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NAS CECIL FIELD, FL
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FIRST QUARTER FIRST YEAR GROUNDWATER MONITORING LETTER REPORT FOR
BUILDING 815 WASH RACK AREA NAS CECIL FIELD FL
10/30/2008
TETRA TECH NUS INC



TETRA TECH

Document Tracking Number 08JAX0058

October 30, 2008

Project Number 112G01264

Mr. David Grabka
Remedial Project Manager
Technical Review/Federal Facilities
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Reference: CLEAN IV Contract Number N62467-04-D-0055
Contract Task Order 0102

Subject: Quarterly Groundwater Monitoring Report, 1st Quarter, Year 1 Event – June 2008
Building 815 Wash Rack Area
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this 1st Quarter, Year 1 Groundwater Monitoring Report for the Building 815 Wash Rack Area at Naval Air Station (NAS) Cecil Field. This report was prepared for the United States Navy, Naval Facilities Engineering Command Southeast (NAVFAC SE) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) IV Contract Number N62467-04-D-0055. This Quarterly Groundwater Monitoring Report summarizes the fieldwork and analytical results for the sampling event conducted in June 2008. The work was performed in general accordance with Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (SOPs) under DEP-SOP-001/01.

BACKGROUND

Building 815 is an aircraft maintenance hangar located at the northern end of the flightline and the eastern end of Lake Newman Street (formerly 6th Street) (see Figure 1). An aircraft wash rack is located north of the hangar. Naphthalene contamination in groundwater was identified in wells at the wash rack in the 1999 Sampling and Analysis Report (SAR) for Hangar 815. There are no tanks associated with this area of contamination. During the SAR, two shallow monitoring wells were installed in the area of the wash rack. In addition, an area of soil contamination and the storm water pond in the wash rack area were investigated during the SAR. The results of the investigations of these areas are described in the Technical Memorandum for Potential Source of Contamination 56.

Between October 1999 and May 2000, TtNUS conducted three phases of Site Assessment (SA) activities. The first phase included installation and sampling of one monitoring well and sampling of five existing wells. These samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and total recoverable petroleum hydrocarbons (TRPH). Naphthalene and TPH were the only contaminants detected in excess of FDEP Groundwater Cleanup Target Levels (GCTLs). The second phase involved the installation and sampling of one shallow monitoring well and sampling of three other existing upgradient wells. The groundwater samples from the second phase were

Tetra Tech NUS, Inc.



analyzed for select compounds (VOCs, SVOCs and TRPH) detected during the first phase of SA activities. The third phase of work entailed resampling monitoring well CEF-815-4S for volatile organic compounds on May 11, 2000, to confirm the Phase II vinyl chloride result. During Phase III of the SA activities, the vinyl chloride concentration was less than the FDEP GCTL in monitoring well CEF-815-4S. The extent of exceedances of naphthalene and TRPH in the groundwater was delineated, and semi-annual monitoring was proposed and approved under Florida's Petroleum Program. Based on the 2000 Natural Attenuation Monitoring Plan Approval Order (NAMPAO) issued by the FDEP, semi-annual monitoring occurred at the site from 2000 to 2003.

On January 12, 2004, TtNUS submitted the Groundwater Monitoring Report documenting the results from the July 2003 sampling event. Based on the results of the July 2003 groundwater sampling event, TtNUS concluded that naphthalene concentrations in monitoring well CEF-815-1S were continuously exceeding the annual milestone cleanup objectives. TtNUS recommended that the monitoring program be discontinued and that a Remedial Action Plan (RAP) be developed for the site. FDEP concurred with discontinuing the monitoring program and recommended that a soil assessment be conducted prior to preparation of a RAP.

In January 2005, TtNUS collected soil samples at the 815 Wash Rack Area to determine if a continuing source of soil contamination was present in the vicinity of monitoring well CEF-815-1S. Eight samples were collected above the water table and capillary fringe from 2 to 4 feet below land surface (bls) and were analyzed for VOCs, SVOCs, polynuclear aromatic hydrocarbons (PAHs) and TRPH. All soil assessment TRPH results were less than the FDEP Soil Cleanup Target Level (SCTL). As discussed during the February 2005 meeting, the NAS Cecil Field Base Realignment and Closure Team (BRAC) Cleanup Team (BCT) agreed to transfer the site from the Petroleum Program to the Installation Restoration (IR) program so that site remediation could be conducted concurrently with adjacent Site 59. However, at the September 2007 BCT Meeting, it was decided that groundwater at the 815 Wash Rack Area would be transferred back to the Petroleum Program. Because nearly 2 years had passed since the last groundwater sampling event at the 815 Wash Rack Area and because a RAP had not been prepared for the site since its transfer to the IR program, a Site Assessment Report Addendum (SARA) was recommended. The monitoring wells sampled and the analyses (naphthalene and TRPH) conducted for the SARA were the wells and analyses designated in the 2000 NAMPAO.

During the initial SARA field event on November 5, 2007, TtNUS collected groundwater samples from wells CEF-815-01S and NG-12S for baseline analyses of naphthalene using United States Environmental Protection Agency (USEPA) Method 8270C and TRPH using the Florida Petroleum Range Organics (FL-PRO) method. Monitoring well CEF-815-01S had a naphthalene concentration of 89 micrograms per liter ($\mu\text{g/L}$), greater than the FDEP GCTL of 14 $\mu\text{g/L}$. TRPH was detected at a concentration less than its GCTL in CEF-815-01S. COC concentrations in the groundwater sample collected from NG-12S during the SARA were less than GCTLs.

During a second SARA field event on February 11, 2008, one shallow monitoring well was installed using hollow-stem auger drilling techniques to delineate the plume of naphthalene at the site. The well (CEF-815-05S) was installed approximately 30 feet southeast of the well (CEF-815-01S), was screened from approximately 4 to 14 feet below ground surface (bgs), and was completed to approximately 14 feet bgs. The screen of the monitoring well is 10 feet in length. The location of CEF-815-05S is shown on Figure 2. On February 12, 2008, groundwater samples were collected from wells CEF-815-01S, CEF-815-05S, NG-12S, and CEF-059-028-015 and analyzed for naphthalene using USEPA Method 8270C and for TRPH using FL-PRO. Water level measurements were recorded on February 12, 2008, from wells CEF-815-01S, CEF-815-05S, NG-12S, and CEF-059-028-015 prior to sampling activities. Based on the data from the February 2008 sampling event, shallow groundwater flow was to the southeast, which was consistent with historical data from the site. February 2008 samples from CEF-815-01S and CEF-815-05S had naphthalene concentrations of 69 $\mu\text{g/L}$ and 37 $\mu\text{g/L}$, respectively. Although these results exceeded the FDEP GCTL of 14 $\mu\text{g/L}$, they were less than the Natural Attenuation Default Source Concentration (NADSC) of 140 $\mu\text{g/L}$ and continued to demonstrate a pattern of consistent decreasing concentrations of naphthalene since the first sampling event performed in accordance with the FDEP-



approved semi-annual monitoring in 2000. TRPH concentrations were less than the GCTL in CEF-815-01S and CEF-815-05S. COC concentrations in samples from NG-12S and CEF-059-028-015 were less than FDEP GCTLs.

Due to the decreasing trend in naphthalene concentrations in CEF-815-1S, the well at which the highest concentrations are consistently detected, and because the most recent naphthalene concentration in this well is significantly less than the NADSC of 140 µg/L, TtNUS recommended in the 2008 SARA that regular monitoring of wells CEF-815-1S, NG-12S, CEF-815-5S, and CEF-059-015 for naphthalene be conducted over a 5-year period. The proposed sampling frequency was quarterly for the first year, semi-annual for years two and three, and annual for years four and five. FDEP approval of this long-term monitoring program, as proposed in the SARA submitted in May 2008, is pending at the time of the submittal of this report. The first post-SARA sampling event was conducted in June 2008 and was identified as the 1st Quarter, Year 1 event.

FIELD ACTIVITIES

On June 19, 2008, TtNUS collected groundwater samples from wells CEF-815-01S, NG-12S, CEF-815-05S, and CEF-059-028-015 for analysis of naphthalene using USEPA Method 8270C. Monitoring wells locations are shown on Figure 2. Low-flow purge sheets and groundwater sample log sheets from the June 2008 event are included as Attachment A. The samples were placed on ice immediately upon collection and hand-delivered under chain of custody to Environmental Conservation Laboratories, Inc., in Jacksonville, Florida.

Water level measurements were recorded on June 19, 2008, from wells CEF-815-01S, CEF-815-05S, NG-12S, and CEF-059-028-015 prior to sampling activities. The depth to water ranged from 6.40 feet (CEF-815-01S) to 7.18 feet below top of casing (btoc) (CEF-059-028-015). The data were recorded on groundwater sample log sheets and low-flow purge data sheets provided in Attachment A. The depth-to-water measurements, top-of-casing elevations, and groundwater elevations are presented in Table 1. General protocols were in accordance with FDEP SOPs and TtNUS SOP SA-1.1.

RESULTS

Based on June 2008 data, shallow groundwater flow is to the southeast, which is consistent with historical data from the site. Groundwater elevation contours from June 2008 are shown on Figure 3.

During the June 2008 sampling event, naphthalene was detected at 50 µg/L, 42 µg/L, 2.2 µg/L, and 0.058 µg/L in CEF-815-01S, CEF-815-05S, NG-12S, and CEF-059-028-015, respectively. Naphthalene concentrations in CEF-815-01S (50 µg/L) and CEF-815-05S (42 µg/L) exceeded the FDEP GCTL of naphthalene of 14 µg/L. Naphthalene results in the perimeter monitoring wells NG-12S and CEF-059-028-015 remained less than the GCTL. Laboratory analytical results from the June 2008 sampling event are summarized in Table 2 and illustrated on Figure 4. The laboratory analytical report is provided as Attachment B.

CONCLUSIONS AND RECOMMENDATIONS

During the June 2008 sampling event, naphthalene concentrations in source wells CEF-815-01S and CEF-815-05S were greater the FDEP GCTL of 14 µg/L. Concentrations in CEF-815-01S have consistently decreased since the November 2000 sampling event. Concentrations in CEF-815-05S increased slightly from 37 µg/L in February 2008 to 42 µg/L in June 2008. Overall, the groundwater flow direction appears to be consistent with historical estimates, and naphthalene in groundwater at the site appears to be naturally attenuating over time.

Based on the results of the 1st Quarter, Year 1 sampling event, TtNUS recommends that groundwater sampling continue on a quarterly basis. The 2nd Quarter, Year 1 sampling event is scheduled for October 2008.



TETRA TECH

Mr. David Grabka
FDEP
October 30, 2008 – Page 4

If you have any questions regarding this submittal, please feel free to contact Kara Wimble at (904) 730-4669, extension 217, or via e-mail at Kara.Wimble@ttnus.com.

Sincerely,

Robert Simcik, P.E.
Task Order Manager
P.E. Number 61263

Kara F. Wimble
Project Scientist

RS/rm

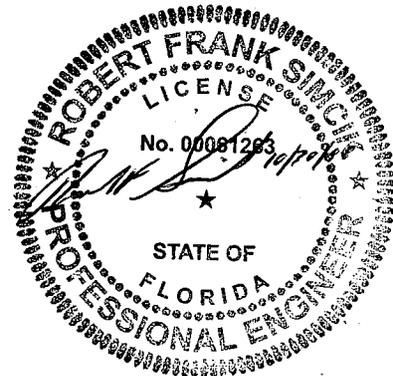
Attachments (4)

- c:
- A. Sanford, NAVFAC SE (CD only)
 - M. Perry, TtNUS (unbound and CD)
 - R. Simcik, TtNUS (bookcase file)
 - D. Humbert, TtNUS (cover letter only)
 - CTO 102 Project File
 - J. Johnson, TtNUS (Information Repository)

CERTIFICATION

The information contained herein is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned engineer should be notified to evaluate the effects of any additional information on the information described in this report. This Groundwater Monitoring Report, 1st Quarter, Year 1 Event – June 2008, was developed for the Building 815 Wash Rack area at the former Naval Air Station Cecil Field and should not be construed to apply to any other site.

October 30, 2008
Robert Simcik, P.E.
P.E. License Number 61263



TABLES

TABLE 1
GROUNDWATER ELEVATION DATA
1ST YEAR, 1ST QUARTERLY SAMPLING EVENT
BUILDING 815 WASH RACK AREA
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Monitoring Well Identification	Well Depth (feet btoc)	TOC Elevation (feet msl above)	May 1, 2001		December 17, 2001		June 19, 2002		January 9, 2003		July 24, 2003		February 12, 2008		June 19, 2008	
			Depth to Water (feet btoc)	Water Level Elevation (feet msl above)	Depth to Water (feet btoc)	Water Level Elevation (feet msl above)	Depth to Water (feet btoc)	Water Level Elevation (feet msl above)	Depth to Water (feet btoc)	Water Level Elevation (feet msl above)	Depth to Water (feet btoc)	Water Level Elevation (feet msl above)	Depth to Water (feet btoc)	Water Level Elevation (feet msl above)	Depth to Water (feet btoc)	Water Level Elevation (feet msl above)
CEF-815-1S	13.10	75.55	6.12	69.44	5.40	70.16	6.41	69.15	4.25	71.31	4.53	71.03	6.31	69.24	6.40	69.15
CEF-815-5S	14.40	75.65	NM	NM	6.56	69.09	6.61	69.04								
NG-12S	13.40	75.69	6.39	69.30	5.63	70.06	6.68	69.01	4.69	71.00	4.83	70.86	6.54	69.15	6.60	69.09
CEF-059-028-015	15.00	76.05	NM	NM	7.16	68.89	7.18	68.87								

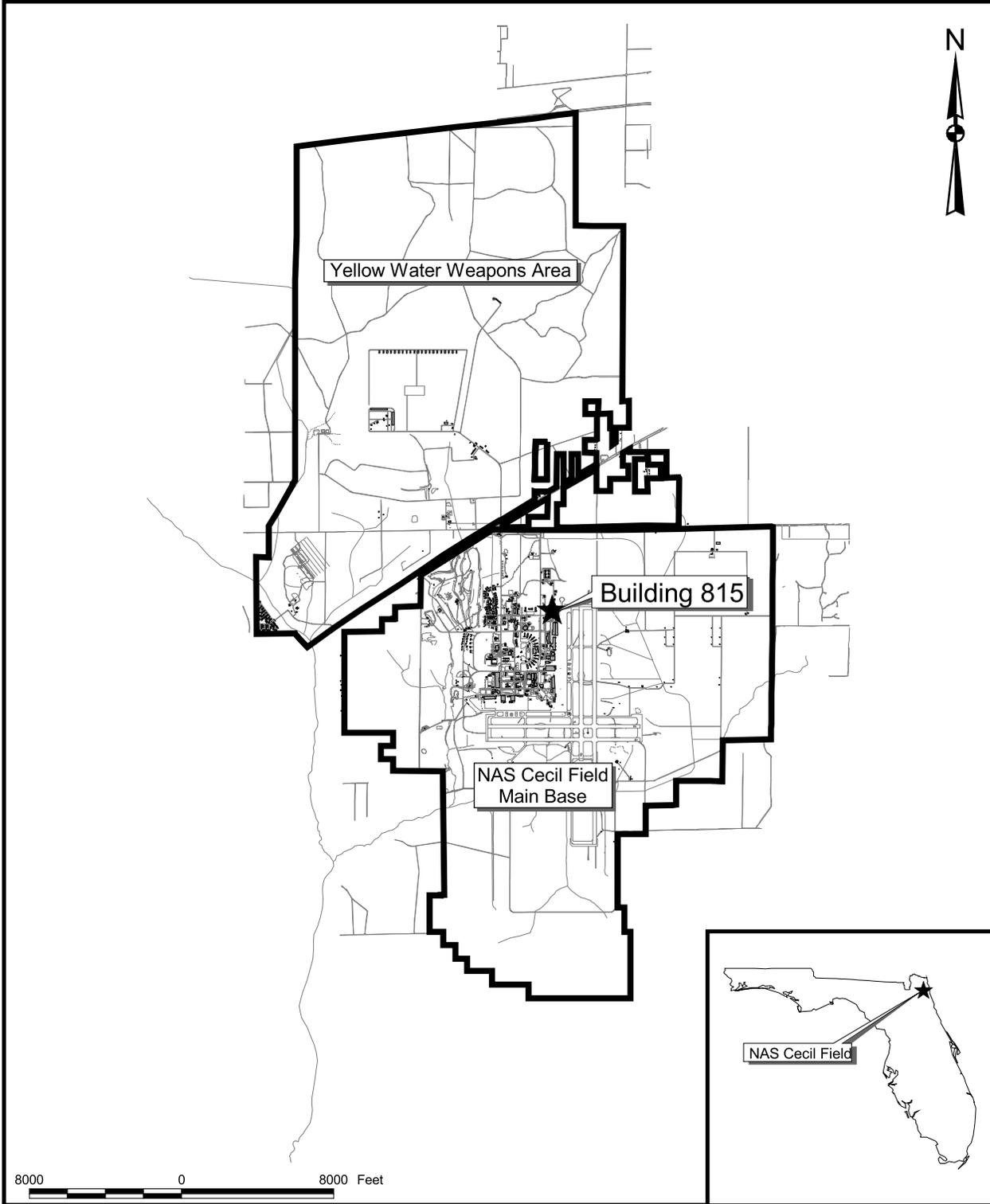
TOC = Top of casing.
btoc = Below top of casing.
msl = Mean sea level.
NM = Not measured.

TABLE 2

GROUNDWATER ANALYTICAL DATA - NAPHTHALENE
 1ST YEAR, 1ST QUARTER SAMPLING EVENT
 BUILDING 815 WASH RACK AREA
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

WELL ID	SAMPLING DATE	RESULTS (UG/L)
GROUNDWATER CLEANUP TARGET LEVEL*		14
NATURAL ATTENUATION DEFAULT CONCENTRATIONS*		140
CEF-815-01S	11/6/00	192
	5/1/01	250
	12/17/01	129
	6/19/02	299
	7/17/02	205
	1/10/03	152
	7/24/03	256
	1/1/06	140
	11/5/07	89
	2/12/08	69
CEF-815-05S	Feb-08	37
	Jun-08	42
NG-12S	Nov-00	9.2
	May-01	8.2
	Dec-01	7.1
	Jun-02	3.4
	Jan-03	13.2
	Jul-03	39.9
	Jan-06	13.6
	Nov-07	4.7
	Feb-08	3.3
	Jun-08	2.2
CEF-059-028-015	Feb-08	5.4
	Jun-08	4.7

FIGURES

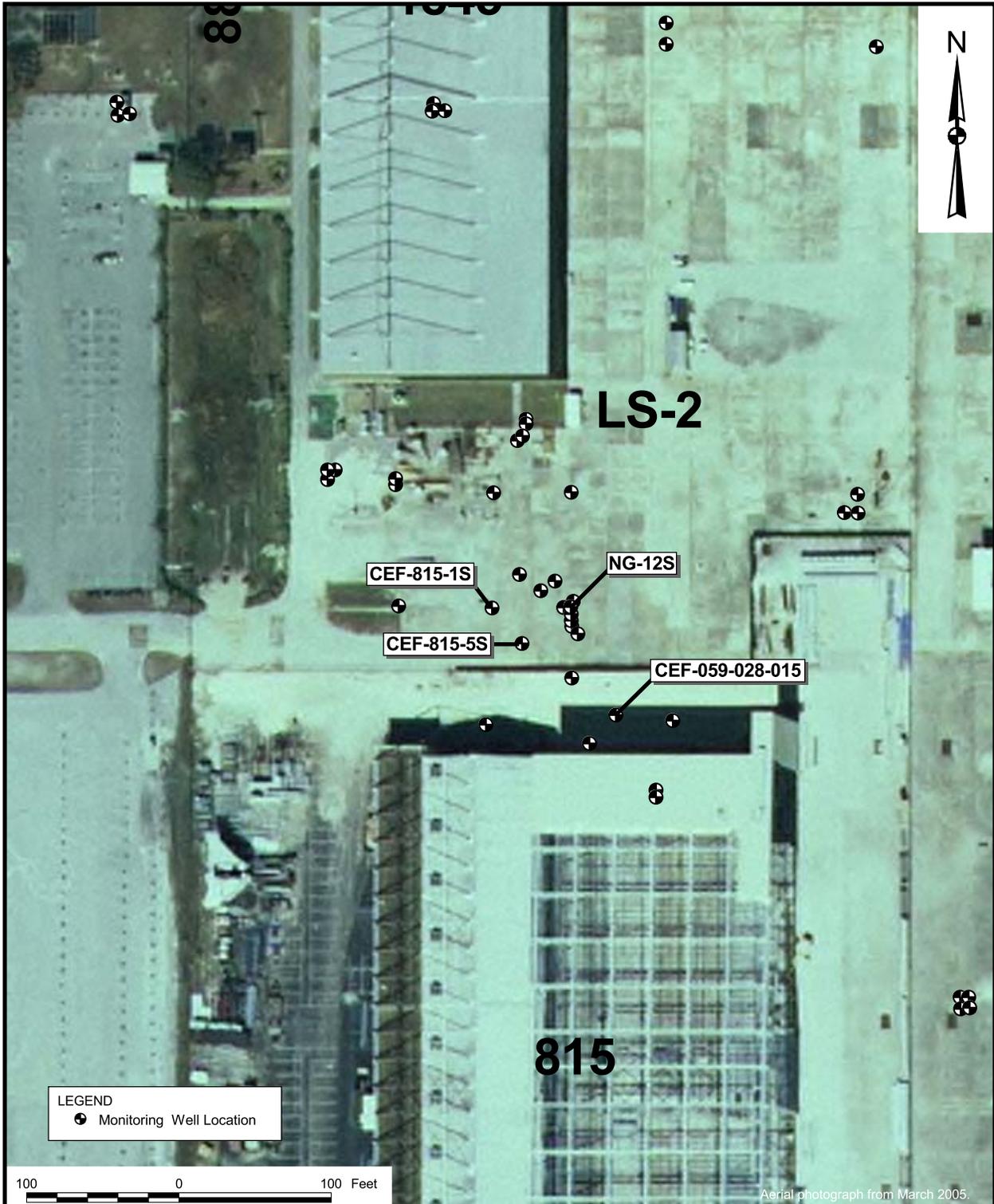


DRAWN BY MJJ	DATE 11Mar08
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



GENERAL LOCATION MAP
 BUILDING 815 WASH RACK AREA
 1st QUARTER, YEAR 1 EVENT - JUNE 2008
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 4093	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0



LEGEND
 ● Monitoring Well Location

100 0 100 Feet

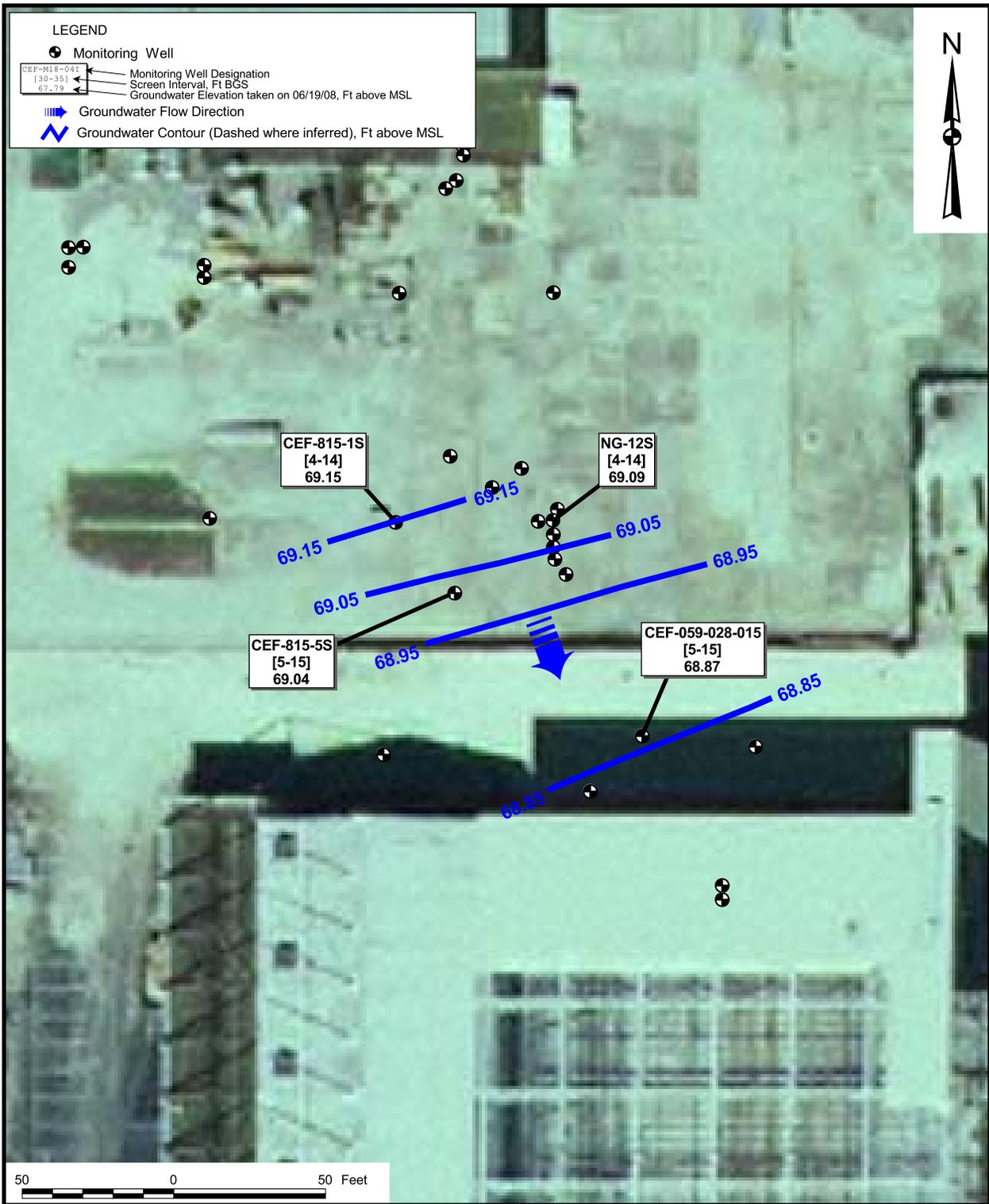
Aerial photograph from March 2005.

DRAWN BY MJJ	DATE 11Mar08
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



SITE LAYOUT AND MONITORING WELL LOCATIONS
 BUILDING 815 WASH RACK AREA
 1st QUARTER, YEAR 1 EVENT - JUNE 2008
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 4093	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2	REV 0

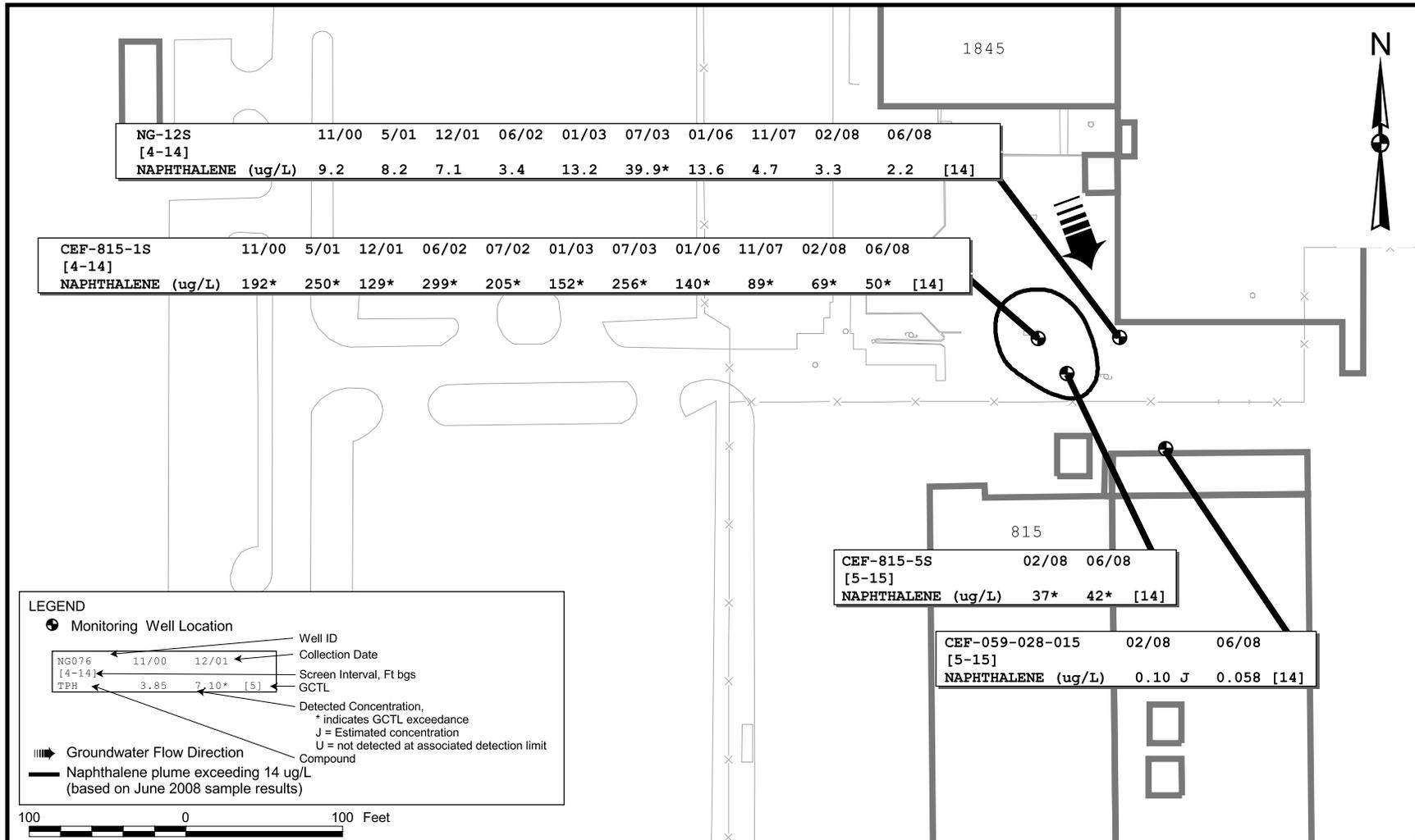


DRAWN BY MJJ	DATE 22Mar08
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



GROUNDWATER FLOW MAP (JUNE 2008)
 BUILDING 815 WASH RACK AREA
 1st QUARTER, YEAR 1 EVENT - JUNE 2008
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 4093	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3	REV 0



DRAWN BY	DATE
MJJ	11Mar06
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE	
AS NOTED	



GROUNDWATER CONCENTRATIONS
 BUILDING 815 WASH RACK AREA
 1st QUARTER, YEAR 1 EVENT - JUNE 2008
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 4093	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 4	REV 0

ATTACHMENT A
FIELD LOG SHEETS



Project / Site: 815 Wash Rack, Cecil Field Sample ID No.: CEF-815-1S-2008619
 Project No.: 112GN0039 Sample Location: CEF-815-1S
 Monitoring Well Sampler: JG
 Domestic Well
 Other: _____

SAMPLING DATA									
Date:	<u>6/19/08</u>	Color	<u>clear</u>	pH	<u>6.11</u>	S.C.	<u>0.352</u>	Temp.	<u>27.82</u>
Time:	<u>1159</u>			S.U.		mS/cm		°C	
Method:	<u>Peristaltic</u>		<u>clear</u>					Turbidity	<u>1.16</u>
								DO	<u>0.09</u>
								ORP	<u>-215.9</u>

PURGE DATA	
Date:	
Method:	<u>Peristaltic</u>
Monitor Reading (ppm):	<u>0</u>
Well Casing Diameter:	<u>2"</u>
Well Casing Material:	<u>PVC</u>
Total Well Depth (ft):	<u>13.10</u>
Static Water Level (ft):	<u>6.40</u>
One Screen Volume (gal):	<u>4</u>
Start Purge (hrs):	<u>1050</u>
End Purge (hrs):	<u>1159</u>
Total Purge Time (min):	<u>69</u>
Total Vol. Purged (gal):	<u>138</u>

See Attached Low Flow Purge Data Sheet
for Purge Data

SAMPLE COLLECTION INFORMATION					
Analysis	Preservative	Container Requirements	Laboratory	Collected	
Naphthalene	8260B	HSO4	1- 1L Amber	CAS	<input checked="" type="checkbox"/>

OBSERVATIONS / NOTES	LAB INFO
	LAB: <u>EAS - ENCO</u> <u>8540 Baycenter Road</u> Jacksonville, FL 32256 COC #: <u>2558</u>

Check if Collected: MS / MSD DUPLICATE / ID No.: CEF-815-DU01-2008619

Signature(s): Joe Gibson



Project / Site: 815 Wash Rack, NAS Cecil Field Sample ID No.: NG-12S - 2008619
 Project No.: 112GN0039 Sample Location: NG-12S
 Monitoring Well Sampler: JG
 Domestic Well
 Other: _____

SAMPLING DATA								
Date: <u>6/19/08</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	
Time: <u>1324</u>		S.U.	mS/cm	°C	NTU	mg/L	mV	
Method: <u>Peristaltic</u>	<u>clear</u>	<u>4.93</u>	<u>0.074</u>	<u>29.12</u>	<u>0.41</u>	<u>0.27</u>	<u>-87.1</u>	

PURGE DATA	
Date: <u>6/19/08</u>	See Attached Low Flow Purge Data Sheet for Purge Data
Method: <u>Peristaltic</u>	
Monitor Reading (ppm): <u>0</u>	
Well Casing Diameter: <u>2"</u>	
Well Casing Material: <u>PVC</u>	
Total Well Depth (ft): <u>13.40</u>	
Static Water Level (ft): <u>6.60</u>	
One Screen Volume (gal/L): <u>4</u>	
Start Purge (hrs): <u>1215</u>	
End Purge (hrs): <u>1324</u>	
Total Purge Time (min): <u>69</u>	
Total Vol. Purged (gal/L): <u>13.8</u>	

SAMPLE COLLECTION INFORMATION					
Analysis	Preservative	Container Requirements		Laboratory	Collected
Naphthalene	8260B	HSO4	1- 1L Amber	CAS	✓

OBSERVATIONS / NOTES	LAB INFO
	LAB: <u>GAS ENCO</u> <u>8540 Baycenter Road</u> Jacksonville, FL 32256 COC #: <u>2558</u>

Check if Collected:		Signature(s): <u>Joe Giblin</u>
<input type="checkbox"/> MS / MSD	<input type="checkbox"/> DUPLICATE / ID No.:	



Project / Site: 815 Wash Rack, NAS Cecil Field Sample ID No.: CEF-815-05S-2008619
 Project No.: 112GN0039 Sample Location: CEF-815-05S
 Monitoring Well Sampler: JG
 Domestic Well
 Other: _____

SAMPLING DATA								
Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	
Time:	S.U.	mS/cm	°C	NTU	mg/L	mV		
<u>6/19/08</u>	<u>clear</u>	<u>4.91</u>	<u>2068</u>	<u>27.60</u>	<u>0.77</u>	<u>0.08</u>	<u>-102.7</u>	

PURGE DATA	
Date: <u>6/19/08</u>	See Attached Low Flow Purge Data Sheet for Purge Data
Method: <u>Peristaltic</u>	
Monitor Reading (ppm): <u>0</u>	
Well Casing Diameter: <u>2"</u>	
Well Casing Material: <u>PVC</u>	
Total Well Depth (ft): <u>14.63</u>	
Static Water Level (ft): <u>6.61</u>	
One Screen Volume(gal/L): <u>4.2</u>	
Start Purge (hrs): <u>1335</u>	
End Purge (hrs): <u>1456</u>	
Total Purge Time (min): <u>81</u>	
Total Vol. Purged (gal/L): <u>16.2</u>	

SAMPLE COLLECTION INFORMATION					
Analysis	Preservative	Container Requirements		Laboratory	Collected
Naphthalene 8260B	HSO4	1- 1L Amber		CAS	<input checked="" type="checkbox"/>

OBSERVATIONS / NOTES	LAB INFO
	LAB: <u>ENC</u> <u>8540 Baycenter Road</u> Jacksonville, FL 32256 COC #: <u>2558</u>

Check if Collected:	Signature(s):
<input type="checkbox"/> MS / MSD <input type="checkbox"/> DUPLICATE / ID No.:	<u>Joe Gibson</u>



Project / Site: 815 Wash Rack, NAS Cecil Field Sample ID No.: CEF-059-028-015-2008619
 Project No.: 112GN0039 Sample Location: CEF-059-028-015
 Monitoring Well Sampler: J. G.
 Domestic Well
 Other: _____

SAMPLING DATA								
Date: <u>6/19/08</u>	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	
Time: <u>1539</u>		S.U.	mS/cm	°C	NTU	mg/L	mV	
Method: Peristaltic	<u>Clear</u>	<u>5.18</u>	<u>0.093</u>	<u>28.51</u>	<u>0.18</u>	<u>0.11</u>	<u>-106.9</u>	

PURGE DATA	
Date: <u>6/19/08</u>	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): <u>0</u>	
Well Casing Diameter: <u>2 1/2"</u>	
Well Casing Material: PVC	
Total Well Depth (ft): <u>15.00</u>	
Static Water Level (ft): <u>7.18</u>	
One Screen Volume(gal/L): <u>1.2</u>	
Start Purge (hrs): <u>1512</u>	
End Purge (hrs): <u>1539</u>	
Total Purge Time (min): <u>27</u>	
Total Vol. Purged (gal/L): <u>5.4</u>	

SAMPLE COLLECTION INFORMATION						
Analysis	Preservative	Container Requirements		Laboratory	Collected	
Naphthalene 8260B	HSO4	1- 1L Amber		CAS	✓	

OBSERVATIONS / NOTES	LAB INFO
	LAB: <u>GAS ENCO</u> <u>9540 Baycenter Road</u> Jacksonville, FL 32256 COC #: <u>2558</u>

Check if Collected:		Signature(s): <u>Joe Gibson</u>
<input type="checkbox"/> MS / MSD	<input type="checkbox"/> DUPLICATE / ID No.:	

ATTACHMENT B

LABORATORY ANALYTICAL REPORT

Environmental Conservation Laboratories, Inc.

4810 Executive Park Court, Suite 211

Jacksonville FL, 32216-6069

Phone: 904.296.3007 FAX: 904.296.6210



www.encolabs.com

Friday, July 25, 2008

Tetra Tech NUS (BR006)

Attn: Kara Wimble

8640 Philips Highway Suite 16

Jacksonville, FL 32256

**RE: Laboratory Results for
Project Number: 112GN0039, Project Name/Desc: Cecil-815 Wash Rack
ENCO Workorder: B803339**

Dear Kara Wimble,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, June 20, 2008.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Jacksonville. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "Chris Tompkins". The signature is written in a cursive style.

Chris Tompkins For Lorraine Strong

Project Manager

Enclosure(s)



www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: CEF-815-1S-2008619 Lab ID: B803339-01RE1 Sampled: 06/19/08 11:59 Received: 06/20/08 09:24

Parameter Hold Date/Time(s) Prep Date/Time(s) Analysis Date/Time(s)
EPA 8270C 06/26/08 08/02/08 06/23/08 15:35 6/25/2008 10:36

Client ID: CEF-815-DU01-2008619 Lab ID: B803339-02RE1 Sampled: 06/19/08 11:59 Received: 06/20/08 09:24

Parameter Hold Date/Time(s) Prep Date/Time(s) Analysis Date/Time(s)
EPA 8270C 06/26/08 08/02/08 06/23/08 15:35 6/25/2008 10:54

Client ID: NG-815-12S-2008619 Lab ID: B803339-03 Sampled: 06/19/08 13:24 Received: 06/20/08 09:24

Parameter Hold Date/Time(s) Prep Date/Time(s) Analysis Date/Time(s)
EPA 8270C 06/26/08 08/02/08 06/23/08 15:35 6/24/2008 22:08

Client ID: CEF-815-05S-2008619 Lab ID: B803339-04RE1 Sampled: 06/19/08 14:56 Received: 06/20/08 09:24

Parameter Hold Date/Time(s) Prep Date/Time(s) Analysis Date/Time(s)
EPA 8270C 06/26/08 08/02/08 06/23/08 15:35 6/25/2008 11:12

Client ID: CEF-815-059-028-015-2008619 Lab ID: B803339-05 Sampled: 06/19/08 15:39 Received: 06/20/08 09:24

Parameter Hold Date/Time(s) Prep Date/Time(s) Analysis Date/Time(s)
EPA 8270C 06/26/08 08/02/08 06/23/08 15:35 6/24/2008 22:45



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SAMPLE DETECTION SUMMARY

Client ID: CEF-815-1S-2008619 **Lab ID:** B803339-01RE1

Analyte	Results	Flag	PQL	Units	Method	Notes
Naphthalene	50		0.50	ug/L	EPA 8270C	

Client ID: CEF-815-DU01-2008619 **Lab ID:** B803339-02RE1

Analyte	Results	Flag	PQL	Units	Method	Notes
Naphthalene	58		0.50	ug/L	EPA 8270C	

Client ID: NG-815-12S-2008619 **Lab ID:** B803339-03

Analyte	Results	Flag	PQL	Units	Method	Notes
Naphthalene	2.2		0.10	ug/L	EPA 8270C	

Client ID: CEF-815-05S-2008619 **Lab ID:** B803339-04RE1

Analyte	Results	Flag	PQL	Units	Method	Notes
Naphthalene	42		0.50	ug/L	EPA 8270C	

Client ID: CEF-815-059-028-015-2008619 **Lab ID:** B803339-05

Analyte	Results	Flag	PQL	Units	Method	Notes
Naphthalene	0.058	I	0.10	ug/L	EPA 8270C	



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ANALYTICAL RESULTS

Description: CEF-815-1S-2008619

Lab Sample ID: B803339-01

Received: 06/20/08 09:24

Matrix: Ground Water

Sampled: 06/19/08 11:59

Work Order: B803339

Project: Cecil-815 Wash Rack

Sampled By: Joe Gibson

Semivolatile Organic Compounds by GCMS SIM

^ - ENCO Jacksonville certified analyte [NELAC E82277]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Naphthalene [91-20-3] ^	50		ug/L	5	0.11	0.50	8F23017	EPA 8270C	06/25/08 10:36	JWJ	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>		<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
p-Terphenyl	0.0	5	5.00	%	39-148		8F23017	EPA 8270C	06/25/08 10:36	JWJ	QS-04

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



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Description: CEF-815-DU01-2008619

Lab Sample ID: B803339-02

Received: 06/20/08 09:24

Matrix: Ground Water

Sampled: 06/19/08 11:59

Work Order: B803339

Project: Cecil-815 Wash Rack

Sampled By: Joe Gibson

Semivolatile Organic Compounds by GCMS SIM

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Naphthalene [91-20-3] ^	58		ug/L	5	0.11	0.50	8F23017	EPA 8270C	06/25/08 10:54	JWJ	
Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes	
p-Terphenyl	0.0	5	5.00	%	39-148	8F23017	EPA 8270C	06/25/08 10:54	JWJ	QS-04	

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Description: NG-815-12S-2008619

Lab Sample ID: B803339-03

Received: 06/20/08 09:24

Matrix: Ground Water

Sampled: 06/19/08 13:24

Work Order: B803339

Project: Cecil-815 Wash Rack

Sampled By: Joe Gibson

Semivolatile Organic Compounds by GCMS SIM

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Naphthalene [91-20-3] ^	2.2		ug/L	1	0.022	0.10	8F23017	EPA 8270C	06/24/08 22:08	JWJ	
Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits		Batch	Method	Analyzed	By	Notes
p-Terphenyl	3.2	1	5.00	64 %	39-148		8F23017	EPA 8270C	06/24/08 22:08	JWJ	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



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Description: CEF-815-05S-2008619

Lab Sample ID: B803339-04

Received: 06/20/08 09:24

Matrix: Ground Water

Sampled: 06/19/08 14:56

Work Order: B803339

Project: Cecil-815 Wash Rack

Sampled By: Joe Gibson

Semivolatile Organic Compounds by GCMS SIM

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Naphthalene [91-20-3] ^	42		ug/L	5	0.11	0.50	8F23017	EPA 8270C	06/25/08 11:12	JWJ	
Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes	
p-Terphenyl	0.0	5	5.00	%	39-148	8F23017	EPA 8270C	06/25/08 11:12	JWJ	QS-04	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



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Description: CEF-815-059-028-015-2008619

Lab Sample ID: B803339-05

Received: 06/20/08 09:24

Matrix: Ground Water

Sampled: 06/19/08 15:39

Work Order: B803339

Project: Cecil-815 Wash Rack

Sampled By: Joe Gibson

Semivolatile Organic Compounds by GCMS SIM

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Naphthalene [91-20-3] ^	0.058	I	ug/L	1	0.022	0.10	8F23017	EPA 8270C	06/24/08 22:45	JWJ	
Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes	
p-Terphenyl	3.5	1	5.00	70 %	39-148	8F23017	EPA 8270C	06/24/08 22:45	JWJ		

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



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QUALITY CONTROL

Semivolatile Organic Compounds by GCMS SIM - Quality Control

Batch 8F23017 - EPA 3510C_MS

Blank (8F23017-BLK1)

Prepared: 06/23/2008 15:35 Analyzed: 06/24/2008 19:40

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Naphthalene	0.022	U	0.10	ug/L							
Surrogate: p-Terphenyl	4.3			ug/L	5.00		87	39-148			

LCS (8F23017-BS1)

Prepared: 06/23/2008 15:35 Analyzed: 06/24/2008 20:17

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Naphthalene	1.2		0.10	ug/L	2.00		62	35-105			
Surrogate: p-Terphenyl	4.2			ug/L	5.00		85	39-148			

Matrix Spike (8F23017-MS1)

Prepared: 06/23/2008 15:35 Analyzed: 06/24/2008 20:36

Source: B804347-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Naphthalene	1.2		0.10	ug/L	2.00	0.022 U	58	35-105			
Surrogate: p-Terphenyl	4.0			ug/L	5.00		80	39-148			

Matrix Spike Dup (8F23017-MSD1)

Prepared: 06/23/2008 15:35 Analyzed: 06/24/2008 20:54

Source: B804347-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Naphthalene	1.2		0.10	ug/L	2.00	0.022 U	60	35-105	3	30	
Surrogate: p-Terphenyl	4.0			ug/L	5.00		80	39-148			

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value. The associated sample note or project narrative indicate the causative reason.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*	Not reported due to interference.
QS-04	Surrogate recovery not calculated. Surrogate diluted out of the calibration range.



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER

2558

3803339

PAGE 1 OF 1

PROJECT NO: 1126-N0039		FACILITY: Coal-815 Wash Ref		PROJECT MANAGER Kara Wimple		PHONE NUMBER 904-636-6125		LABORATORY NAME AND CONTACT: ENCO / Lorraine Strong											
SAMPLERS (SIGNATURE) Joe Giblin				FIELD OPERATIONS LEADER Joe Gibson		PHONE NUMBER 904-636-6125		ADDRESS 4810 Executive Park Ct. Ste. 211											
				CARRIER/WAYBILL NUMBER Hand delivered				CITY, STATE Jacksonville, FL 32216											
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day				CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS Naphthalene None G											
DATE YEAR 2008		TIME		SAMPLE ID		LOCATION ID						TOP DEPTH (FT)		BOTTOM DEPTH (FT)		MATRIX (GW, SO, SW, SD, QC, ETC.)		COLLECTION METHOD GRAB (G) COMP (C)	
6/19		1159		CEF-815-15-2008619		1S		-		-		GW G		G		1		X Cool to 4°C	
"		1159		CEF-815-DU01-2008619		1S		-		-		GW G		G		1		X "	
"		1324		NG-12S-2008619		12S		-		-		GW G		G		1		X "	
"		1456		CEF-815-05S-2008619		5S		-		-		GW G		G		1		X "	
"		1539		CEF-059-008-015-2008619				-		-		GW G		G		1		X "	
1. RELINQUISHED BY Joe Giblin				DATE 6/20/08		TIME 0724		1 RECEIVED BY Danner				DATE 6/20/08		TIME 931					
2. RELINQUISHED BY				DATE		TIME		2 RECEIVED BY				DATE		TIME					
3. RELINQUISHED BY				DATE		TIME		3 RECEIVED BY				DATE		TIME					
COMMENTS G381 @ 0.8°C																			

