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NAS CECIL FIELD, FL
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SECOND QUARTER 2006 OPERATIONS AND MAINTENANCE STATUS REPORT FOR DAY
TANK 1 SITE NAS CECIL FIELD FL
10/1/2006
TERRAINE INC ENVIRONMENTAL SERVICES

**SECOND QUARTER 2006
Operations and Maintenance
Status Report
April 1, 2006 to June 30, 2006**

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
Southeast**

Prepared by:

October 2006

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	PG-FL2090, REM-6089 Registration Nos.
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	10/04/06
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 Concentration
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
PAH	Polynuclear Aromatic Hydrocarbon
S.U.	Standard Unit
SVOA	Semi-Volatile Organic Aromatics
SVOC	Semi-Volatile Organic Compounds
TERRAINE	Terraine, 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 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 compounds (VOCs) and semi-volatile organic compounds (SVOCs) 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.

In November 2005, FDEP agreed with the recommendation to monitor additional sampling locations (CEF-293-2, CEF-293-13, VEW-6, and VEW-8) one time only to better determine site conditions. These additional wells were sampled in December 2005.

The purpose of this quarterly Groundwater Monitoring Report is to provide a summary of activities performed at the site during the period of April 1, 2006 to June 30, 2006.

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, may have been a result of once adsorbed contaminants being released into groundwater during the beginning of excavation activities. Currently, in general, contaminant concentrations in groundwater sampled indicate decreasing or stabilizing concentrations in comparison to previous sampling events.

At this time, reactivating the system is not necessary based on the following observations:

- Free product is not present in any of the sampled monitoring wells at the Day Tank 1 site.
- Contaminants of concern present in groundwater at concentrations greater than their applicable GCTLs do not appear to be migrating off-site.
- The current data indicate a general decrease in contaminant concentrations in comparison to data obtained during and immediately following excavation activities.
- The current data indicate contaminant concentrations exceeding the NADSC in groundwater sampled from only one (1) of the eight (8) wells sampled. These concentrations detected in groundwater sampled from VEW-7 (naphthalene, 159 µg/L; 1,2,4-trimethylbenzene, 119 µg/L) are only slightly greater than their respective NADSC values (naphthalene, 140 µg/L; 1,2,4-trimethylbenzene, 100 µg/L).

Therefore, Terraine recommends the following:

- Begin a natural attenuation monitoring program in September 2006 outlined as follows:
 - Sample groundwater from monitoring wells CEF-293-2, CEF-293-9, CEF-293-13, and CEF-293-22 and vapor extraction wells VEW-1, VEW-2, VEW-3, VEW-4, VEW-5, VEW-6, VEW-7, and VEW-8 on a quarterly basis for VOCs by EPA Method 8260B and SVOCs by EPA Method 8270C.
- Reevaluate the monitoring program in March 2007.

OPERATIONS AND MAINTENANCE STATUS REPORT

DAY TANK 1 SITE

NAVAL AIR STATION, CECIL FIELD

JACKSONVILLE, FLORIDA

JUNE 2006

<i>PREPARED FOR:</i>	Mr. Mark Davidson
<i>PREPARED BY:</i>	<i>TERRAINE, Inc.</i>
<i>PERIOD OF PERFORMANCE:</i>	April 1, 2006 to June 30, 2006
<i>FIELD TEAM:</i>	Channa Pickett and Robert Brookshire
<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>	October 2006

1.0 INTRODUCTION

Terraine, Inc. (TERRAINE) has been contracted by the Department of the Navy, Southeast 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 April 1, 2006 to June 30, 2006.

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 prepared and 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 Water Level Measurements

Depth-to-groundwater measurements were recorded on June 8, 2006 at the Day Tank 1 site. Using data collected, a groundwater elevation map indicated a general groundwater flow pattern to the 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 Second Quarter 2006.

2.2 Groundwater Sampling

2.2.2 Methodology

Groundwater sampling was conducted at Day Tank 1 on June 8, 2006. 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 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**.

2.2.2 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

2.3 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 Environmental First Response within 90 days of the June 8, 2006 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 wells VEW-2 and VEW-7 exhibited benzene concentrations greater than the GCTL (1.16 mg/L and 1.73, respectively).
- Groundwater sampled from vapor extraction well VEW-4 exhibited xylene concentrations greater than the GCTL (27.0 µg/L).
- Groundwater sampled from monitoring well CEF-293-9 (31.5 µg/L) and from vapor extraction wells VEW-1 (19.5 µg/L) and VEW-7 (159 µg/L) exhibited naphthalene concentrations greater than the GCTL by EPA Method 8260. The naphthalene concentration detected in groundwater sampled from VEW-7 was also slightly greater than the NADSC of 140 µg/L.
- Groundwater sampled from monitoring well CEF-293-9 (12.4 µg/L) and from vapor extraction wells VEW-1 (54.2 µg/L), VEW-2 (10.0 µg/L), and VEW-7 (119 µg/L) exhibited 1,2,4-trimethylbenzene concentrations greater than the GCTL. The 1,2,4-trimethylbenzene concentration detected in groundwater sampled from VEW-7 was also slightly greater than the NADSC of 100 µg/L. Groundwater sampled from vapor extraction well VEW-7 exhibited 1,3,5-trimethylbenzene concentrations greater than the GCTL (20.2 µg/L).

3.2.2 Polynuclear Aromatic Hydrocarbons (PAHs)

- Groundwater sampled from monitoring well CEF-293-9 (15.7 µg/L) and from vapor extraction wells VEW-4 (14.0 µg/L) and VEW-7 (121 µg/L) exhibited naphthalene concentrations greater than or equal to the GCTL by EPA Method 8270.
- Groundwater sampled from vapor extraction well VEW-7 exhibited 1-methylnaphthalene and 2-methylnaphthalene concentrations greater than the GCTL (43.7 µg/L and 47.2 µg/L, respectively).

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, may have been a result of once adsorbed contaminants being released into groundwater during the beginning of excavation activities. Currently, in general, contaminant concentrations in groundwater sampled indicate decreasing or stabilizing concentrations in comparison to previous sampling events.

At this time, reactivating the system is not necessary based on the following observations:

- Free product is not present in any of the sampled monitoring wells at the Day Tank 1 site.
- Contaminants of concern present in groundwater at concentrations greater than their applicable GCTLs do not appear to be migrating off-site.
- The current data indicate a general decrease in contaminant concentrations in comparison to data obtained during and immediately following excavation activities.
- The current data indicate contaminant concentrations exceeding the NADSC in groundwater sampled from only one (1) of the eight (8) wells sampled. These concentrations detected in groundwater sampled from VEW-7 (naphthalene, 159 µg/L; 1,2,4-trimethylbenzene, 119 µg/L) are only slightly greater than their respective NADSC values (naphthalene, 140 µg/L; 1,2,4-trimethylbenzene, 100 µg/L).

Therefore, Terraine recommends the following:

- Begin a natural attenuation monitoring program in September 2006 outlined as follows:
 - Sample groundwater from monitoring wells CEF-293-2, CEF-293-9, CEF-293-13, and CEF-293-22 and vapor extraction wells VEW-1, VEW-2, VEW-3, VEW-4, VEW-5, VEW-6, VEW-7, and VEW-8 on a quarterly basis for VOCs by EPA Method 8260B and SVOCs by EPA Method 8270C.
- Reevaluate the monitoring program in March 2007.

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.

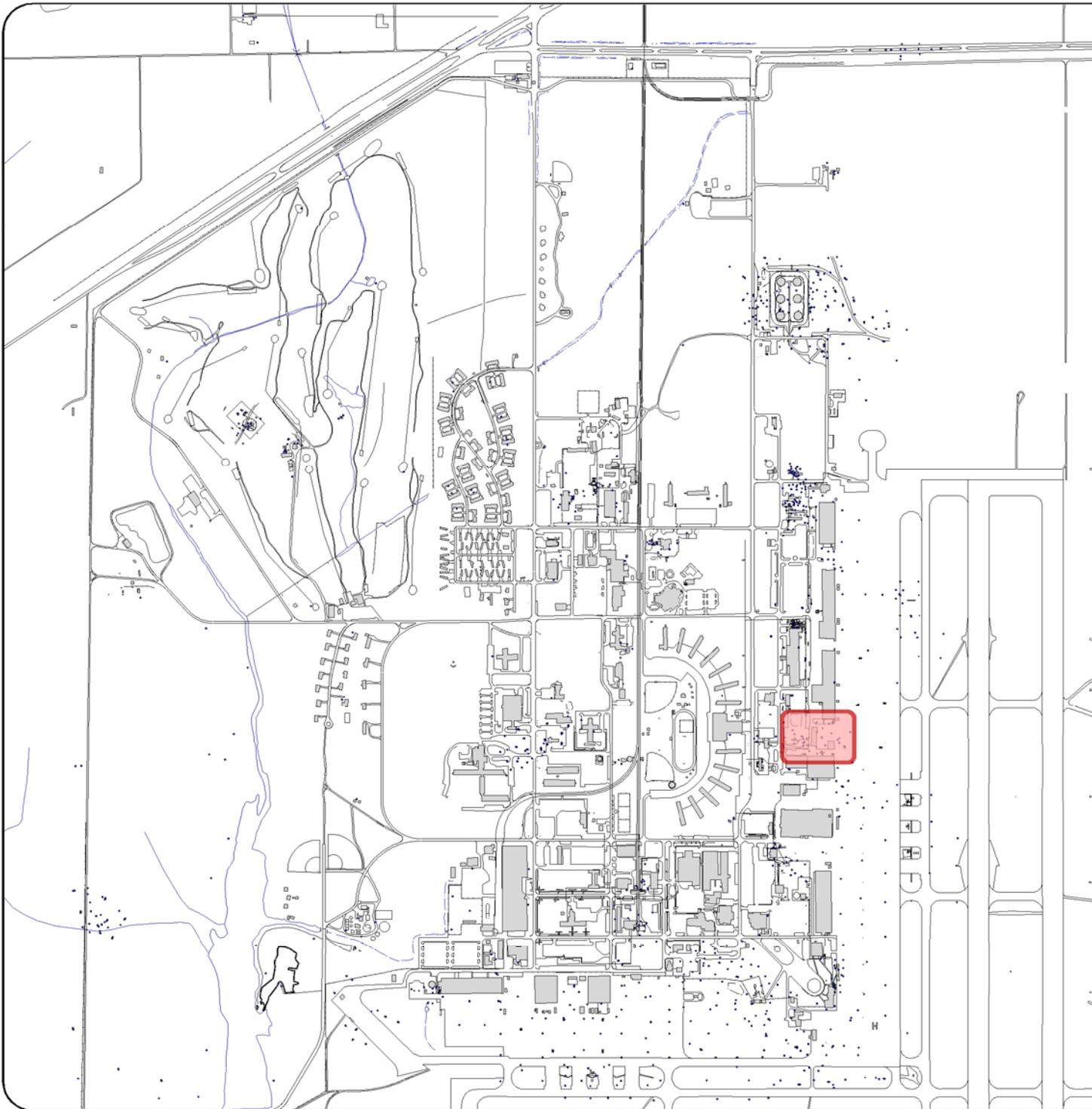
APPENDIX A

FIGURES

Figure 1 *Site Location Map, Day Tank 1*

Figure 2 *Site Map, Day Tank 1*

Figure 3 *Groundwater Elevation Map, June 2006*



NOTES

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

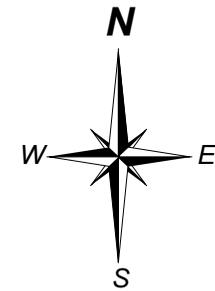
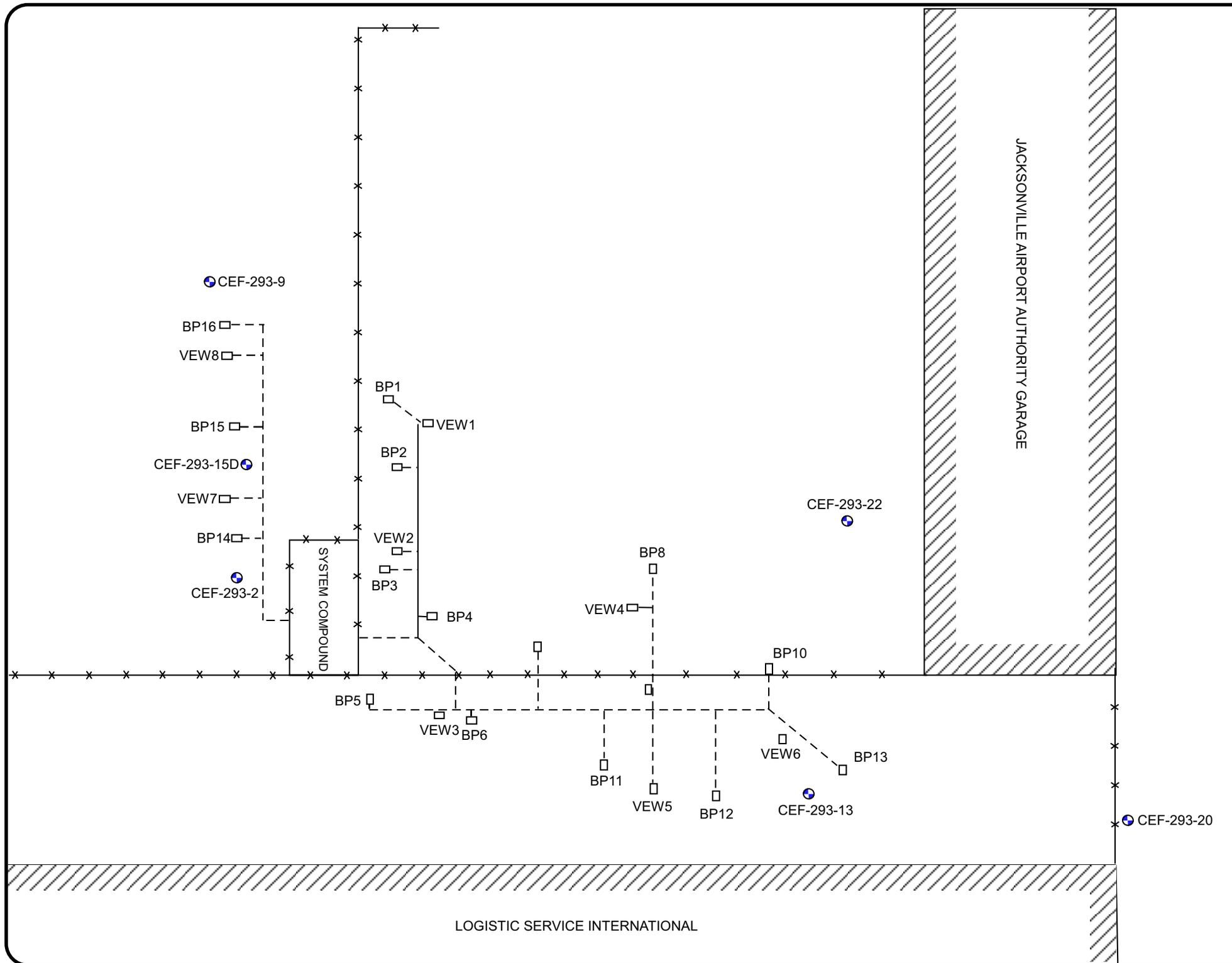
LEGEND



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

Prepared For:
U.S. Naval Facilities Engineering
Command, Southeast

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

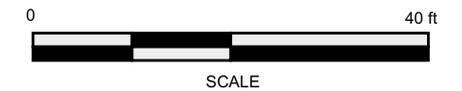


NOTES

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, Southeast

DWN BY: JLY

CHK BY:
MJP

SCALE: SEE LEGEND

APR BY: JLY

DATE: 8-03-05

FILE: 04-41001

Well ID	Groundwater Elevation
CEF-293-09	67.50
CEF-293-22	67.13
VEW-1	67.92
VEW-2	67.28
VEW-3	67.27
VEW-4	67.20
VEW-5	67.41
VEW-7	67.41

Groundwater elevation is in feet.



NOTES

DASHED LINES INDICATE SUBSURFACE FEATURES

LEGEND

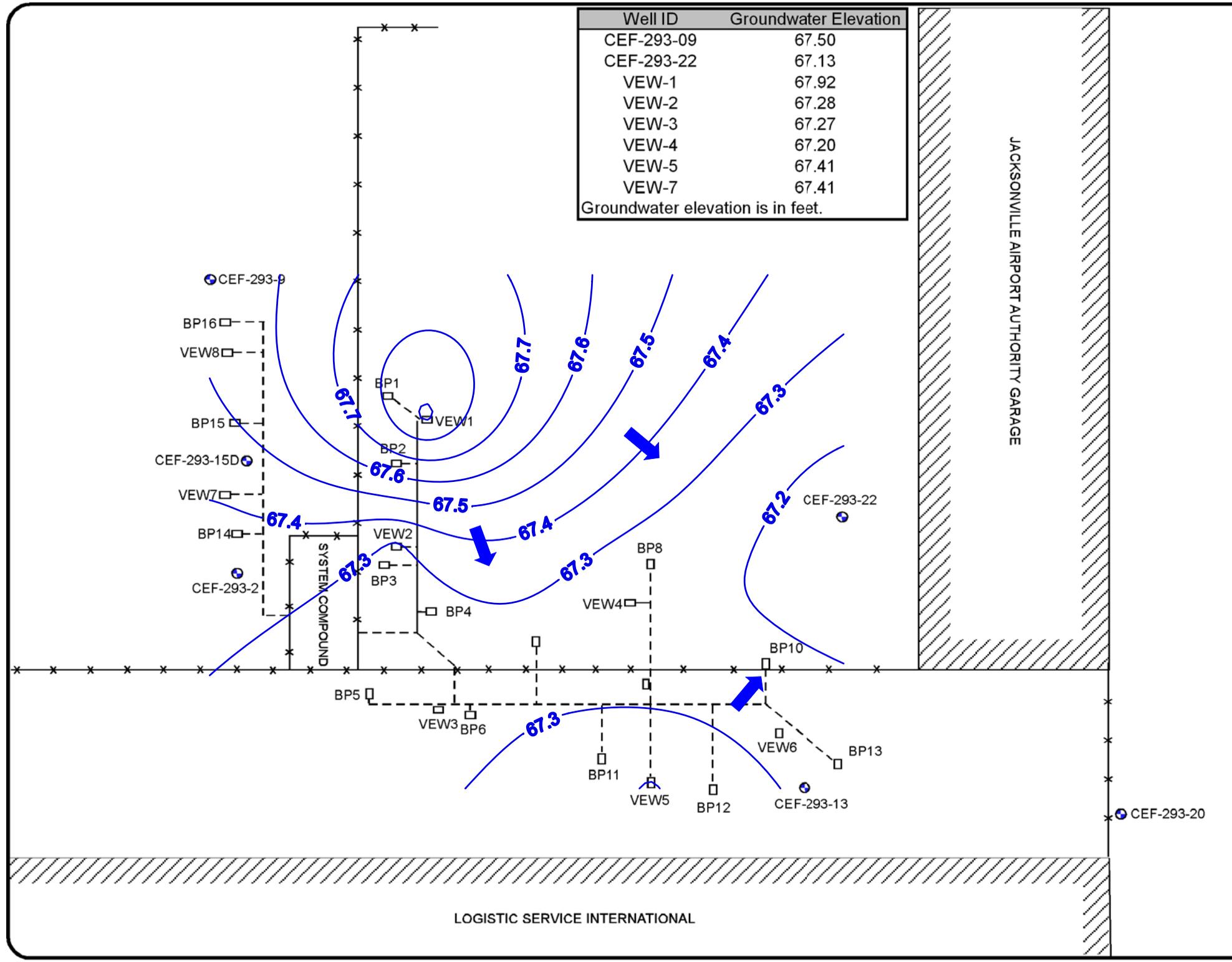
- x — x — FENCE
- - - - UNDERGROUND LINES
- VAULT COVER
- MONITORING WELL



**NAS CECIL FIELD
FIGURE 3: GROUNDWATER
ELEVATION MAP
JUNE 2006**

Prepared For:
U.S. Naval Facilities Engineering
Command, Southeast

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-293-02	12/08/05	NA	none present	8.60	0.00	NA
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
	12/08/05		none present	8.72	0.00	68.64
	03/28/06		none present	8.90	0.00	68.46
	06/08/06		none present	9.86	0.00	67.50
CEF-293-13	12/08/05	NA	none present	7.92	0.00	NA
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
	12/08/05		none present	7.79	0.00	68.16
	03/28/06		none present	7.98	0.00	67.97
	06/08/06		none present	8.82	0.00	67.13
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
	12/08/05		none present	7.32	0.00	69.00
	03/28/06		none present	7.58	0.00	68.74
	06/08/06		none present	8.40	0.00	67.92
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
	12/08/05		none present	7.32	0.00	68.54
	03/28/06		none present	7.66	0.00	68.20
	06/08/06		none present	8.58	0.00	67.28

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
	12/08/05		none present	6.90	0.00	68.38
	03/28/06		none present	7.15	0.00	68.13
	06/08/06		none present	8.01	0.00	67.27
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
	12/08/05		none present	7.32	0.00	68.22
	03/28/06		none present	7.50	0.00	68.04
	06/08/06		none present	8.34	0.00	67.20
	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
12/08/05		none present	6.20		0.00	68.43
03/28/06		none present	6.35		0.00	68.28
06/08/06		none present	7.22		0.00	67.41
VEW-06		12/08/05	NA		none present	6.20
VEW-07	06/13/00	76.44	none present	9.06	0.00	67.38
	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
	12/08/05		none present	7.91	0.00	68.53
	03/28/06		none present	8.00	0.00	68.44
	06/08/06		none present	9.03	0.00	67.41
	VEW-08		12/08/05	NA	none present	7.84

LNAPL = Light Non-Aqueous Phase Liquid

NA = Not available/Not applicable

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-293-2	12/8/2005	5.35	0.31	1.60	83.2	22.82
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
	12/8/2005	5.84	0.343	0.72	-34.50	22.72
	3/28/2006	4.76	0.285	0.27	3.50	22.23
	6/8/2006	4.52	0.262	0.45	25.90	26.00
CEF-293-13	12/8/2005	5.38	0.322	0.95	124.00	22.88
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
	12/8/2005	5.61	0.548	1.42	194.30	22.99
	3/28/2006	5.5	0.407	0.95	-77.10	22.36
	6/8/2006	4.26	0.252	0.65	132.70	26.54
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
	12/8/2005	5.56	0.214	0.54	-24.40	22.89
	3/28/2006	5.41	0.149	0.50	-76.40	22.75
	6/8/2006	4.45	0.129	0.36	-3.20	25.29
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
	12/8/2005	6.19	0.511	0.74	-125.60	22.10
	3/28/2006	6.10	0.392	0.62	-87.70	22.53
	6/8/2006	4.92	0.306	0.45	-122.70	23.94

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)
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	-156.20	23.50
	12/8/2005	5.47	0.369	1.10	164.60	23.83
	3/28/2006	4.56	0.221	0.50	65.10	23.85
	6/8/2006	4.79	0.247	0.62	-132.10	26.75
	VEW-4	1/25/2000	5.59	0.078	NM	NM
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
12/8/2005		4.93	0.232	1.00	237.90	23.27
3/28/2006		4.95	0.221	0.57	-94.30	23.40
6/8/2006		3.65	0.223	0.50	256.30	27.25
VEW-5		1/25/2000	6.28	0.113	NM	NM
	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
	12/8/2005	6.21	0.220	3.68	149.50	21.98
	3/28/2006	4.85	0.245	0.44	181.90	23.77
	6/8/2006	4.75	0.218	0.53	-81.70	26.69
	VEW-6	12/8/2005	5.67	0.484	0.94	151.60
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
	12/8/2005	5.33	0.448	1.45	84.30	22.43
	3/28/2006	4.91	0.268	0.25	-7.00	23.36
	6/8/2006	4.45	0.262	0.76	-106.50	24.98
	VEW-8	12/8/2005	5.68	0.273	0.89	-35.10

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	Benzofluoranthene	Fluoranthene	Benzofluoranthene	Benzofluoranthene	Benzofluoranthene	Indeno (1,2,3-c) Pyrene	Naphthalene by Method 8260	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-293-2	12/08/05	ND	1.83 I	ND	2.89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30.1	22.1	ND	ND	ND	ND	2.06	ND	2.90	2.02	ND	ND	8.72	2.83	ND				
CEF-293-8	01/25/00	45.1	128	128	128	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30.1	22.1	ND	ND	ND	ND	2.06	ND	2.90	2.02	ND	ND	8.72	2.83	ND				
	12/09/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	80.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.9	ND	ND	ND	ND	ND	5.8	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	09/02/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	47.5	98	18.4	ND	ND	ND	11.8	ND	12.5	3.3	1.9	ND	2.3	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	ND	7.9	ND	13.1	2.4	ND	ND	ND	ND	ND	ND			
	06/09/04	ND	6.96	ND	1.54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	83.8	81.6	24.6	22.4	ND	ND	12.2	ND	15.9	6.63	ND	ND	6.93	2.98	ND	ND			
	09/20/04	ND	1.25	ND	24.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.4	24.1	3.5	4.5	ND	ND	3.6	ND	4.48	1.04	ND	ND	3.76	ND	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	ND	12.51	ND	15.37	6.20	ND	ND	26.34	7.77	ND	ND			
	03/11/05	ND	6.060	ND	1.46 I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19.2	95.2	7.46	12.2	ND	ND	17.4	ND	22.0	8.20	ND	ND	30.7	6.50	5.96	ND	ND		
	06/08/05	ND	17.8	ND	27.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.8	29.2	12.1	ND	ND	ND	17.5	ND	16.9	5.24	ND	ND	36.4	13.93	4.11	ND	ND		
	09/08/05	ND	41.1	1.18 I	47.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50.4	75.4	26.9	43.3	ND	ND	18.9	ND	23.5	7.42	ND	ND	70.9	31.80	8.81	ND	ND		
	12/08/05	ND	4.89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.0	87.7	ND	9.24	ND	ND	10.5	ND	18.2	9.38	ND	ND	25.1	11.4	7.31	ND	ND		
	03/28/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12.4	24.1	ND	ND	ND	ND	3.6	ND	4.48	1.04	ND	ND	3.76	ND	ND	ND	ND		
	06/08/06	ND	4.55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15.7	31.5	6.35	14.3	ND	ND	6.3	ND	8.00	4.30	ND	ND	12.4	2.29	2.63	ND	ND		
CEF-293-13	12/08/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
CEF-293-22	01/25/00	24.2	19.4	0.98	47.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	142	ND	59.8	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	03/11/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	06/09/03	ND	ND	ND	ND	ND	ND	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.64	ND	4.97	3.76	0.21	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	09/02/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.34	0.96	0.12	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	1.07	0.88	0.23	ND	ND	ND	ND	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	ND	1.35	1.20	0.16	ND	ND	ND	ND	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	ND	ND	ND	0.780 I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	12/02/04	3.67	ND	ND	1.80 I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	03/11/05	3.59	1.56 I	ND	3.73	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	06/08/05	2.74	1.66 I	ND	5.66	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	12/08/05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	03/28/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	06/08/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	390	ND	22	307	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
	06/13/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03/11/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/04/03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/02/04	ND	18.17	0.9700 I	38.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.990	ND J3	ND J3	ND	ND	4.7	ND	4.280	2.20	ND	ND	32.06	5.13	4.080	ND	ND		
	03/11/05	ND	11.8	0.450 I	26.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.96	ND	ND	2.26	ND	ND	39	3.67	5.25	ND	ND		
	06/08/05	ND	28.4	1.29 I	83.1	ND																														

APPENDIX C

June 2006 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: Channa Pickett	Technician 2:	Weather: ", Hot, Sunny"	
Sampling ID: 04-41001/5:CEF-293-09:6/8/06			
Notes:			

Well Information

Well ID: CEF-293-09	Sampling Date: 6/8/2006		
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): 9.86	Well Capacity (gal): 0.67		

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 0.00
pH Meter: YSI 556 MPS	Cond. Meter: YSI 556MPS	DO Meter: YSI 556 MPS	Turb. Meter: Hach 2100P
Purge Start: 12:13:35	Purge End: 12:33:56	Total Volume Purged (gal):	0.56

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
12:25:34	9.95	0.30	0.025	0.63	26.15	266.0	4.43	80.5	11.60			
12:28:46	9.95	0.40	0.026	0.48	26.15	264.0	4.45	64.0	11.40		clear	none
12:31:50	9.95	0.50	0.032	0.46	26.14	264.0	4.48	41.0	12.20			

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:	6/8/2006	DO (mg/L):	0.45	DO:		DO High Range:	
Sample Start Time:	12:33:56	Temp (°C):	26.00	CO2:		DO High Range:	
Sample End Time:	12:58:59	SEC (uS/cm):	262	Alkalinity:		CO2 High Range:	
Field Filtered:	<input type="checkbox"/>	pH:	4.52	Ferrous Iron:		CO2 Low Range:	
Duplicate:	<input type="checkbox"/>	ORP (mV):	25.9	H2S:			
		Turb (NTU):	11.8	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: Channa Pickett	Technician 2:	Weather: ", Hot, Sunny"	
Sampling ID: 04-41001/5:CEF-293-22:6/8/06			
Notes:			

Well Information

Well ID: CEF-293-22	Sampling Date: 6/8/2006		
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): 8.82	Well Capacity (gal): 0.95		

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 12.50
pH Meter: YSI 556 MPS	Cond. Meter: YSI 556MPS	DO Meter: YSI 556 MPS	Turb. Meter: Hach 2100P
Purge Start: 15:20:06	Purge End: 15:40:47	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
15:34:22	8.96	0.30	0.021	0.69	26.75	242.0	3.81	159.2	10.20			
15:38:11	8.96	0.40	0.026	0.66	26.68	245.0	4.12	140.7	9.80			
15:41:14	8.98	0.50	0.032	0.63	26.62	248.0	4.23	133.5	8.87			

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:	6/8/2006	DO (mg/L):	0.65	DO:		DO High Range:	
Sample Start Time:	15:40:47	Temp (°C):	26.54	CO2:		DO High Range:	
Sample End Time:	16:08:13	SEC (uS/cm):	252	Alkalinity:		CO2 High Range:	
Field Filtered:	<input type="checkbox"/>	pH:	4.26	Ferrous Iron:		CO2 Low Range:	
Duplicate:	<input type="checkbox"/>	ORP (mV):	132.7	H2S:			
		Turb (NTU):	8.50	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: Channa Pickett	Technician 2:	Weather: ", Hot, Sunny"	
Sampling ID: 04-41001/5:VEW-01:6/8/06			
Notes:			

Well Information

Well ID: VEW-01	Sampling Date: 6/8/2006		
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): 8.40	Well Capacity (gal): 0.99		

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: 13:22:01	Purge End: 13:43:26	Total Volume Purged (gal): 0.58	

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
13:34:59	8.49	0.30	0.025	0.48	25.45	129.0	4.28	15.2	66.10		clear	sulfuric
13:38:05	8.50	0.40	0.032	0.42	25.39	129.0	4.39	4.7	69.60			
13:41:07	8.50	0.50	0.033	0.37	25.31	129.0	4.43	-0.4	69.50			

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:	6/8/2006	DO (mg/L):	0.36	DO:		DO High Range:	
Sample Start Time:	13:43:26	Temp (°C):	25.29	CO2:		DO High Range:	
Sample End Time:	14:03:45	SEC (uS/cm):	129	Alkalinity:		CO2 High Range:	
Field Filtered:	<input type="checkbox"/>	pH:	4.45	Ferrous Iron:		CO2 Low Range:	
Duplicate:	<input type="checkbox"/>	ORP (mV):	-3.2	H2S:			
		Turb (NTU):	71.0	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: Robert Brookshire	Technician 2:	Weather: ", Hot"	
Sampling ID: 04-41001/5:VEW-02:6/8/06			
Notes:			

Well Information

Well ID: VEW-02	Sampling Date: 6/8/2006		
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): 8.58	Well Capacity (gal): 1.21		

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: 13:25:11	Purge End: 13:50:50	Total Volume Purged (gal): 0.70	

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
13:38:57	8.60	0.30	0.021	0.75	24.12	317.0	5.30	-148.0	14.80		clear	
13:43:17	8.61	0.50	0.027	0.60	24.10	312.0	5.19	-143.1	14.90		clear	
13:46:56	8.61	0.60	0.027	0.47	24.03	308.0	5.02	-128.0	15.40		clear	

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:	6/8/2006	DO (mg/L):	0.45	DO:		DO High Range:	
Sample Start Time:	13:50:50	Temp (°C):	23.94	CO2:		DO High Range:	
Sample End Time:	14:05:12	SEC (uS/cm):	306	Alkalinity:		CO2 High Range:	
Field Filtered:	<input type="checkbox"/>	pH:	4.92	Ferrous Iron:		CO2 Low Range:	
Duplicate:	<input type="checkbox"/>	ORP (mV):	-122.7	H2S:			
		Turb (NTU):	13.3	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: Robert Brookshire	Technician 2:	Weather: ", Hot"	
Sampling ID: 04-41001/5:VEW-03:6/8/06			
Notes:			

Well Information

Well ID: VEW-03	Sampling Date: 6/8/2006		
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): 8.01	Well Capacity (gal): -1.30		

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 0.00
pH Meter: YSI 556 MPS	Cond. Meter: YSI 556MPS	DO Meter: YSI 556 MPS	Turb. Meter: Hach 2100P
Purge Start: 14:21:57	Purge End: 14:45:38	Total Volume Purged (gal): 0.70	

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
14:35:47	8.04	0.30	0.021	0.91	27.01	261.0	4.93	-132.9	1.29		clear	
14:40:02	8.04	0.50	0.027	0.74	26.89	256.0	4.86	-132.8	1.18		clear	
14:43:58	8.04	0.60	0.025	0.62	26.76	250.0	4.81	-132.7	1.41		clear	

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:	6/8/2006	DO (mg/L):	0.62	DO:		DO High Range:	
Sample Start Time:	14:45:38	Temp (°C):	26.75	CO2:		DO High Range:	
Sample End Time:	15:02:14	SEC (uS/cm):	247	Alkalinity:		CO2 High Range:	
Field Filtered:	<input type="checkbox"/>	pH:	4.79	Ferrous Iron:		CO2 Low Range:	
Duplicate:	<input type="checkbox"/>	ORP (mV):	-132.1	H2S:			
		Turb (NTU):	1.35	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: Channa Pickett	Technician 2:	Weather: ", Hot, Sunny"	
Sampling ID: 04-41001/5:VEW-04:6/8/06			
Notes:			

Well Information

Well ID: VEW-04	Sampling Date: 6/8/2006		
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): 8.34	Well Capacity (gal): 1.10		

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 12.50
pH Meter: YSI 556 MPS	Cond. Meter: YSI 556MPS	DO Meter: YSI 556 MPS	Turb. Meter: Hach 2100P
Purge Start: 14:16:52	Purge End: 14:40:26	Total Volume Purged (gal):	0.60

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
14:31:20	8.40	0.30	0.020	0.54	27.23	232.0	3.40	255.0	37.40			
14:34:35	8.37	0.40	0.030	0.52	27.30	230.0	3.51	257.6	27.90		clear	none
14:37:39	8.37	0.50	0.032	0.52	27.26	226.0	3.59	261.7	24.30			

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:	6/8/2006	DO (mg/L):	0.50	DO:		DO High Range:	
Sample Start Time:	14:40:26	Temp (°C):	27.25	CO2:		DO High Range:	
Sample End Time:	15:08:40	SEC (uS/cm):	223	Alkalinity:		CO2 High Range:	
Field Filtered:	<input type="checkbox"/>	pH:	3.65	Ferrous Iron:		CO2 Low Range:	
Duplicate:	<input type="checkbox"/>	ORP (mV):	256.3	H2S:			
		Turb (NTU):	19.9	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: Robert Brookshire	Technician 2:	Weather: ", Hot"	
Sampling ID: 04-41001/5:VEW-05:6/8/06			
Notes:			

Well Information

Well ID: VEW-05	Sampling Date: 6/8/2006		
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): 7.22	Well Capacity (gal): 1.57		

Purge Setup

Purge Method: Peristaltic	Tubing Material: PPE		Pump Set at (ft): 0.00
pH Meter: YSI 556 MPS	Cond. Meter: YSI 556MPS	DO Meter: YSI 556 MPS	Turb. Meter: Hach 2100P
Purge Start: 15:18:42	Purge End: 15:45:26	Total Volume Purged (gal): 0.70	

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
15:33:14	7.26	0.30	0.020	0.73	26.77	222.0	5.16	-95.7	2.27		clear	
15:36:43	7.27	0.50	0.027	0.63	26.73	220.0	4.99	-89.9	2.11		clear	
15:40:26	7.28	0.60	0.026	0.56	26.74	219.0	4.86	-87.5	1.64		clear	

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:	6/8/2006	DO (mg/L):	0.53	DO:		DO High Range:	
Sample Start Time:	15:45:26	Temp (°C):	26.69	CO2:		DO High Range:	
Sample End Time:	16:02:50	SEC (uS/cm):	218	Alkalinity:		CO2 High Range:	
Field Filtered:	<input type="checkbox"/>	pH:	4.75	Ferrous Iron:		CO2 Low Range:	
Duplicate:	<input type="checkbox"/>	ORP (mV):	-81.7	H2S:			
		Turb (NTU):	1.65	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: Robert Brookshire	Technician 2:	Weather: ", Beautiful Day, Hot"	
Sampling ID: 04-41001/5:VEW-07:6/8/06			
Notes:			

Well Information

Well ID: VEW-07	Sampling Date: 6/8/2006		
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): 9.03	Well Capacity (gal): 1.20		

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: 12:16:23	Purge End: 12:50:17	Total Volume Purged (gal): 0.80	

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
12:32:42	9.05	0.30	0.018	1.06	25.15	265.0	4.73	-122.6	5.14		clear	
12:38:02	9.06	0.50	0.023	0.90	24.78	266.0	4.62	-112.6	3.92		clear	
12:43:28	9.06	0.70	0.036	0.76	24.91	263.0	4.50	-109.7	2.81		clear	

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:	6/8/2006	DO (mg/L):	0.76	DO:		DO High Range:	
Sample Start Time:	12:50:17	Temp (°C):	24.98	CO2:		DO High Range:	
Sample End Time:	13:11:25	SEC (uS/cm):	262	Alkalinity:		CO2 High Range:	
Field Filtered:	<input type="checkbox"/>	pH:	4.45	Ferrous Iron:		CO2 Low Range:	
Duplicate:	<input type="checkbox"/>	ORP (mV):	-106.5	H2S:			
		Turb (NTU):	2.43	Manganese:			
		Salinity:		Sulfate:		Alkalinity High Range:	
				Sulfide:		Alkalinity Low Range:	
				Nitrate:			
<u>Lab Analyses/Methods:</u>		<u>Technician Initials</u>					
", PAHs, VOCs"							