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NAS CECIL FIELD, FL  
5090.3a

OPTION YEAR 2 FIRST QUARTER 2007 TO 2008 OPERATIONS AND MAINTENANCE  
STATUS REPORT FOR AIR SPARGING SYSTEM AT BUILDING 271 NAS CECIL FIELD FL  
7/31/2007  
ESA ENVIRONMENTAL SPECIALISTS INC

**Option Year 2, First Quarter 2007-2008  
Operations and Maintenance Status Report**

**Air Sparging System  
Building 271**

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

**Contract No. N62467-03-G-0016**

**Submitted to:**

U.S. Naval Facilities  
Engineering Command  
Southern Division

**Prepared by:**



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July 31, 2007

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## Acronyms

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ABB-ES	ABB Environmental Services, Inc.
AS	Air Sparging
AST	Aboveground Storage Tank
bls	Below Land Surface
BTEX	benzene, toluene, ethylbenzene, xylene
CA	Contamination Assessment
CAR	Contamination Assessment Report
cfm	cubic feet per minute
CTO	Contract Task Order
CSR	Confirmatory Sampling Report
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
ESA	ESA Environmental Specialists, Inc
FAC	Florida Administration Code
FDEP	Florida Department of Environmental Protection
FID	Flame ionization detector
FL-PRO	Florida Petroleum Residual Organic
GAC	granular activated carbon
GCTLs	groundwater cleanup target levels
HLA	Harding Lawson Associates
JETC	Jet Engine Test Cell
LNAPL	Light Non-Aqueous Phase Liquids
LCAR	Limited Closure Assessment Reports
mg/ L	milligrams per liter
MTBE	methyl tert butyl ether
NADSC	Natural Attenuation Default Source Concentration
NAS	Naval Air Station
NAVFAC EDF	Naval Facilities Engineering Command, Engineering Field
SOUTH	Division, Southern Division
O&M	Operation and Maintenance
ORP	oxygen-reduction potential
OWSs	oil water separators

PAH	polynuclear aromatic hydrocarbon
ppm	parts per million
psi	pounds per square inch
RAP	Remedial Action Plan
RAPA	Remedial Action Plan Addendum
SA	Site Assessment
SARA	Site Assessment Report Addendum
SCTLs	Soil Cleanup Target Levels
TRPH	total recoverable petroleum hydrocarbon
TtNUS	Tetra Tech NUS
USACE	U.S. Army Corps of Engineers
UST	Underground Storage Tank
VOC	Volatile Organic Compound

# **1 Introduction**

---

ESA Environmental Specialists, Inc. (ESA) has been contracted by the Department of the Navy, Naval Facilities Engineering Command Engineering Field Division South (NAVFAC EFD SOUTH), to provide active treatment operation and maintenance (O&M) services at two groundwater remediation sites (Jet Engine Test Cell and Building 271), plus annual natural attenuation monitoring services at one groundwater remediation site (Area 199), situated at the former Naval Air Station (NAS) Cecil Field, Jacksonville, Duval County, Florida.

The purpose of this Option Year 2, First Quarter 2007-2008 Operations and Maintenance Status Report is to provide a summary of activities performed at the Building 271 site during the period from May 1, 2007 through July 31, 2007.

## **1.1 Site History**

### **Building 271**

Building 271 was a former retail gasoline facility that contained four Underground Storage Tanks (USTs) (designated 271-D, 271-R, 271-UL, and 271-SUL) and two oil water separators (OWSs). The USTs were grouped in a tank pit located on the west side of Building 271, while the OWSs were located on the east side of the building. USTs 271-UL, 271-R, and 271-SUL each had an approximate capacity of 10,000 gallons and UST 271-D had an approximate capacity of 6,000 gallons (TtNUS, 2002).

According to UST closure records, UST 271-D was removed on March 5, 1996, and no soil or groundwater contamination was detected. The report also indicates that the UST and associated piping were removed from the site (TtNUS, 2002).

In July 1999, Harding Lawson Associates (HLA) compiled a Confirmatory Sampling Report (CSR) for the USTs and the two OWSs that indicated petroleum-impacted soil was encountered at two locations relative to the USTs. The CSR concluded that soil or groundwater was not impacted as a result of past OWS operations. Based on the CSR finding of soil contamination, a Site Assessment (SA) was recommended for the UST site. An SA Plan for the assessment of soil and groundwater at the UST site was prepared by TtNUS (TtNUS, 2002).

Following completion of the planned investigation in the SA Plan, CH2M Hill removed the remaining three USTs, associated piping, and distribution systems. The UST and associated soil removals addressed the soil contamination issues; however, groundwater samples collected following UST and soil removal indicated the presence of volatile organic compounds (VOCs) in site groundwater. TtNUS proceeded to plan and execute a second investigation in a SA Plan Addendum (2001) to further define the extent of contamination in the groundwater (TtNUS, 2002).

CH2M Hill also removed both OWSs, and submitted separate Limited Closure Assessment Reports (LCAR) for each OWS site in April 2001 to the FDEP. Both LCARs for the OWSs indicated that no petroleum contamination of the soil or groundwater existed in the immediate areas surrounding the former OWSs. On May 23, 2001, the FDEP issued separate letters agreeing with CH2M Hill's findings (TtNUS, 2002).

A SA report prepared by TtNUS in May 2002 concluded that petroleum constituents had impacted groundwater in the vicinity of the former USTs and that all of the contaminated soil was removed by CH2M Hill during the UST removal. TtNUS recommended the preparation and implementation of a Remedial Action Plan (RAP) to remediate groundwater at the site (TtNUS, 2002).

TtNUS submitted to FDEP for approval a RAP in September 2002 and a RAP Addendum (RAPA) in January 2003 to select the remedial alternative to remediate the contaminated groundwater at the site. Air Sparge (AS) was selected as the remedial alternative. FDEP Approval on the RAP and RAPA was received in February 2003.

CH2M Hill installed an AS system in accordance with the RAP (TtNUS, 2002), RAPA (TtNUS, 2003), and Work Plan Addendum No. 18, Installation of Air Sparging Systems at the Jet Engine Test Cell (JETC) and Building 271 (CH2M Hill, 2003) from September to November 2003. The AS system commenced operation on November 17, 2003.

On May 24, 2005, management of on-going remedial activities at the Building 271 site was transferred from CH2M Hill to ESA.

A site plan showing the site and the AS system layout is provided in Figure 1-1.

## **1.2 Remediation System/Technology Description**

AS is a physical treatment method of expediting the transfer of VOCs from the soil and groundwater to the sparging air. Atmospheric air is injected into the air sparge wells, which are screened within the groundwater contaminant plume. As the injected air passes upward through the VOC laden groundwater and soil, VOCs are partitioned to the passing air and migrate to the vadose zone.

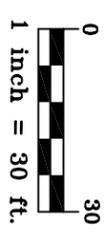
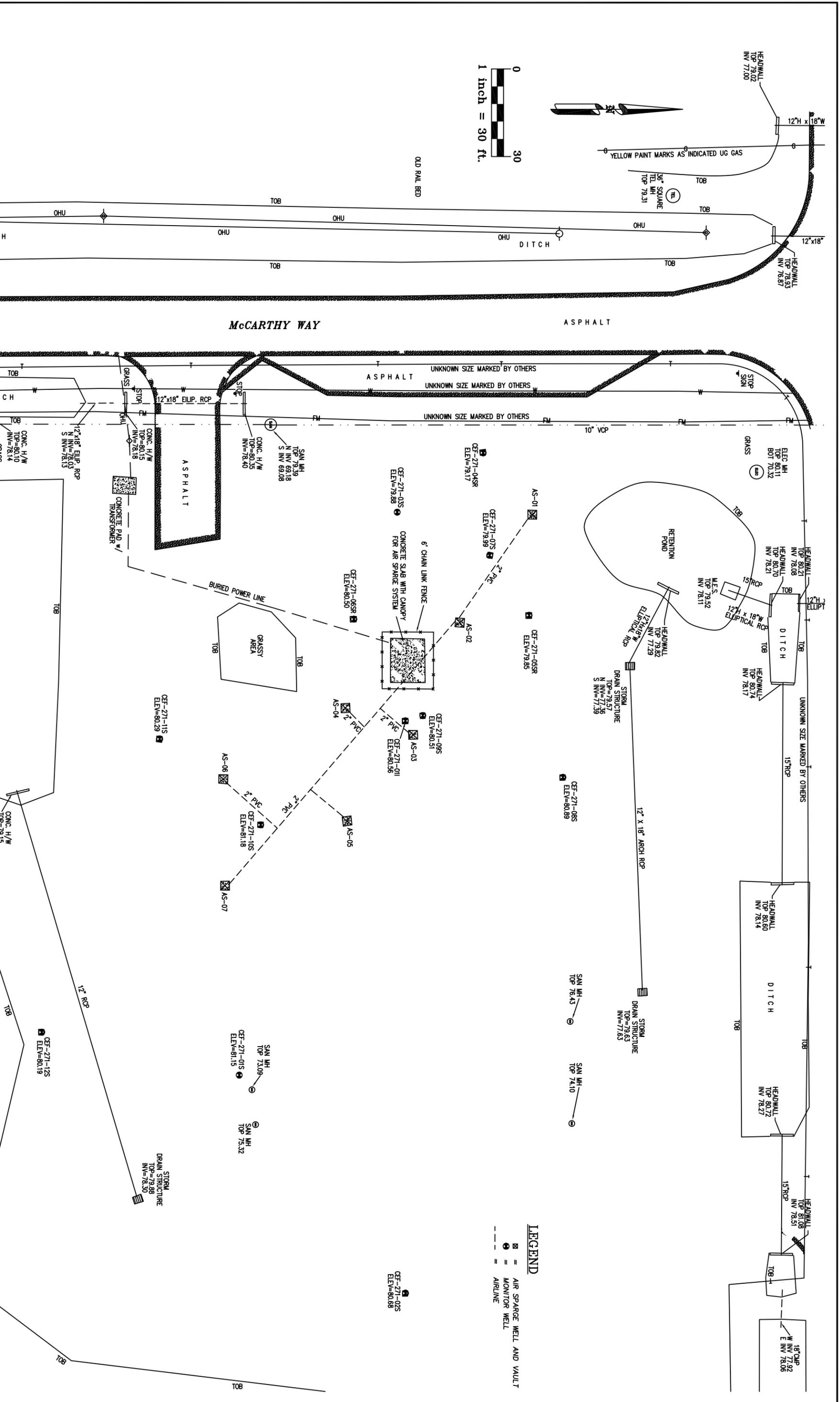
The Building 271 AS system consists of seven (7) AS wells (AS-01 through AS-07), a rotary vane-type compressor, a receiver tank, and associated piping and instrumentation. The AS wells are screened from approximately 28 to 30 feet below land surface (bls). The AS system is designed for each AS well to operate at an airflow rate of 10 cubic feet per minute (cfm) at an injection pressure of 15 pounds per square inch (psi). The locations of the AS wells are shown on Figure 1-1.

DRAWN:	REVISIONS
RC	BY
CHECKED:	DATE
AS	
DATE:	
FEB 2006	



**BUILDING 271**  
**FORMER NAS CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**SITE MAP**  
 APRIL 18, 2007  
 FIGURE 1-1



**LEGEND**

	= AIR SPARGE WELL AND VAULT
	= MONITOR WELL
	= AIRLINE

## 2 System Performance Monitoring

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### 2.1 Water Level Measurements

Depth to groundwater measurements are recorded quarterly from 4 monitoring wells. The results from the groundwater level measurement surveys are provided in Table 2-1. Light non-aqueous phase liquid (LNAPL) was not detected on monitoring wells during the monitoring period.

**Table 2-1, Water Level Measurements  
Building 271, Option Year 2, First Quarter 2007-2008**

<b>Monitoring Well</b>	<b>Date</b>	<b>TOC Elevation (feet)</b>	<b>Depth to Water (feet bTOC)</b>	<b>Water Level Elevation (feet NGVD)</b>
CEF-271-12S	7/23/2007	80.19	9.32	70.87
CEF-271-10S	7/23/2007	81.18	10.9	70.28
CEF-271-09S	7/23/2007	80.51	9.44	71.07
CEF-271-07S	7/23/2007	79.99	8.85	71.14

Top of Casing Elevations and data prior to 4/27/00 obtained from BEI

TOC – top of casing

bTOC – Below top of casing

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

Depth to water measured from top of casing

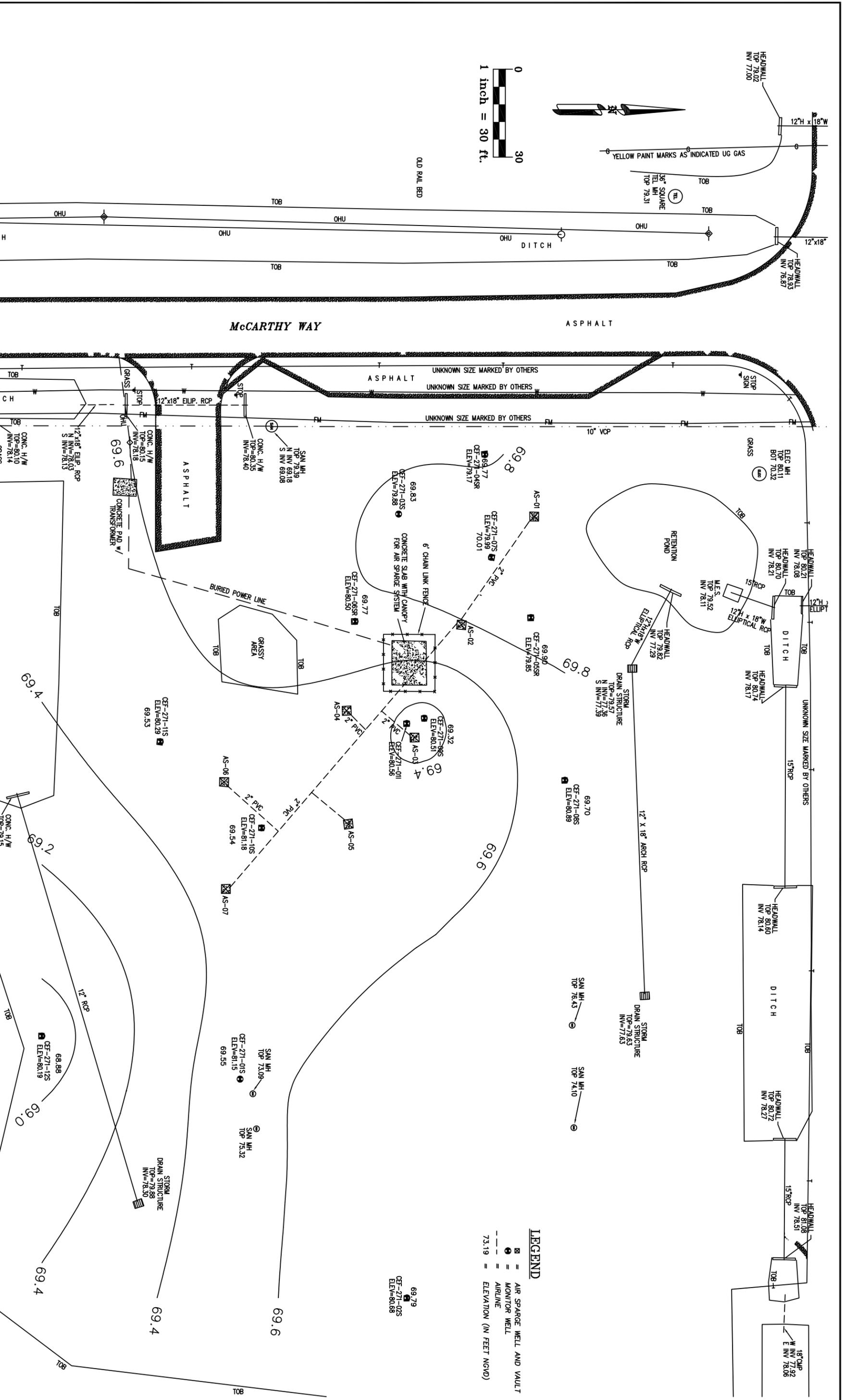
DRAWN:	REVISIONS
RC	BY
CHECKED:	DATE
AS	
DATE:	
FEB 2006	



**BUILDING 271**  
**FORMER NAS CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**POTENIOMETRIC**  
**SURFACE MAP**  
**APRIL 18, 2007**

**FIGURE**  
**2-1**



**LEGEND**

	= AIR SPARGE WELL AND VAULT
	= MONITOR WELL
	= AIRLINE
73.19	= ELEVATION (IN FEET NGVD)

## **3 Summary of Sampling and Laboratory Analytical Results**

---

### **3.1 Groundwater Monitoring**

ESA conducted Option Year 2, First Quarter 2007-2008 groundwater monitoring events beginning in May 1, 2007. During the Option Year 2, First Quarter 2007 monitoring event monitoring wells CEF-271 were sampled. The groundwater samples were laboratory analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tert butyl ether (MTBE) by EPA Method SW8021B, the 16-listed polynuclear aromatic hydrocarbons (PAHs) and 1- and 2-methylnaphthalene by AEL SOP SVOC-006: 2-25-03 and SW8270C-SIM, and Total Recoverable Petroleum Hydrocarbons (TRPH) were analyzed by the Florida Petroleum Organic (FL-PRO) Method. The laboratory analytical results for the detected parameters from the First Contract Quarter 2007-2008 groundwater monitoring events are summarized in Table 3-1. The locations of the monitoring wells are shown on Figure 1-1. Copies of the analytical laboratory reports from the groundwater monitoring events are provided in Appendix A.

Field parameters consisting of pH, temperature, dissolved oxygen (DO), and specific conductivity were measured during purging of the monitoring wells. The field parameters are summarized in Table 3-2. The aquifer at the site within the treatment area remains slightly aerobic with increased DO measurements above 1 milligram per liter (mg/ L) in 2 of the monitoring wells sampled.

During the previous 4<sup>th</sup> Quarter Report 2006-2007, CEF-271-07S reported exceeded GCTLs for Total Xylenes and Naphthalene. During the current first quarter sampling for Option Year 2 of the contract, Total Xylenes have dropped to below GCTLs detections, but Naphthalene continues to exceed GCTLs. Additional concerns for CEF-271-07S previously reported a rise above GCTLs for 1- Methylnaphthalene and 2- Methylnaphthalene, however, currently only 1- Methylnaphthalene continues to exceed GCTLs, while 2-Methylnaphthalene has dropped below detection levels. New exceeded values for GCTLs for CEF-271-07S during this quarter are Benzo(a)anthracene, Benzo(b)fluoranthene, and Indeno(1,2,3-cd)pyrene, and Dibenz(a,h)anthracene reported exceeding both GCTLs and NADSCs. Please note that all of the new exceeded levels reported during the first quarter reporting for Option Year 2, were specified under the laboratory conditions that the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

CEF-271-07S remains to be the main monitoring well of concern.

It should be noted that the following table do show some bolding and shading where limits were exceeded, however, these are all followed by a U which defines that the compound was analyzed for but not detected. The duplicates and equipment blanks report the same undetected limits with a number higher than the GCTLs and NADSC allow.

**Table 3-1 Groundwater Analytical Results, Option Year 2, First Quarter 2007-2008**

Parameter	Station ID		CEF-271-07S	CEF-271-09S	CEF-271-10S	CEF-271-12S	Equipment Blank
	Sample ID		J0757313001	J0757313002	J0757313003	J0757313004	J0757313005
	Sample Date		7/23/2007	7/23/2007	7/23/2007	7/23/2007	7/23/2007
	GCTL <sup>1</sup>	NADC <sup>1</sup>					
micrograms per liter (µg/L)							
<b>Volatile Aromatic Hydrocarbons</b>							
Benzene	1	10	0.63 U	0.21 U	0.21 U	0.21 U	0.21 U
Ethylbenzene	30	300	2.9	0.17 U	0.17 U	0.17 U	0.17 U
Methyl-tert-butyl Ether	20	200	1.0 U	0.35 U	0.35 U	0.35 U	0.35 U
Xylenes (total)	20	200	16.8	0.63 U	0.63 U	0.63 U	0.63 U
Toluene	1	10	0.69 U	0.23 U	0.23 U	0.23 U	0.23 U
<b>Polynuclear Aromatic Hydrocarbons</b>							
1-methylnaphthalene	28	280	<b>43</b>	0.12 U	0.12 U	0.12 U	0.12 U
2-methylnaphthalene	28	280	18	0.18 U	0.18 U	0.18 U	0.18 U
Acenaphthene	20	200	3.3	0.13 U	0.13 U	0.13 U	0.13 U
Acenaphthylene	210	2100	0.13 U				
Anthracene	2100	21000	0.69	0.080 U	0.080 U	0.080 U	0.080 U
Benzo(a)anthracene	0.05	0.5	<b>0.087 I</b>	0.029 U	0.029 U	0.029 U	0.029 U
Benzo(a)pyrene	0.2	2	0.061 I	0.023 U	0.023 U	0.023 U	0.023 U
Benzo(b)fluoranthene	0.05	0.5	<b>0.056 I</b>	0.025 U	0.025 U	0.025 U	0.025 U
Benzo(g,h,i)perylene	210	2100	0.13 I	0.092 U	0.092 U	0.092 U	0.092 U
Benzo(k)fluoranthene	0.5	5	0.082 U				
Chrysene	4.8	48	0.10 I	0.060 U	0.060 U	0.060 U	0.060 U
Dibenz(a,h)anthracene	0.005	0.05	<b>0.16 I</b>	<b>0.047 U</b>	<b>0.047 U</b>	<b>0.047 U</b>	<b>0.047 U</b>
Fluoranthene	280	2800	1.1	0.084 U	0.084 U	0.084 U	0.084 U
Fluorene	280	2800	2.1	0.10 U	0.10 U	0.10 U	0.10 U
Indeno(1,2,3-cd)pyrene	0.05	0.5	<b>0.18 I</b>	0.039 U	0.039 U	0.039 U	0.039 U
Naphthalene	14	140	<b>77</b>	0.15 U	0.15 U	0.15 U	0.15 U
Phenanthrene	210	2100	4.4	0.10 U	0.10 U	0.10 U	0.10 U
Pyrene	210	2100	0.92	0.12 U	0.12 U	0.12 U	0.12 U

Notes:

GCTL - Groundwater Cleanup Target Level, 1 = Chapter 62-777 FAC GCTLs reported in µg/L, Bold indicates concentration exceeds GCTL

NADC - Natural Attenuation Default Concentration, Shade indicates concentration exceeds NADC

U - the compound was analyzed for but not detected

I - the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

**Table 3-2  
Field Parameter Measurements  
Building 271 GW Field Monitoring  
Option Year 2, First Quarter 2007-2008**

Sample Date 7/23/2007	Groundwater				
Well	pH	Conductivity ( $\mu$ S)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature ( $^{\circ}$ C)
CEF-271-12S	5.94	202	427	0.30	23.1
CEF-271-10S	6.25	269	20	<b>1.27</b>	25.8
CEF-271-09S	6.64	239	600	<b>1.59</b>	26.0
CEF-271-07S	6.51	911	2.7	0.33	25.7

Note: All measurements taken using direct reading instruments in the field.

$\mu$ S – micro Siemens

NTU – nephelomatic turbidity units

mg/L – milligrams per liter

$^{\circ}$ C – degrees Celsius

ORP – oxygen reducing potential

Bold indicates DO values exceeding 1 mg/L

NM – Not Measured

## 4.0 Conclusions and Recommendations

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Although the JETC system has operated fairly reliably during the term of this contract, the Building 271 compressor continues to be problematic and in spite of installing automatic resets for periodic power failures and seeking assistance/second opinions from the manufacturer and multiple compressor service vendors, the exact source of the recurrent system shutdowns has not yet been fully identified.

During the previous 4<sup>th</sup> Quarter Report 2006-2007, CEF-271-07S reported exceeded GCTLs for Total Xylenes and Naphthalene. During the current first quarter sampling for Option Year 2 of the contract, Total Xylenes have dropped to below GCTLs detections, but Naphthalene continues to exceed GCTLs. Additional concerns for CEF-271-07S previously reported a rise above GCTLs for 1- Methyl-naphthalene and 2- Methyl-naphthalene, however, currently only 1- Methyl-naphthalene continues to exceed GCTLs, while 2-Methyl-naphthalene has dropped below detection levels. New exceeded values for GCTLs for CEF-271-07S during this quarter are Benzo(a)anthracene, Benzo(b)fluoranthene, and Indeno(1,2,3-cd)pyrene, and Dibenz(a,h)anthracene reported exceeding both GCTLs and NADSCs. Please note that all of the new exceeded levels reported during the first quarter reporting for Option Year 2, were specified under the laboratory conditions that the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Field parameters consisting of pH, temperature, dissolved oxygen (DO), and specific conductivity were measured during purging of the monitoring wells. The field parameters are summarized in Table 3-2. The aquifer at the site within the treatment area remains slightly aerobic with increased DO measurements above 1 milligram per liter (mg/L) in 2 of the monitoring wells sampled.

Consistent with previous conditions, based on these results, and due to previous recommendations, we have kept AS wells 03-07 turned off and focus sparging in the remaining impact area.

For the most part, as compared to the previous quarterly reports, the groundwater analytical concentrations have remained undetected or decreased. This indicates that the air sparge system is reducing the groundwater contamination at this site.

Special attention should be taken to CEF-271-07S as it appears that levels are varying above and below detection limits for Naphthalene and Total Xylenes. As previously recommended it may be more proactive and effective to utilize a temporary pipe with a flex hose attached to the top of the sparge and utilize a small oil-less / gas rotary blower that bypasses the mattei compressors, filters and dryers to focus on this specific area of concern.

## **5.0 References**

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ESA Environmental Specialists, Inc. June 2005. Cecil Field Workplan. NAS Cecil Field, Jacksonville, Florida.

ESA Environmental Specialists, Inc. June 2005. Cecil Field Health and Safety Plan. NAS Cecil Field, Jacksonville, FL.

CH2MHILL Constructors, Inc. April 2001. Limited Closure Assessment Report, Oil/Water Separator Removal. NAS Cecil Field, Jacksonville, Florida.

CH2MHILL Constructors, Inc. August 2003. Work Plan Addendum No. 18, Work Plan Addendum No. 18 Installation of Air Sparging Systems at the Jet Engine Test Cell and Building 271, Naval Air Station Cecil Field, Jacksonville, Florida.

TetraTech NUS, Inc. September 2002. Remedial Action Plan for Building 271 Tanks UL/R/SUL/D at Naval Air Station Cecil Field, Jacksonville, Florida.

TetraTech NUS, Inc. January 2003. Remedial Action Plan Addendum for Building 271 Tanks UL/R/SUL/D at Naval Air Station Cecil Field, Jacksonville, Florida.

**APPENDIX A**  
**Analytical Results**



Advanced  
Environmental Laboratories, Inc.

Advanced Environmental Laboratories, Inc  
6601 Southpoint Parkway  
Jacksonville, FL 32216  
Phone: (904)363-9350  
Fax: (904)363-9354

July 27, 2007

Tara Vogeliën  
ESA Environmental Specialists, Inc.  
1332 Baxter St  
Charlotte, NC 28204

RE: Workorder: J0757313 CECIL QRTLY

Dear Tara Vogeliën:

Enclosed are the analytical results for sample(s) received by the laboratory on Monday, July 23, 2007. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. The analytical results for the samples contained in this report were submitted for analysis as outlined by the Chain of Custody and results pertain only to these samples.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Gunsaulies  
pgunsaulies@aellab.com

Enclosures

Report ID: 11246 - 249706

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### **CERTIFICATE OF ANALYSIS**

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### SAMPLE SUMMARY

Workorder: J0757313 CECIL QRTLY

Lab ID	Sample ID	Matrix	Date Collected	Date Received
J0757313001	CEF-271-075	Water	7/23/2007 12:21	7/23/2007 14:30
J0757313002	CEF-271-095	Water	7/23/2007 13:04	7/23/2007 14:30
J0757313003	CEF-271-105	Water	7/23/2007 13:34	7/23/2007 14:30
J0757313004	CEF-271-125	Water	7/23/2007 14:04	7/23/2007 14:30
J0757313005	EQ BLANK	Water	7/23/2007 12:00	7/23/2007 14:30

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**ANALYTICAL RESULTS**

Workorder: J0757313 CECIL QRTLTY

Lab ID: **J0757313001** Date Received: 7/23/2007 14:30 Matrix: Water  
Sample ID: **CEF-271-075** Date Collected: 7/23/2007 12:21  
Sample Description Location

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	By	Lab
<b>SEMIVOLATILES</b>									
Analysis Desc: 8270C-SIM Analysis, Water		Preparation Method: SW-846 3510C							
		Analytical Method: SW-846 8270C (SIM)							
2-Methylnaphthalene	18	ug/L		1	0.50	0.18	7/25/2007 12:59	TH	J
Acenaphthene	3.3	ug/L		1	0.50	0.13	7/25/2007 12:59	TH	J
Acenaphthylene	0.13	ug/L	U	1	0.50	0.13	7/25/2007 12:59	TH	J
Anthracene	0.69	ug/L		1	0.50	0.080	7/25/2007 12:59	TH	J
Benzo[a]anthracene	0.087	ug/L	I	1	0.20	0.029	7/25/2007 12:59	TH	J
Benzo[a]pyrene	0.061	ug/L	I	1	0.20	0.023	7/25/2007 12:59	TH	J
Benzo[b]fluoranthene	0.056	ug/L	I	1	0.20	0.025	7/25/2007 12:59	TH	J
Benzo[g,h,i]perylene	0.13	ug/L	I	1	0.50	0.092	7/25/2007 12:59	TH	J
Benzo[k]fluoranthene	0.082	ug/L	U	1	0.50	0.082	7/25/2007 12:59	TH	J
Chrysene	0.10	ug/L	I	1	0.20	0.060	7/25/2007 12:59	TH	J
Dibenz[a,h]anthracene	0.16	ug/L	I	1	0.20	0.047	7/25/2007 12:59	TH	J
Fluoranthene	1.1	ug/L		1	0.50	0.084	7/25/2007 12:59	TH	J
Fluorene	2.1	ug/L		1	0.50	0.10	7/25/2007 12:59	TH	J
Indeno(1,2,3-cd)pyrene	0.18	ug/L	I	1	0.20	0.039	7/25/2007 12:59	TH	J
Naphthalene	77	ug/L		1	0.50	0.15	7/25/2007 12:59	TH	J
Phenanthrene	4.4	ug/L		1	0.50	0.10	7/25/2007 12:59	TH	J
Pyrene	0.92	ug/L		1	0.50	0.12	7/25/2007 12:59	TH	J
Decafluorobiphenyl (S)	82	%		1	21-122		7/25/2007 12:59	TH	
Analysis Desc: 8270C-SIM Analysis, Water		Preparation Method: SW-846 3510C							
		Analytical Method: AEL SVOC-006 Rev #4/GC-MS							
1-Methylnaphthalene	43	ug/L		1	0.50	0.12	7/25/2007 12:59	TH	J
<b>VOLATILES</b>									
Analysis Desc: 8021B Analysis, Water		Preparation Method: SW-846 5030B							
		Analytical Method: SW-846 8021B							
Benzene	0.63	ug/L	U	3	2.5	0.63	7/26/2007 10:49	RB	J
Ethylbenzene	2.9	ug/L		3	2.0	0.51	7/26/2007 10:49	RB	J
Methyl tert-butyl Ether (MTBE)	1.0	ug/L	U	3	4.2	1.0	7/26/2007 10:49	RB	J
Toluene	0.69	ug/L	U	3	2.8	0.69	7/26/2007 10:49	RB	J
Xylene-mp	6.8	ug/L		3	4.8	1.2	7/26/2007 10:49	RB	J
Xylene-o	10	ug/L		3	2.8	0.69	7/26/2007 10:49	RB	J
1-Bromo-4-chlorobenzene (S)	90	%		3	75-119		7/26/2007 10:49	RB	

**CERTIFICATE OF ANALYSIS**

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**ANALYTICAL RESULTS**

Workorder: J0757313 CECIL QRTL

Lab ID: **J0757313002** Date Received: 7/23/2007 14:30 Matrix: Water  
Sample ID: **CEF-271-095** Date Collected: 7/23/2007 13:04  
Sample Description Location

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	By	Lab
<b>SEMIVOLATILES</b>									
Analysis Desc: 8270C-SIM Analysis, Water		Preparation Method: SW-846 3510C							
		Analytical Method: SW-846 8270C (SIM)							
2-Methylnaphthalene	0.18	ug/L	U	1	0.50	0.18	7/25/2007 13:25	TH	J
Acenaphthene	0.13	ug/L	U	1	0.50	0.13	7/25/2007 13:25	TH	J
Acenaphthylene	0.13	ug/L	U	1	0.50	0.13	7/25/2007 13:25	TH	J
Anthracene	0.080	ug/L	U	1	0.50	0.080	7/25/2007 13:25	TH	J
Benzo[a]anthracene	0.029	ug/L	U	1	0.20	0.029	7/25/2007 13:25	TH	J
Benzo[a]pyrene	0.023	ug/L	U	1	0.20	0.023	7/25/2007 13:25	TH	J
Benzo[b]fluoranthene	0.025	ug/L	U	1	0.20	0.025	7/25/2007 13:25	TH	J
Benzo[g,h,i]perylene	0.092	ug/L	U	1	0.50	0.092	7/25/2007 13:25	TH	J
Benzo[k]fluoranthene	0.082	ug/L	U	1	0.50	0.082	7/25/2007 13:25	TH	J
Chrysene	0.060	ug/L	U	1	0.20	0.060	7/25/2007 13:25	TH	J
Dibenz[a,h]anthracene	0.047	ug/L	U	1	0.20	0.047	7/25/2007 13:25	TH	J
Fluoranthene	0.084	ug/L	U	1	0.50	0.084	7/25/2007 13:25	TH	J
Fluorene	0.10	ug/L	U	1	0.50	0.10	7/25/2007 13:25	TH	J
Indeno(1,2,3-cd)pyrene	0.039	ug/L	U	1	0.20	0.039	7/25/2007 13:25	TH	J
Naphthalene	0.15	ug/L	U	1	0.50	0.15	7/25/2007 13:25	TH	J
Phenanthrene	0.10	ug/L	U	1	0.50	0.10	7/25/2007 13:25	TH	J
Pyrene	0.12	ug/L	U	1	0.50	0.12	7/25/2007 13:25	TH	J
Decafluorobiphenyl (S)	84	%		1	21-122		7/25/2007 13:25	TH	
Analysis Desc: 8270C-SIM Analysis, Water		Preparation Method: SW-846 3510C							
		Analytical Method: AEL SVOC-006 Rev #4/GC-MS							
1-Methylnaphthalene	0.12	ug/L	U	1	0.50	0.12	7/25/2007 13:25	TH	J
<b>VOLATILES</b>									
Analysis Desc: 8021B Analysis, Water		Preparation Method: SW-846 5030B							
		Analytical Method: SW-846 8021B							
Benzene	0.21	ug/L	U	1	0.84	0.21	7/26/2007 05:35	RB	J
Ethylbenzene	0.17	ug/L	U	1	0.68	0.17	7/26/2007 05:35	RB	J
Methyl tert-butyl Ether (MTBE)	0.35	ug/L	U	1	1.4	0.35	7/26/2007 05:35	RB	J
Toluene	0.23	ug/L	U	1	0.92	0.23	7/26/2007 05:35	RB	J
Xylene-mp	0.40	ug/L	U	1	1.6	0.40	7/26/2007 05:35	RB	J
Xylene-o	0.23	ug/L	U	1	0.92	0.23	7/26/2007 05:35	RB	J
1-Bromo-4-chlorobenzene (S)	102	%		1	75-119		7/26/2007 05:35	RB	

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**ANALYTICAL RESULTS**

Workorder: J0757313 CECIL QRTLTY

Lab ID: **J0757313003** Date Received: 7/23/2007 14:30 Matrix: Water  
Sample ID: **CEF-271-105** Date Collected: 7/23/2007 13:34  
Sample Description Location

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	By	Lab
<b>SEMIVOLATILES</b>									
Analysis Desc: 8270C-SIM Analysis, Water		Preparation Method: SW-846 3510C							
		Analytical Method: SW-846 8270C (SIM)							
2-Methylnaphthalene	0.18	ug/L	U	1	0.50	0.18	7/25/2007 13:52	TH	J
Acenaphthene	0.13	ug/L	U	1	0.50	0.13	7/25/2007 13:52	TH	J
Acenaphthylene	0.13	ug/L	U	1	0.50	0.13	7/25/2007 13:52	TH	J
Anthracene	0.080	ug/L	U	1	0.50	0.080	7/25/2007 13:52	TH	J
Benzo[a]anthracene	0.029	ug/L	U	1	0.20	0.029	7/25/2007 13:52	TH	J
Benzo[a]pyrene	0.023	ug/L	U	1	0.20	0.023	7/25/2007 13:52	TH	J
Benzo[b]fluoranthene	0.025	ug/L	U	1	0.20	0.025	7/25/2007 13:52	TH	J
Benzo[g,h,i]perylene	0.092	ug/L	U	1	0.50	0.092	7/25/2007 13:52	TH	J
Benzo[k]fluoranthene	0.082	ug/L	U	1	0.50	0.082	7/25/2007 13:52	TH	J
Chrysene	0.060	ug/L	U	1	0.20	0.060	7/25/2007 13:52	TH	J
Dibenz[a,h]anthracene	0.047	ug/L	U	1	0.20	0.047	7/25/2007 13:52	TH	J
Fluoranthene	0.084	ug/L	U	1	0.50	0.084	7/25/2007 13:52	TH	J
Fluorene	0.10	ug/L	U	1	0.50	0.10	7/25/2007 13:52	TH	J
Indeno(1,2,3-cd)pyrene	0.039	ug/L	U	1	0.20	0.039	7/25/2007 13:52	TH	J
Naphthalene	0.15	ug/L	U	1	0.50	0.15	7/25/2007 13:52	TH	J
Phenanthrene	0.10	ug/L	U	1	0.50	0.10	7/25/2007 13:52	TH	J
Pyrene	0.12	ug/L	U	1	0.50	0.12	7/25/2007 13:52	TH	J
Decafluorobiphenyl (S)	83	%		1	21-122		7/25/2007 13:52	TH	
Analysis Desc: 8270C-SIM Analysis, Water		Preparation Method: SW-846 3510C							
		Analytical Method: AEL SVOC-006 Rev #4/GC-MS							
1-Methylnaphthalene	0.12	ug/L	U	1	0.50	0.12	7/25/2007 13:52	TH	J
<b>VOLATILES</b>									
Analysis Desc: 8021B Analysis, Water		Preparation Method: SW-846 5030B							
		Analytical Method: SW-846 8021B							
Benzene	0.21	ug/L	U	1	0.84	0.21	7/26/2007 06:19	RB	J
Ethylbenzene	0.17	ug/L	U	1	0.68	0.17	7/26/2007 06:19	RB	J
Methyl tert-butyl Ether (MTBE)	0.35	ug/L	U	1	1.4	0.35	7/26/2007 06:19	RB	J
Toluene	0.23	ug/L	U	1	0.92	0.23	7/26/2007 06:19	RB	J
Xylene-mp	0.40	ug/L	U	1	1.6	0.40	7/26/2007 06:19	RB	J
Xylene-o	0.23	ug/L	U	1	0.92	0.23	7/26/2007 06:19	RB	J
1-Bromo-4-chlorobenzene (S)	103	%		1	75-119		7/26/2007 06:19	RB	

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**ANALYTICAL RESULTS**

Workorder: J0757313 CECIL QRTLTY

Lab ID: **J0757313004** Date Received: 7/23/2007 14:30 Matrix: Water  
Sample ID: **CEF-271-125** Date Collected: 7/23/2007 14:04  
Sample Description Location

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	By	Lab
<b>SEMIVOLATILES</b>									
Analysis Desc: 8270C-SIM Analysis, Water		Preparation Method: SW-846 3510C							
		Analytical Method: SW-846 8270C (SIM)							
2-Methylnaphthalene	0.18	ug/L	U	1	0.50	0.18	7/25/2007 14:19	TH	J
Acenaphthene	0.13	ug/L	U	1	0.50	0.13	7/25/2007 14:19	TH	J
Acenaphthylene	0.13	ug/L	U	1	0.50	0.13	7/25/2007 14:19	TH	J
Anthracene	0.080	ug/L	U	1	0.50	0.080	7/25/2007 14:19	TH	J
Benzo[a]anthracene	0.029	ug/L	U	1	0.20	0.029	7/25/2007 14:19	TH	J
Benzo[a]pyrene	0.023	ug/L	U	1	0.20	0.023	7/25/2007 14:19	TH	J
Benzo[b]fluoranthene	0.025	ug/L	U	1	0.20	0.025	7/25/2007 14:19	TH	J
Benzo[g,h,i]perylene	0.092	ug/L	U	1	0.50	0.092	7/25/2007 14:19	TH	J
Benzo[k]fluoranthene	0.082	ug/L	U	1	0.50	0.082	7/25/2007 14:19	TH	J
Chrysene	0.060	ug/L	U	1	0.20	0.060	7/25/2007 14:19	TH	J
Dibenz[a,h]anthracene	0.047	ug/L	U	1	0.20	0.047	7/25/2007 14:19	TH	J
Fluoranthene	0.084	ug/L	U	1	0.50	0.084	7/25/2007 14:19	TH	J
Fluorene	0.10	ug/L	U	1	0.50	0.10	7/25/2007 14:19	TH	J
Indeno(1,2,3-cd)pyrene	0.039	ug/L	U	1	0.20	0.039	7/25/2007 14:19	TH	J
Naphthalene	0.15	ug/L	U	1	0.50	0.15	7/25/2007 14:19	TH	J
Phenanthrene	0.10	ug/L	U	1	0.50	0.10	7/25/2007 14:19	TH	J
Pyrene	0.12	ug/L	U	1	0.50	0.12	7/25/2007 14:19	TH	J
Decafluorobiphenyl (S)	64	%		1	21-122		7/25/2007 14:19	TH	
Analysis Desc: 8270C-SIM Analysis, Water		Preparation Method: SW-846 3510C							
		Analytical Method: AEL SVOC-006 Rev #4/GC-MS							
1-Methylnaphthalene	0.12	ug/L	U	1	0.50	0.12	7/25/2007 14:19	TH	J
<b>VOLATILES</b>									
Analysis Desc: 8021B Analysis, Water		Preparation Method: SW-846 5030B							
		Analytical Method: SW-846 8021B							
Benzene	0.21	ug/L	U	1	0.84	0.21	7/26/2007 07:03	RB	J
Ethylbenzene	0.17	ug/L	U	1	0.68	0.17	7/26/2007 07:03	RB	J
Methyl tert-butyl Ether (MTBE)	0.35	ug/L	U	1	1.4	0.35	7/26/2007 07:03	RB	J
Toluene	0.23	ug/L	U	1	0.92	0.23	7/26/2007 07:03	RB	J
Xylene-mp	0.40	ug/L	U	1	1.6	0.40	7/26/2007 07:03	RB	J
Xylene-o	0.23	ug/L	U	1	0.92	0.23	7/26/2007 07:03	RB	J
1-Bromo-4-chlorobenzene (S)	92	%		1	75-119		7/26/2007 07:03	RB	

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**ANALYTICAL RESULTS**

Workorder: J0757313 CECIL QRTLTY

Lab ID: **J0757313005** Date Received: 7/23/2007 14:30 Matrix: Water  
Sample ID: **EQ BLANK** Date Collected: 7/23/2007 12:00  
Sample Description Location

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	By	Lab
<b>SEMIVOLATILES</b>									
Analysis Desc: 8270C-SIM Analysis, Water		Preparation Method: SW-846 3510C							
		Analytical Method: SW-846 8270C (SIM)							
2-Methylnaphthalene	0.18	ug/L	U	1	0.50	0.18	7/25/2007 14:46	TH	J
Acenaphthene	0.13	ug/L	U	1	0.50	0.13	7/25/2007 14:46	TH	J
Acenaphthylene	0.13	ug/L	U	1	0.50	0.13	7/25/2007 14:46	TH	J
Anthracene	0.080	ug/L	U	1	0.50	0.080	7/25/2007 14:46	TH	J
Benzo[a]anthracene	0.029	ug/L	U	1	0.20	0.029	7/25/2007 14:46	TH	J
Benzo[a]pyrene	0.023	ug/L	U	1	0.20	0.023	7/25/2007 14:46	TH	J
Benzo[b]fluoranthene	0.025	ug/L	U	1	0.20	0.025	7/25/2007 14:46	TH	J
Benzo[g,h,i]perylene	0.092	ug/L	U	1	0.50	0.092	7/25/2007 14:46	TH	J
Benzo[k]fluoranthene	0.082	ug/L	U	1	0.50	0.082	7/25/2007 14:46	TH	J
Chrysene	0.060	ug/L	U	1	0.20	0.060	7/25/2007 14:46	TH	J
Dibenz[a,h]anthracene	0.047	ug/L	U	1	0.20	0.047	7/25/2007 14:46	TH	J
Fluoranthene	0.084	ug/L	U	1	0.50	0.084	7/25/2007 14:46	TH	J
Fluorene	0.10	ug/L	U	1	0.50	0.10	7/25/2007 14:46	TH	J
Indeno(1,2,3-cd)pyrene	0.039	ug/L	U	1	0.20	0.039	7/25/2007 14:46	TH	J
Naphthalene	0.15	ug/L	U	1	0.50	0.15	7/25/2007 14:46	TH	J
Phenanthrene	0.10	ug/L	U	1	0.50	0.10	7/25/2007 14:46	TH	J
Pyrene	0.12	ug/L	U	1	0.50	0.12	7/25/2007 14:46	TH	J
Decafluorobiphenyl (S)	72	%		1	21-122		7/25/2007 14:46	TH	
Analysis Desc: 8270C-SIM Analysis, Water		Preparation Method: SW-846 3510C							
		Analytical Method: AEL SVOC-006 Rev #4/GC-MS							
1-Methylnaphthalene	0.12	ug/L	U	1	0.50	0.12	7/25/2007 14:46	TH	J
<b>VOLATILES</b>									
Analysis Desc: 8021B Analysis, Water		Preparation Method: SW-846 5030B							
		Analytical Method: SW-846 8021B							
Benzene	0.21	ug/L	U	1	0.84	0.21	7/26/2007 07:47	RB	J
Ethylbenzene	0.17	ug/L	U	1	0.68	0.17	7/26/2007 07:47	RB	J
Methyl tert-butyl Ether (MTBE)	0.35	ug/L	U	1	1.4	0.35	7/26/2007 07:47	RB	J
Toluene	0.23	ug/L	U	1	0.92	0.23	7/26/2007 07:47	RB	J
Xylene-mp	0.40	ug/L	U	1	1.6	0.40	7/26/2007 07:47	RB	J
Xylene-o	0.23	ug/L	U	1	0.92	0.23	7/26/2007 07:47	RB	J
1-Bromo-4-chlorobenzene (S)	101	%		1	75-119		7/26/2007 07:47	RB	

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## ANALYTICAL RESULTS QUALIFIERS

Workorder: J0757313 CECIL QRTLY

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### PARAMETER QUALIFIERS

- U The compound was analyzed for but not detected.
- I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

### LAB QUALIFIERS

- J DOH Certification #E82574(AEL-JAX)(FL NELAC Certification)

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**QUALITY CONTROL DATA**

Workorder: J0757313 CECIL QRTLY

QC Batch:	EXTj/1443	Analysis Method:	SW-846 8270C (SIM)			
QC Batch Method:	SW-846 3510C	Prepared:	7/25/2007 05:45	By:	XT	
Associated Lab Samples:	J0757313001	J0757313002	J0757313003	J0757313004	J0757313005	J0757356004
	J0757356005	J0757356006	J0757356007	J0757356008	J0757356009	

METHOD BLANK: 47735

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Naphthalene	ug/L	0.15U	0.15	
2-Methylnaphthalene	ug/L	0.18U	0.18	
1-Methylnaphthalene	ug/L	0.12U	0.12	
Acenaphthylene	ug/L	0.13U	0.13	
Acenaphthene	ug/L	0.13U	0.13	
Fluorene	ug/L	0.10U	0.10	
Phenanthrene	ug/L	0.10U	0.10	
Anthracene	ug/L	0.080U	0.080	
Fluoranthene	ug/L	0.084U	0.084	
Pyrene	ug/L	0.12U	0.12	
Benzo[a]anthracene	ug/L	0.029U	0.029	
Chrysene	ug/L	0.060U	0.060	
Benzo[b]fluoranthene	ug/L	0.025U	0.025	
Benzo[k]fluoranthene	ug/L	0.082U	0.082	
Benzo[a]pyrene	ug/L	0.023U	0.023	
Indeno(1,2,3-cd)pyrene	ug/L	0.039U	0.039	
Dibenz[a,h]anthracene	ug/L	0.047U	0.047	
Benzo[g,h,i]perylene	ug/L	0.092U	0.092	
Decafluorobiphenyl (S)	%	89	21-122	

QC Batch:	GCVj/1106	Analysis Method:	SW-846 8021B			
QC Batch Method:	SW-846 5030B	Prepared:	7/25/2007 13:45	By:	RB	
Associated Lab Samples:	J0757313001	J0757313002	J0757313003	J0757313004	J0757313005	J0757356004
	J0757356005	J0757356006	J0757356007	J0757356008	J0757356009	J0757416001

METHOD BLANK: 48528

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Methyl tert-butyl Ether (MTBE)	ug/L	0.35U	0.35	
Benzene	ug/L	0.21U	0.21	
Toluene	ug/L	0.23U	0.23	
Ethylbenzene	ug/L	0.17U	0.17	
Xylene-mp	ug/L	0.40U	0.40	
Xylene-o	ug/L	0.23U	0.23	
1-Bromo-4-chlorobenzene (S)	%	109	75-119	

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Workorder: J0757313 CECIL QRTLY

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
J0757313001	CEF-271-075	SW-846 3510C	EXTj/1443	SW-846 8270C (SIM)	MSSj/1212
J0757313002	CEF-271-095	SW-846 3510C	EXTj/1443	SW-846 8270C (SIM)	MSSj/1212
J0757313003	CEF-271-105	SW-846 3510C	EXTj/1443	SW-846 8270C (SIM)	MSSj/1212
J0757313004	CEF-271-125	SW-846 3510C	EXTj/1443	SW-846 8270C (SIM)	MSSj/1212
J0757313005	EQ BLANK	SW-846 3510C	EXTj/1443	SW-846 8270C (SIM)	MSSj/1212
J0757313001	CEF-271-075	SW-846 5030B	GCVj/1106	SW-846 8021B	GCVj/1107
J0757313002	CEF-271-095	SW-846 5030B	GCVj/1106	SW-846 8021B	GCVj/1107
J0757313003	CEF-271-105	SW-846 5030B	GCVj/1106	SW-846 8021B	GCVj/1107
J0757313004	CEF-271-125	SW-846 5030B	GCVj/1106	SW-846 8021B	GCVj/1107
J0757313005	EQ BLANK	SW-846 5030B	GCVj/1106	SW-846 8021B	GCVj/1107

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**APPENDIX B**  
**Field Notes**





Adri jd  
Environmental Laboratories, Inc.

### Field Log Sheet

Sample Identification: CEF-271-095

Date: 7-23-05

**Project Information:**

Client Name: ESA Environmental Specialists Inc

Site Name: Cecil Field Gun Samplings (3rd AH)

Site Address: Bldg 271

Site Address:

**Matrix**

L+Liquid  
S=Solids  
SO=Soil  
SD=Sediment  
SW=Surface Water  
GW=Ground Water  
WW=Wastewater  
DW=Drinking Water  
CP=Composite  
CPT=Composite Timed  
CPF=Composite Flow  
GCF=Grab

**Field Conditions**

Wind Speed: 1.2  
Wind Direction: S  
Cloud Cover (%): 25  
Precipitation:  
Other:

### SAMPLING DATA

Sampling Equipment Used: peristaltic

### PURGING DATA

Purge Method:

Note: All measurements "Top of Casing"

Well Capacity (gal/foot) 0.75"=0.02; 1"=0.04; 1.25"=0.06; 2"=0.16; 3"=0.37; 4"=0.65; 5"=1.02; 6" Equip. Decconned in Field Y N Cleaning Level:

Total Well Depth (Feet): 12.02 Depth to Water: 9.44 Well Capacity (Gal/Ft.): 3.16

Well Diameter ( 2 ) X .16 = .5

Time	Temp °C	Conductivity:	pH	D.O.	Turbidity	Color	Odor	Gallons Purged	Draw Down	Purge Rate (GPM)
1249	26.0	275	6.63	3.12	200	yes	ns	purged dry: Y or N	11.25	
1252	25.8	24	6.63	2.50	230			purged dry: Y or N	11.29	
1254	24.0	238	6.64	1.84	360			purged dry: Y or N	11.26	
1300	26.0	239	6.64	1.59	600			purged dry: Y or N	11.26	
								Total Purged:		

Start Purge: 1249 Stop Purge: 1300 Init. Samp.: 1306 Stop Samp.: 1304

Sampler Signature:

Printed Name:

Frank R. Jr.



Adv. 3d  
Environmental Laboratories, Inc.

**Field Log Sheet**

Sample Identification: CEF 271-105

Date: 7-23-07

**Project Information:**

Client Name: ESA Environmental Specialties

**Matrix**

L+Liquid

**Sampling Method**

CP=Composite

**Field Conditions**

Wind Speed: 1-3

Site Name: Ceci Field Gas Supply (3rd site)

S=Solids

SW=Surface Water

CPT=Composite Timed

Wind Direction: S

Site Address: \_\_\_\_\_

SO=Soil

GW=Ground Water

CPF=Composite Flow

Cloud Cover (%): 0

Site Address: \_\_\_\_\_

SD=Sediment

DW=Drinking Water

GF=Grab

Precipitation: \_\_\_\_\_

**SAMPLING DATA**

Sampling Equipment Used: Peristaltic

**PURGING DATA**

Purge Method: \_\_\_\_\_

Note: All measurements "Top of Casing"

Well Capacity (gal/foot) 0.75"=0.02; 1"=0.04; 1.25"=0.06; 2"=0.16; 3"=0.37; 4"=0.65; 5"=1.02; 6" Equip. Decommed in Field Y N Cleaning Level: \_\_\_\_\_

Total Well Depth (feet): 13 Depth to Water: 10.9 Well Capacity (Gal/Ft.): 2.1

1 Well volume (Gal.) = (Total well depth-depth to water) X Well Capacity = ( 13 ) X 2.1 = 27.3

Time	Temp °C	Conductivity:	pH	D.O.	Turbidity	Color	Odor	Gallons Purged	Draw Down	Purge Rate (GPM)
1319	24.0	265	6.15	3.22	490 <sup>90</sup>	yes	n	purged dry: Y or N	25 gal.	10.97
1322	25.8	267	6.20	2.37	35	cloudy	n	purged dry: Y or N	1.5 gal.	11.06
1325	25.8	245	6.12	1.86	20	cloudy	1	purged dry: Y or N	2.25 gal.	11.07
1328	25.8	267	6.23	1.35	20	1	1	purged dry: Y or N	3 gal.	11.07
1331	25.8	269	6.25	1.77	20	1	1	purged dry: Y or N	3.25 gal.	11.08
Start Purge: <u>1316</u> Stop Purge: <u>1331</u> Init. Samp.: <u>1331</u> Stop Samp.: <u>1334</u> Total Purged: _____										

Comments: \_\_\_\_\_

Sampler Signature: \_\_\_\_\_

Printed Name: Frankie Miller



Advanced Environmental Laboratories, Inc.

### Field Log Sheet

Sample Identification: **CEF-271-125**

Date: **7-25-07**

**Project Information:**

Client Name: **ESA Environmental Specialist Inc**  
 Site Name: **Cecil Field Air Sampling**  
 Site Address: **Bldg 271**  
 Site Address:

L+Liquid

S=Solids

SO=Soil

SD=Sediment

DW=Drinking Water

Matrix

SW=Surface Water

GW=Ground Water

WW=Wastewater

CP=Composite

CPT=Composite Timed

CP=Composite Flow

DW=Drinking Water

G=Grab

Wind Speed: **1-3**

Wind Direction: **1**

Cloud Cover (%): **0**

Precipitation: **0**

Other:

### SAMPLING DATA

Sampling Equipment Used: **peristaltic**

### PURGING DATA

Purge Method:

Note: All measurements "Top of Casing"

Well Capacity (gall/foot) 0.75"=0.02; 1"=0.04; 1.25"=0.06; 2"=0.16; 3"=0.37; 4"=0.65; 5"=1.02; 6" Equip. Decomed in Field **Y** **N** Cleaning Level:

Well Diameter (in)

Total Well Depth (Feet): **13.25** Depth to Water: **9.32** Well Capacity (Gall/ft.): **5.93**

1 Well volume (Gal.) = (Total well depth-depth to water) X Well Capacity = **13.25 - 9.32 = 3.93**

Time	Temp °C	Conductivity:	pH	D.O.	Turbidity	Color	Odor	Gallons Purged	Draw Down	Purge Rate (GPM)
1348	23.6	225	6.00	1.65	65	cloudy	no	1 gal.	10.48	
1351	23.3	214	5.98	1.39	160	cloudy	no	1.5 gal.	10.46	
1354	23.3	209	5.97	1.35	210	cloudy	no	2 gal.	10.46	
1357	23.1	204	5.95	1.25	370	cloudy	no	2.5 gal.	10.46	
1400	23.1	202	5.94	1.30	420	cloudy	no	3 gal.	10.46	
Start Purge: <b>1345</b> Stop Purge: <b>1400</b> Init. Samp.: <b>1400</b> Stop Samp.: <b>1404</b> Total Purged:										

**Comments:**

Sampler Signature:

Printed Name:

**Frank Allen**



Client: ESA Environmental

Project name: Cecil Ortly

Date/Time Rcvd: 7/23/07 1430

Log-In request number: JO757313

Received by: CAY

Completed by: JS

**Cooler/Shipping Information:**

Courier:  AEL  Client  UPS  Blue Streak  FedEx  Other (describe): \_\_\_\_\_

Type:  Cooler  Box  Other (describe) \_\_\_\_\_

Cooler temperature: Identify the cooler and document the temperature blank or ice water measurement

Cooler ID					
Temp (°C)	<u>0°C</u>				
Temp taken from	<input type="checkbox"/> Temp blank <input checked="" type="checkbox"/> Sample bottle	<input type="checkbox"/> Temp blank <input type="checkbox"/> Sample bottle			
Temp measured with	<input checked="" type="checkbox"/> IR gun S/N 9333779 <input type="checkbox"/> Thermometer (enter ID):	<input type="checkbox"/> IR gun S/N 9333779 <input type="checkbox"/> Thermometer (enter ID):	<input type="checkbox"/> IR gun S/N 9333779 <input type="checkbox"/> Thermometer (enter ID):	<input type="checkbox"/> IR gun S/N 9333779 <input type="checkbox"/> Thermometer (enter ID):	<input type="checkbox"/> IR gun S/N 9333779 <input type="checkbox"/> Thermometer (enter ID):

**Other Information:**

Any "NO" responses or discrepancies should be explained in the "Comments" section below.

	CHECKLIST	YES	NO	NA
1.	Were custody seals on shipping container(s) intact?	—		—
2.	Were custody papers properly included with samples?	—		
3.	Were custody papers properly filled out (ink, signed, match labels)?	—		
4.	Did all bottles arrive in good condition (unbroken)?	—		
5.	Were all bottle labels complete (sample #, date, signed, analysis, preservatives)?	—		
6.	Did the sample labels agree with the chain of custody?	—		
7.	Were correct bottles used for the tests indicated?	—		
8.	Were proper sample preservation techniques indicated on the label?	—		
9.	Were samples received within holding times?	—		
10.	Were all VOA vials checked for the presence of air bubbles?	—		
11.	Were there air bubbles present in the VOA vials?		—	
12.	Were samples in direct contact with wet ice? If "No," check one: <input type="checkbox"/> NO ICE <input type="checkbox"/> BLUE ICE	—		
13.	Was the cooler temperature less than 6°C?	—		
14.	Were sample pHs checked and recorded by Sample control? <i>NOTE: VOA samples are checked by laboratory analysts.</i>		—	
15.	Were the sample containers provided by AEL?	—		
16.	Were samples accepted into the laboratory?	—		

**Comments:**

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**ADVANCED Environmental Laboratories, Inc.**  
**CHAIN OF CUSTODY RECORD**

Jacksonville: 6601 Southpoint Parkway, Jacksonville, FL 32216 • (904) 363-9350 Fax (904) 363-9354  
 Tampa: 9610 Princess Palm Avenue, Tampa, FL 33619 • (813) 630-9616 Fax (813) 630-4227  
 Gainesville: 6815 SW Archer Road, Gainesville, FL 32608 • (352) 377-2349 Fax (352) 395-6639  
 Orlando: 528 S. North Lake Blvd., Suite 1016, Altamonte Springs, FL 32701 • (407) 937-1594 Fax (407) 937-1597

LAE

**J0757313**

CLIENT NAME:

ESA Environmental Specialists, Inc

PROJECT NAME:

ATL Wells

ADDRESS:

1332 Baxter St  
 Charlotte NC 28204

P.O. NUMBER / PROJECT NUMBER:

PROJECT LOCATION:

Cell field Bldg 271

PHONE:

704-598-4400 FAX: 704-598-5773

CONTACT:

Tara L. Vogelien

SAMPLED BY:

Frankie Allen

TURN AROUND TIME:

REMARKS / SPECIAL INSTRUCTIONS:

STANDARD

RUSH

Travel to Sample 4.5 hrs

WW = waste water

SW = surface water

GW = ground water

DW = drinking water

OIL

A=air

SO=soil

SL=sludge

Preserv

SAMPLE ID	SAMPLE DESCRIPTION	Grab Composite	SAMPLING		MATRIX	NO. CONT.	BOTTLE SIZE & TYPE	LAB NUMBER
			DATE	TIME				
CEF-271-025		G	7/20/07	1221	GL	4	8021 BTEX + METSE	1
CEF-271-095		I		1304	I	1	8270 Sim for PAH'S	2
CEF-271-105		I		1334	I	3		3
CEF-271-125		I		1404	I	4		4
Sg Blank		I		1200	DI	5		5

I = Ice H = (HCl) S = (H<sub>2</sub>SO<sub>4</sub>) N = (HNO<sub>3</sub>) T = (Sodium Thiosulfate)

Shipment Out: / /

Method Via: / /

Sample Kit RB / AB

Cooler # D/T / D/T

Trip Bl. /

Ret: / /

Via: / /

Received by: Bellquist

Date: 7-23-07

Time: 14:10

Received by: Casey Young

Date: 7-23-07

Time: 14:30

Received on ice:  yes  no

QC  sent  received

revised 8/01