevation (ft amsl): 75.54 | Northing: 0 | Easting: 0 | |
| Static Depth to Water (ft): 5.74 | Well Capacity (gal): 1.52 | | |

Purge Setup

| | | | |
|---------------------------|-------------------------|---------------------------------|-------------------------|
| Purge Method: Peristaltic | Tubing Material: PPE | | Pump Set at (ft): 11.00 |
| pH Meter: YSI 556 MPS | Cond. Meter: YSI 556MPS | DO Meter: YSI 556 MPS | Turb. Meter: Hach 2100P |
| Purge Start: 13:20 | Purge End: 13:59 | Total Volume Purged (gal): 2.00 | |

Purging Data

| Time | Water Level (ft) | Vol Purged (gal) | Pump Rate (gal/min) | DO (mg/L) | Temp (°C) | SEC (µS/cm) | pH | ORP (mV) | Turbidity (NTU) | Salinity | Color | Odor |
|-------|------------------|------------------|---------------------|-----------|-----------|-------------|------|----------|-----------------|----------|-------|------|
| 13:49 | 5.81 | 1.60 | 0.05 | 0.35 | 29.26 | 256.0 | 5.19 | 150.4 | 8.60 | | clear | none |
| 13:52 | 5.80 | 1.80 | 0.06 | 0.31 | 29.28 | 255.0 | 5.22 | 148.2 | 7.58 | | | |
| 13:56 | 5.80 | 1.90 | 0.02 | 0.30 | 29.29 | 254.0 | 5.27 | 150.4 | 7.07 | | | |

Sampling Data

| <u>Sample Information</u> | | <u>Final Purge Readings</u> | | <u>Hach Field Data (mg/L)</u> | | <u>CHEMetrics Field Data (mg/L)</u> | |
|------------------------------|--------------------------|-----------------------------|-------|-------------------------------|--|-------------------------------------|--|
| Sample Date: | 9/8/2005 | DO (mg/L): | 0.3 | DO: | | DO High Range: | |
| Sample Start Time: | 13:59 | Temp (°C): | 29.26 | CO2: | | DO High Range: | |
| Sample End Time: | 14:09 | SEC (uS/cm): | 254 | Alkalinity: | | CO2 High Range: | |
| Field Filtered: | <input type="checkbox"/> | pH: | 5.24 | Ferrous Iron: | | CO2 Low Range: | |
| Duplicate: | <input type="checkbox"/> | ORP (mV): | 150.8 | H2S: | | | |
| | | Turb (NTU): | 7.01 | Manganese: | | | |
| | | Salinity: | | Sulfate: | | Alkalinity High Range: | |
| | | | | Sulfide: | | Alkalinity Low Range: | |
| | | | | Nitrate: | | | |
| <u>Lab Analyses/Methods:</u> | | <u>Technician Initials</u> | | | | | |
| "PAHs, VOCs" | | | | | | | |

GROUNDWATER PURGING & SAMPLING LOG



Project Information

| | | | |
|---------------------------------------|--|------------------------|--|
| Project No: 04-41001/5 | Project Name: Day Tank 1 - Cecil Field LTM/RAO | | |
| Technician 1: Karen Baer | Technician 2: | Weather: Partly Cloudy | |
| Sampling ID: 04-41001/5:VEW-05:9/8/05 | | | |
| Notes: | | | |

Well Information

| | | | |
|----------------------------------|--------------------------------|----------------------------|--|
| Well ID: VEW-05 | Sampling Date: 9/8/2005 | | |
| Well Diam (in): 2.0 | Total Well Depth (ft): 16.85 | Well Screen Interval (ft): | |
| TOC Elevation (ft amsl): 74.63 | Northing: 0 | Easting: 0 | |
| Static Depth to Water (ft): 4.70 | Well Capacity (gal): 1.98 | | |

Purge Setup

| | | | |
|---------------------------|-------------------------|----------------------------|-------------------------|
| Purge Method: Peristaltic | Tubing Material: PPE | | Pump Set at (ft): 11.00 |
| pH Meter: YSI 556 MPS | Cond. Meter: YSI 556MPS | DO Meter: YSI 556 MPS | Turb. Meter: Hach 2100P |
| Purge Start: 13:36 | Purge End: 14:05 | Total Volume Purged (gal): | 2.00 |

Purging Data

| Time | Water Level (ft) | Vol Purged (gal) | Pump Rate (gal/min) | DO (mg/L) | Temp (°C) | SEC (µS/cm) | pH | ORP (mV) | Turbidity (NTU) | Salinity | Color | Odor |
|-------|------------------|------------------|---------------------|-----------|-----------|-------------|------|----------|-----------------|----------|-------|------|
| 13:57 | 4.70 | 1.50 | 0.07 | 1.58 | 28.51 | 208.0 | 5.78 | -135.5 | 13.60 | | clear | none |
| 14:01 | 4.70 | 1.70 | 0.05 | 1.17 | 28.49 | 205.0 | 5.74 | -165.4 | 12.00 | | | |
| 14:05 | 4.70 | 1.90 | 0.05 | 1.12 | 28.55 | 203.0 | 5.72 | -166.9 | 12.30 | | | |

Sampling Data

| <u>Sample Information</u> | | <u>Final Purge Readings</u> | | <u>Hach Field Data (mg/L)</u> | | <u>CHEMetrics Field Data (mg/L)</u> | |
|------------------------------|--------------------------|-----------------------------|--------|-------------------------------|--|-------------------------------------|--|
| Sample Date: | 9/8/2005 | DO (mg/L): | 1.11 | DO: | | DO High Range: | |
| Sample Start Time: | 14:05 | Temp (°C): | 28.55 | CO2: | | DO High Range: | |
| Sample End Time: | 14:13 | SEC (uS/cm): | 202 | Alkalinity: | | CO2 High Range: | |
| Field Filtered: | <input type="checkbox"/> | pH: | 5.7 | Ferrous Iron: | | CO2 Low Range: | |
| Duplicate: | <input type="checkbox"/> | ORP (mV): | -168.2 | H2S: | | | |
| | | Turb (NTU): | 11.1 | Manganese: | | | |
| | | Salinity: | | Sulfate: | | Alkalinity High Range: | |
| | | | | Sulfide: | | Alkalinity Low Range: | |
| | | | | Nitrate: | | | |
| <u>Lab Analyses/Methods:</u> | | <u>Technician Initials</u> | | | | | |
| "PAHs, VOCs" | | | | | | | |

GROUNDWATER PURGING & SAMPLING LOG



Project Information

| | | |
|---------------------------------------|--|---------------------------------|
| Project No: 04-41001/5 | Project Name: Day Tank 1 - Cecil Field LTM/RAO | |
| Technician 1: Karen Baer | Technician 2: | Weather: "Partly Cloudy, Sunny" |
| Sampling ID: 04-41001/5:VEW-07:9/8/05 | | |
| Notes: | | |

Well Information

| | | |
|----------------------------------|--------------------------------|----------------------------|
| Well ID: VEW-07 | Sampling Date: 9/8/2005 | |
| Well Diam (in): 2.0 | Total Well Depth (ft): 16.40 | Well Screen Interval (ft): |
| TOC Elevation (ft amsl): 76.44 | Northing: 0 | Easting: 0 |
| Static Depth to Water (ft): 6.25 | Well Capacity (gal): 1.65 | |

Purge Setup

| | | | |
|---------------------------|-------------------------|----------------------------|-------------------------|
| Purge Method: Peristaltic | Tubing Material: PPE | | Pump Set at (ft): 13.00 |
| pH Meter: YSI 556 MPS | Cond. Meter: YSI 556MPS | DO Meter: YSI 556 MPS | Turb. Meter: Hach 2100P |
| Purge Start: 15:39 | Purge End: 16:15 | Total Volume Purged (gal): | 1.60 |

Purging Data

| Time | Water Level (ft) | Vol Purged (gal) | Pump Rate (gal/min) | DO (mg/L) | Temp (°C) | SEC (µS/cm) | pH | ORP (mV) | Turbidity (NTU) | Salinity | Color | Odor |
|-------|------------------|------------------|---------------------|-----------|-----------|-------------|------|----------|-----------------|----------|--------|------|
| 15:51 | 6.30 | 0.50 | 0.04 | 2.31 | 26.16 | 302.0 | 5.15 | -192.1 | 83.40 | | turbid | none |
| 15:55 | 6.30 | 0.60 | 0.02 | 1.02 | 26.01 | 327.0 | 5.13 | -203.2 | 76.20 | | | |
| 15:59 | 6.30 | 0.80 | 0.05 | 0.79 | 25.88 | 373.0 | 5.14 | -204.1 | 65.90 | | | |
| 16:03 | 6.30 | 1.00 | 0.05 | 0.70 | 25.73 | 404.0 | 5.15 | -204.7 | 55.50 | | | |
| 16:06 | 6.30 | 1.20 | 0.06 | 0.66 | 25.63 | 413.0 | 5.15 | -203.4 | 46.90 | | | |
| 16:10 | 6.30 | 1.40 | 0.05 | 0.62 | 25.70 | 420.0 | 5.15 | -202.1 | 39.50 | | | |
| 16:14 | 6.30 | 1.60 | 0.05 | 0.60 | 25.69 | 420.0 | 5.16 | -201.7 | 35.90 | | | |

Sampling Data

| Sample Information | | Final Purge Readings | | Hach Field Data (mg/L) | | CHEMetrics Field Data (mg/L) | |
|------------------------------|--------------------------|----------------------------|--------|------------------------|--|------------------------------|--|
| Sample Date: | 9/8/2005 | DO (mg/L): | 0.59 | DO: | | DO High Range: | |
| Sample Start Time: | 16:15 | Temp (°C): | 25.7 | CO2: | | DO High Range: | |
| Sample End Time: | 16:30 | SEC (µS/cm): | 421 | Alkalinity: | | CO2 High Range: | |
| Field Filtered: | <input type="checkbox"/> | pH: | 5.16 | Ferrous Iron: | | CO2 Low Range: | |
| Duplicate: | <input type="checkbox"/> | ORP (mV): | -203.6 | H2S: | | | |
| | | Turb (NTU): | 34.4 | Manganese: | | | |
| | | Salinity: | | Sulfate: | | Alkalinity High Range: | |
| | | | | Sulfide: | | Alkalinity Low Range: | |
| | | | | Nitrate: | | | |
| <u>Lab Analyses/Methods:</u> | | <u>Technician Initials</u> | | | | | |
| "PAHs, VOCs" | | | | | | | |