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SECOND SEMI-ANNUAL SECOND YEAR GROUNDWATER MONITORING LETTER REPORT  
FOR BUILDING 815 WASHRACK AREA NAS CECIL FIELD FL  
9/6/2002  
TETRA TECH NUS INC



## TETRA TECH NUS, INC.

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Document Tracking Number 02JAX0195

September 6, 2002

Project Number N4093

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 Contract Number N62467-94-D-0888  
Contract Task Order Number 0209

Subject: Groundwater Monitoring Report/ Annual Report, 2<sup>nd</sup> Semi-Annual, 2<sup>nd</sup> Year (June 2002)  
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 Groundwater Monitoring Letter Report/Annual Report for the referenced Contract Task Order (CTO). This report was prepared by TtNUS for the U.S. Navy (Navy) Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) under the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888. The objective of this task is to semi-annually monitor groundwater associated with the site. The guidance document for this report is Chapter 62-770, Florida Administrative Code (FAC). The sampling program was accomplished in general accordance with the Natural Attenuation Monitoring Only Plan (MOP) Approval Order that was issued by the Florida Department of Environmental Protection (FDEP) on August 31, 2000 (Attachment A) and as modified by the Base Closure Team (BCT) in January 2001 (Attachment B). The modification consisted of adding well NG-14S as a perimeter well and re-designating well CEF-815-3S as a contaminated well.

This report summarizes the fieldwork and analytical results for the subject site, which was conducted in June and July 2002. The work was performed in general accordance with the Base-wide Generic Work Plan Volumes I and II (TtNUS, 1998).

### FIELD OPERATIONS

Figure 1 shows the location of the site. On June 19, 2002, water level measurements were obtained from nine monitoring wells prior to sample collection. This data is presented in Table 1. The depth to water ranged from 6.41 to 7.07 feet (ft) below top of casing (btoc). The depth-to-water measurements, along with top-of-casing elevations, were used to calculate groundwater elevations.

Groundwater samples were collected on June 19, 2002 from the five monitoring wells in accordance with the modified MOP program. Those wells included CEF-815-1S (contaminated), CEF-815-3S (contaminated), NG-12S (contaminated), NG-14S (perimeter), and NG-26S (perimeter). On

July 17, 2002, CEF-815-1S was resampled and analyzed for naphthalene and total recoverable petroleum hydrocarbons (TRPH) because the naphthalene concentration was greater than the action level and the TRPH concentration was greater than the second year milestone objective.

Following collection efforts, the groundwater samples were shipped on ice and under chain-of-custody to Accutest Laboratories in Orlando, Florida for analysis. The samples were analyzed using the United States Environmental Protection Agency (USEPA) Method SW846 8310 for naphthalene and Florida Petroleum Range Organics (FL-PRO) for TRPH.

## RESULTS

Figure 2 illustrates the groundwater elevations as measured on June 19, 2002. The groundwater contours on Figure 2 show the flow is to the southeast. The groundwater elevation for CEF-815-2S was not consistent with either the other measurements or historic measurements and was not used in the creating the groundwater contours. Previous groundwater measurements at this well have been consistent with the other wells, and the reason for the anomalous result is not known. Table 1 provides the water table elevation data for the event.

The analytical results for this event are summarized in Table 2 and are shown on Figure 3. The laboratory data (Attachment C) indicates that naphthalene was detected in the three wells designated as contaminated: CEF-815-1S, NG-12S, and CEF-815-3S. The analytical results from the June 19, 2002 sampling event indicated that the MOP action level for naphthalene [200 micrograms per liter ( $\mu\text{g/L}$ )] was exceeded in the groundwater sample collected from CEF-815-1S (299  $\mu\text{g/L}$ ), but MOP action levels were not exceeded in the groundwater samples collected from CEF-815-3S and NG-12S. Of the three contaminated wells sampled, groundwater from CEF-815-1S and CEF-815-3S exceeded the Groundwater Cleanup Target Level (GCTL) of 20  $\mu\text{g/L}$ . The naphthalene concentration in the sample collected from NG-12S (3.4  $\mu\text{g/L}$ ) was below the GCTL. The naphthalene concentrations in the samples from the perimeter wells (NG-14S and NG-26S) were 1  $\mu\text{g/L}$  and 3.9  $\mu\text{g/L}$  (4.2  $\mu\text{g/L}$  in a duplicate), respectively. Well CEF 815-1S was resampled on July 17, 2002, and the naphthalene concentration was 205  $\mu\text{g/L}$ , which is only slightly greater than the MOP action level.

TRPH was detected in the five monitoring wells, but no action level was exceeded. The groundwater samples collected from CEF-815-1S [22.7 milligrams per liter ( $\text{mg/L}$ )] and CEF-815-3S (5.48  $\text{mg/L}$ ) exceeded the GCTL of 5  $\text{mg/L}$ . The concentration reported for the sample collected on June 19, 2002 from CEF-815-1S was also greater than the second year milestone objectives (Table 2). The reported TRPH concentrations for the other three wells were below the GCTL (Table 2). Well CEF 815-1S was resampled on July 17, 2002, and the TRPH concentration was 16.3  $\text{mg/L}$ , which is less than the MOP action level. A copy of the analytical report is presented in Attachment C.

Note that the turbidity in CEF-815-3S was 120 nephelometric turbidity units (NTUs). This turbidity is relatively high, and the naphthalene concentration (54.8  $\mu\text{g/L}$ ) and TRPH concentration (5.48  $\text{mg/L}$ ) in the groundwater sample may be attributable to contaminants sorbed onto the suspended solids.

## CONCLUSIONS AND RECOMMENDATIONS

Groundwater flow was recorded to be southeasterly in previous reports and was determined to be approximately the same during this sample period.

Figure 3 depicts naphthalene and TRPH concentrations that were detected in the groundwater samples. The outlines of these plumes are based on their respective GCTLs.

Mr. David Grabka  
FDEP  
September 6, 2002 - Page 3

CEF-815-1S was sampled twice and, in both cases, the naphthalene concentration was greater than the second year milestone objective. Both results are greater than the MOP action level, but the results of the second sampling event is only slightly greater than the action level. The concentration of naphthalene in CEF-815-3S increased significantly compared to previous measurements (Table 3). Based on the increase in the naphthalene concentration in CEF-815-3S, the size of the naphthalene plume may have increased slightly.

The TRPH concentration in CEF-815-1S in the June sampling event is greater than the second year milestone objective, but is less than the milestone objective in the July sampling event. The TRPH concentration in CEF-815-3S increased slightly. Based on the increase in the TRPH concentration in CEF-815-3S, the size of the TRPH plume also appears to have increased. The increase in TRPH concentration was unexpected since the concentration had been observed to be decreasing over the previous events (Table 3).

No significant changes were observed in samples from NG-12S and NG-14S, which are downgradient of the areas of high contaminant concentrations.

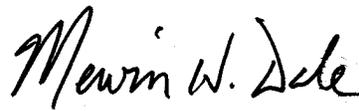
The changes in the concentrations of naphthalene and TRPH in CEF-815-1S and CEF-815-3S may be a result of a transient condition. The high concentrations in CEF-815-3S may be attributable to the relatively high concentration of suspended solids. Prior to this sampling event, the contaminant concentrations had been not increasing significantly and, in many cases, had been decreasing.

Although contaminant concentrations in CEF-815-1S and CEF-815-3S increased, no significant increases were observed in the downgradient well. The second year milestone objectives were not reached in all wells, but the results may only indicate a transient condition as suggested by the decrease in the concentrations in CEF-815-1S for the July sampling event. Therefore, TtNUS recommends that semi-annual monitoring be continued for at least one more year.

The next semi-annual sampling event is scheduled for December 2002. If you have any questions with regard to this submittal, or if we can be of assistance in any way, please contact Paul Calligan at (813) 806-0202.

Sincerely,

Paul Calligan, P. G.  
Task Order Manager



Mervin W. Dale, P. G.  
Florida Professional Geologist  
P.G. Number 1917



JWL/

Attachments (9)

cc: Wayne Hansel, SOUTHNAVFACENGCOM  
D. Wroblewski, TtNUS (cover letter only)  
M. Perry, TtNUS/ File CTO 209 (unbound)

## TABLES

**Table 1  
Water Table Elevation Data**

**Groundwater Monitoring Report  
Building 815 Wash Rack Area  
Former Naval Air Station Cecil Field  
Jacksonville, Florida**

Monitoring Well Identification	Well Depth (feet, BTOC)	Top of Casing Elevation (feet, msl)	May 1, 2001		December 17, 2001		June 19, 2002	
			Depth to Water (feet, BTOC)	Water-Level Elevation (feet, msl)	Depth to Water (feet, BTOC)	Water-Level Elevation (feet, msl)	Depth to Water (feet, BTOC)	Water-Level Elevation (feet, msl)
CEF-815-1S	13.10	75.56	6.12	69.44	5.40	70.16	6.41	69.15
CEF-815-2S	14.00	75.60	5.92	69.68	5.14	70.46	6.86	68.74
CEF-815-3S	12.90	75.64	6.53	69.11	5.82	69.82	6.78	68.86
CEF-815-4S	14.00	75.75	6.85	68.90	6.24	69.51	7.07	68.68
NG-02S	14.00	76.39	6.79	69.60	5.81	70.58	6.85	69.54
NG-12S	13.40	75.69	6.39	69.30	5.63	70.06	6.68	69.01
NG-13S	14.00	76.04	6.46	69.58	5.66	70.38	6.78	69.26
NG-14S	14.00	75.71	6.69	69.02	6.03	69.68	6.95	68.76
NG-26S	14.25	75.84	6.26	69.58	5.57	70.27	6.58	69.26

Notes: msl - mean sea level.

BTOC - below top of casing.

NM - not measured.

**Table 2  
Summary of Detections**

**Groundwater Monitoring Report  
Building 815 Wash Rack Area  
Former Naval Air Station Cecil Field  
Jacksonville, Florida**

Compound of Concern	Contaminated Wells				Perimeter Monitoring Wells		Action Levels for Contaminated Wells/ Perimeter Wells	Milestone Objectives for CEF-815-1S and NG-12S after the First Year	Milestone Objectives for CEF-815-1S and NG-12S after the Second Year	NADSC <sup>1</sup> / GCTL <sup>2</sup>
	CEF-815-1S	CEF-815-1S	NG-12S	CEF-815-3S	NG-14S	NG-26S				
Date Sampled	6/19/2002	7/17/2002	6/19/2002	6/19/2002	6/19/2002	6/19/2002				
<b><u>Polynuclear Aromatic Hydrocarbons (µg/L)</u></b>										
Naphthalene	<b>299</b>	<b>205</b>	3.4	<b>54.8</b>	1.0 J	3.9/4.1	200/20	145	113	200/20
<b><u>Total Recoverable Petroleum Hydrocarbons (mg/L)</u></b>										
TRPH	<b>22.7</b>	<b>16.3</b>	1.59	<b>5.48</b>	0.953	2.19/1.73	50/5	28	22	50/5

Notes:

Values exceeding milestones, NADSC, or GCTL, are in bold.

<sup>1</sup>NADSC - Natural Attenuation Default Source Concentrations as promulgated in Chapter 62-770.690.

<sup>2</sup>GCTL - Groundwater Cleanup Target Levels based on Chapter 62-770, Florida Administrative Code.

NS - not sampled

J - estimated value.

/ - denotes duplicate results

µg/L - micrograms per liter

mg/L - milligrams per liter

**Table 3  
Historical Analytical Data**

**Groundwater Monitoring Report  
Building 815 Wash Rack Area  
Former Naval Air Station Cecil Field  
Jacksonville, Florida  
Page 1 of 6**

Monitoring Well ID Sample Number	FDEP GCTL FAC 62-777	CEF-815-1S						
		815-GW-1S-01	815-1S-01	815-1S-02	815-1S-02A	815-GW-1S-03	815-GW-1S-04	815-GW-1S-04A
Sample Date		8-Oct-99	6-Nov-00	1-May-01	22-May-01	17-Dec-01	19-Jun-02	17-Jul-02
Well Depth, Feet		14	14	14	14	14	14	14
<b><u>Volatile Organic Compounds (µg/L)</u></b>								
cis-1,2-dichloroethene	70	1 U	NS	NS	NS	NS	NS	NS
trans-1,2-dichloroethene	100	1 U	NS	NS	NS	NS	NS	NS
Trichloroethene	3	1 U	NS	NS	NS	NS	NS	NS
Vinyl Chloride	1	1 U	NS	NS	NS	NS	NS	NS
Xylenes - Total	20	0.94 J	NS	NS	NS	NS	NS	NS
<b><u>Polynuclear Aromatic Hydrocarbons (µg/L)</u></b>								
1-Methylnaphthalene	20	12	14.8	NA	NA	NA	NA	NA
2-Methylnaphthalene	20	17	18	NA	NA	NA	NA	NA
Acenaphthene	20	13	4.4 U	NA	NA	NA	NA	NA
Acenaphthylene	210	3.8	4.4 U	NA	NA	NA	NA	NA
Fluorene	280	4.9	2.2 U	NA	NA	NA	NA	NA
Naphthalene	20	177	192	250	248	129	299	205
Phenanthrene	210	15.2	2.2 U	NA	NA	NA	NA	NA
<b><u>Total Recoverable Petroleum Hydrocarbons (mg/L)</u></b>								
TRPH (C8-C40)	5	34	21	16.8	NS	15.5	22.7	16.3

See notes at end of table.

**Table 3  
Historical Analytical Data**

**Groundwater Monitoring Report  
Building 815 Wash Rack Area  
Former Naval Air Station Cecil Field  
Jacksonville, Florida  
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Monitoring Well ID Sample Number	FDEP GCTL FAC 62-777	CEF-815-3S						
		815-GW-3S-01	815-3S-01	815-DUP1-01	815-3S-01A	815-3S-02	815-GW-3S-03	815-GW-3S-04
Sample Date		7-Oct-99	6-Nov-00	6-Nov-00	11-Dec-00	1-May-01	17-Dec-01	19-Jun-02
Well Depth, Feet		13	13	13	13	13	13	13
<b><u>Volatile Organic Compounds (µg/L)</u></b>								
cis-1,2-dichloroethene	70	1 UJ	NS	NS	NS	NS	NS	NS
trans-1,2-dichloroethene	100	1 UJ	NS	NS	NS	NS	NS	NS
Trichloroethene	3	1 UJ	NS	NS	NS	NS	NS	NS
Vinyl Chloride	1	1 UJ	NS	NS	NS	NS	NS	NS
Xylenes - Total	20	3 UJ	NS	NS	NS	NS	NS	NS
<b><u>Polynuclear Aromatic Hydrocarbons (µg/L)</u></b>								
1-Methylnaphthalene	20	1 UJ	2.2 U	2 U	2.2 U	NA	NA	NA
2-Methylnaphthalene	20	1 UJ	2.2 U	2 U	2.2 U	NA	NA	NA
Acenaphthene	20	1 UJ	4.4 U	4 U	4.4 U	NA	NA	NA
Acenaphthylene	210	2 J	4.4 U	4 U	4.4 U	NA	NA	NA
Fluorene	280	1 UJ	2.2 U	2 U	2.2 U	NA	NA	NA
Naphthalene	20	12.5 J	<b>22.9</b>	<b>21.9</b>	<b>25.6</b>	<b>25</b>	<b>28.1</b>	<b>54.8</b>
Phenanthrene	210	1.3 J	2.2 U	2 U	2.2 U	NA	NA	NA
<b><u>Total Recoverable Petroleum Hydrocarbons (mg/L)</u></b>								
TRPH (C8-C40)	5	3.82	4.57	2.9	NS	2.07	1.38	<b>5.48</b>

See notes at end of table.

**Table 3  
Historical Analytical Data**

**Groundwater Monitoring Report  
Building 815 Wash Rack Area  
Former Naval Air Station Cecil Field  
Jacksonville, Florida  
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Monitoring Well ID Sample Number	FDEP GCTL FAC 62-777	NG-12S					
		815-GW- FLSMW12-01	815-12S-01	815-12S-02	815-DUP1-02	NG-GW-12S-03	NG-GW-12S-04
Sample Date		8-Oct-99	6-Nov-00	1-May-01	1-May-01	17-Dec-01	19-Jun-02
Well Depth, Feet		14	14	14	14	14	14
<b><u>Volatile Organic Compounds (µg/L)</u></b>							
cis-1,2-dichloroethene	70	1 U	NS	NS	NS	NS	NS
trans-1,2-dichloroethene	100	1 U	NS	NS	NS	NS	NS
Trichloroethene	3	1 U	NS	NS	NS	NS	NS
Vinyl Chloride	1	1 U	NS	NS	NS	NS	NS
Xylenes - Total	20	3 U	NS	NS	NS	NS	NS
<b><u>Polynuclear Aromatic Hydrocarbons (µg/L)</u></b>							
1-Methylnaphthalene	20	1 U	2.2 U	NA	NA	NA	NA
2-Methylnaphthalene	20	1 U	2.2 U	NA	NA	NA	NA
Acenaphthene	20	1 U	4.4 U	NA	NA	NA	NA
Acenaphthylene	210	3	4.4 U	NA	NA	NA	NA
Fluorene	280	1 U	2.2 U	NA	NA	NA	NA
Naphthalene	20	4.4	9.2	8.2	8.0	7.1	3.4
Phenanthrene	210	1 U	2.2 U	NA	NA	NA	NA
<b><u>Total Recoverable Petroleum Hydrocarbons (mg/L)</u></b>							
TRPH (C8-C40)	5	12	4.2	3.12	3.35	2.18	1.59

See notes at end of table.

**Table 3  
Historical Analytical Data**

**Groundwater Monitoring Report  
Building 815 Wash Rack Area  
Former Naval Air Station Cecil Field  
Jacksonville, Florida  
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Monitoring Well ID Sample Number	FDEP GCTL FAC 62-777	NG-14S			
		815-GW- FLSMW14-01	815-GW- FLSMW14-01	NG-GW-14S-03	NG-GW-14S-04
Sample Date		8-Oct-99	1-May-01	17-Dec-01	19-Jun-02
Well Depth, Feet		14	14	14	14
<b><u>Volatile Organic Compounds (µg/L)</u></b>					
cis-1,2-dichloroethene	70	1 U	NS	NS	NS
trans-1,2-dichloroethene	100	1 U	NS	NS	NS
Trichloroethene	3	1 U	NS	NS	NS
Vinyl Chloride	1	1 U	NS	NS	NS
Xylenes - Total	20	3 U	NS	NS	NS
<b><u>Polynuclear Aromatic Hydrocarbons (µg/L)</u></b>					
1-Methylnaphthalene	20	NS	NA	NA	NA
2-Methylnaphthalene	20	NS	NA	NA	NA
Acenaphthene	20	NS	NA	NA	NA
Acenaphthylene	210	NS	NA	NA	NA
Fluorene	280	NS	NA	NA	NA
Naphthalene	20	NS	8.2	<2.0	1.0 J
Phenanthrene	210	NS	NA	NA	NA
<b><u>Total Recoverable Petroleum Hydrocarbons (mg/L)</u></b>					
TRPH (C8-C40)	5	NS	3.12	0.547	0.953

See notes at end of table.

**Table 3  
Historical Analytical Data**

**Groundwater Monitoring Report  
Building 815 Wash Rack Area  
Former Naval Air Station Cecil Field  
Jacksonville, Florida  
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Monitoring Well ID Sample Number	FDEP GCTL FAC 62-777	NG-26S						
		815-GW-NG-26S-02	NG-26S-01	NG-26S-02	NG-26S-02A	NG-GW-26S-03	NG-GW-26S-04	NG-GW-DU01-04
Sample Date		21-Feb-00	6-Nov-00	1-May-01	22-May-01	17-Dec-01	19-Jun-02	19-Jun-02
Well Depth, Feet		14	14	14	14	14	14	14
<b>Volatiles Organic Compounds (µg/L)</b>								
cis-1,2-dichloroethene	70	1 U	NS	NS	NS	NS	NS	NS
trans-1,2-dichloroethene	100	1 U	NS	NS	NS	NS	NS	NS
Trichloroethene	3	1 U	NS	NS	NS	NS	NS	NS
Vinyl Chloride	1	1 U	NS	NS	NS	NS	NS	NS
Xylenes - Total	20	3 U	NS	NS	NS	NS	NS	NS
<b>Polynuclear Aromatic Hydrocarbons (µg/L)</b>								
1-Methylnaphthalene	20	2.2 U	2.2 U	NA	NS	NA	NA	NA
2-Methylnaphthalene	20	2.2 U	2.2 U	NA	NS	NA	NA	NA
Acenaphthene	20	2.2 U	4.4 U	NA	NS	NA	NA	NA
Acenaphthylene	210	2.2 U	4.4 U	NA	NS	NA	NA	NA
Fluorene	280	2.2 U	2.2 U	NA	NS	NA	NA	NA
Naphthalene	20	10.9	4.9	7.6	NS	<2.0	3.9	4.1
Phenanthrene	210	2.2 U	2.2 U	NA	NS	NA	NA	NA
<b>Total Recoverable Petroleum Hydrocarbons (mg/L)</b>								
TRPH (C8-C40)	5	2.62	3.85	7.10	6.04	1.36	2.19	1.73

See notes at end of table.

**Table 3  
Historical Analytical Data**

**Groundwater Monitoring Report  
Building 815 Wash Rack Area  
Former Naval Air Station Cecil Field  
Jacksonville, Florida  
Page 6 of 6**

Monitoring Well ID Sample Number	FDEP GCTL FAC 62-777	CEF-815-2S	CEF-815-4S		NG-02S	NG-12I	NG-13S
		815-GW-2S-01	815-GW-4S-02	815-GW-4S-03	815-GW-NG-02S-02	815-GW-FLIMW12-01	815-GW-NG13S-02
Sample Date		8-Oct-99	18-Feb-00	11-May-00	21-Feb-00	8-Oct-99	18-Feb-00
Well Depth, Feet		15	14	14	14	38	14
<b><u>Volatile Organic Compounds (ug/L)</u></b>							
cis-1,2-dichloroethene	70	1 U	6.9	6.3	1 U	1 U	1 U
trans-1,2-dichloroethene	100	1 U	3	1.8	1 U	1 U	1 U
Trichloroethene	3	1 U	2.3	1.7	1 U	1 U	1 U
Vinyl Chloride	1	1 U	1.3	0.64 J	1 U	1 U	1 U
Xylenes - Total	20	3 U	3 U	3 U	3 U	3 U	3 U
<b><u>Polynuclear Aromatic Hydrocarbons (ug/L)</u></b>							
1-Methylnaphthalene	20	1.4	1 U	NS	2.2 U	1 U	1 U
2-Methylnaphthalene	20	1.8	1 U	NS	2.2 U	1 U	1 U
Acenaphthene	20	3.2	1 U	NS	2.2 U	1 U	1 U
Acenaphthylene	210	1.1	1 U	NS	2.2 U	1 U	1 U
Fluorene	280	1.1	1 U	NS	2.2 U	1 U	1 U
Naphthalene	20	55	1 U	NS	2.2 U	1 U	1 U
Phenanthrene	210	4.1	1 U	NS	2.2 U	1 U	1 U
<b><u>Total Recoverable Petroleum Hydrocarbons (mg/L)</u></b>							
TRPH (C8-C40)	5	4.5	0.396	NS	0.418	0.5 U	0.41

Notes:

GCTL - Groundwater Cleanup Target Level

Shaded values are greater than GCTL

All sample numbers have a prefix "CEF-".

ug/L - micrograms per liter

mg/L - milligrams per liter

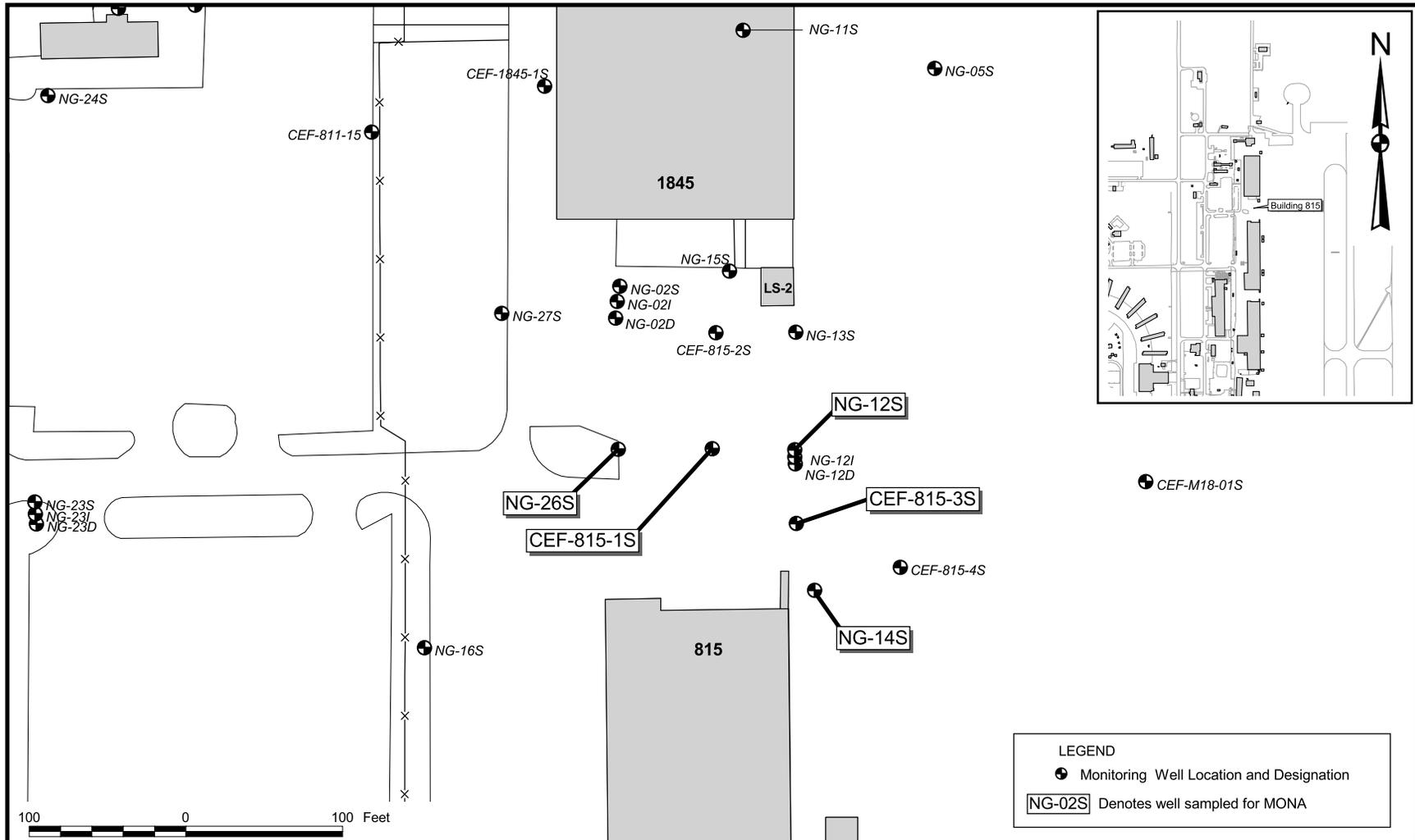
NA - not analyzed

NS - not sampled

U - undetected at reporting limit shown

J - laboratory estimated value

## FIGURES



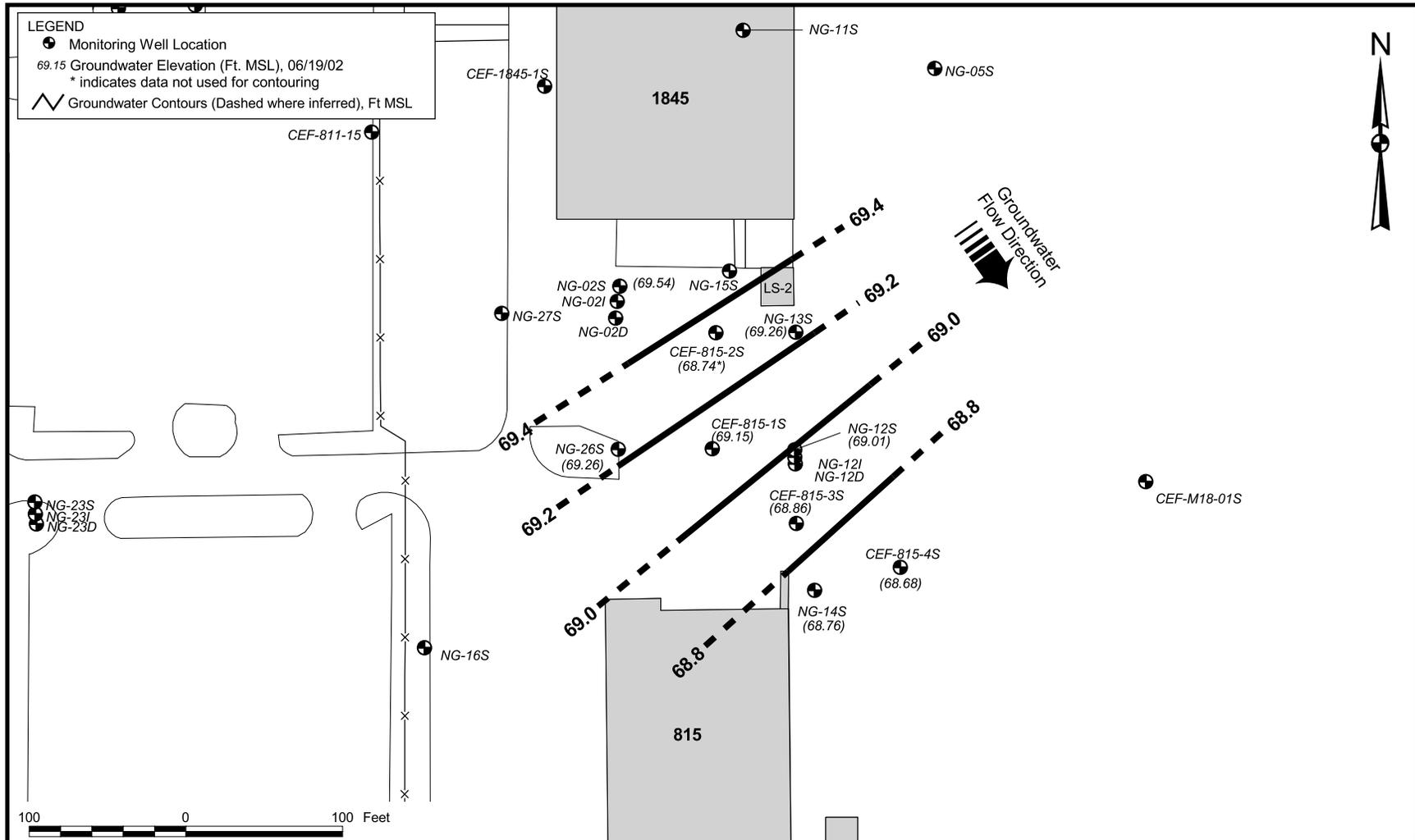
**LEGEND**  
 ● Monitoring Well Location and Designation  
 [NG-02S] Denotes well sampled for MONA

DRAWN BY	DATE
MJJ	20Dec99
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	

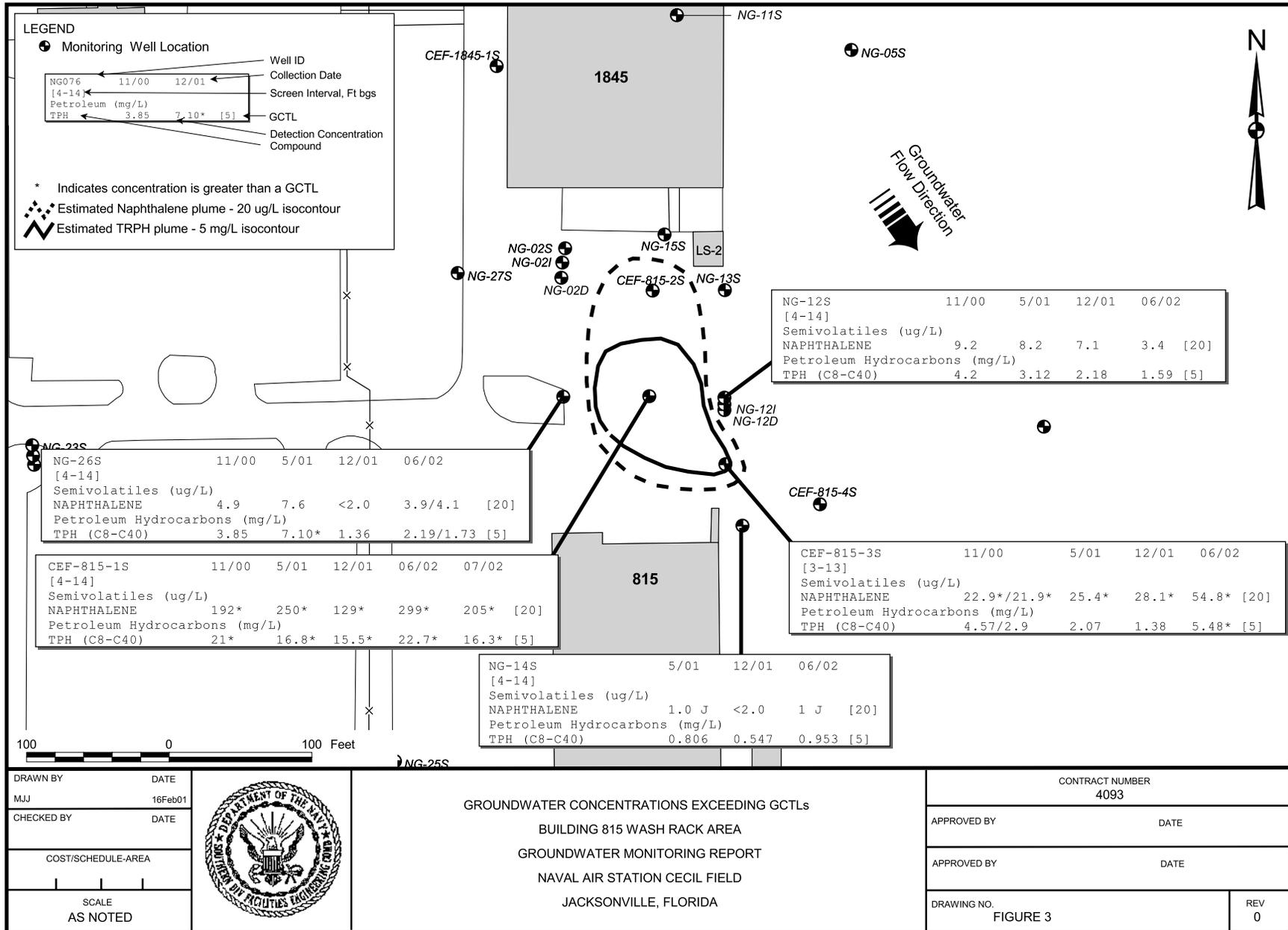


**SITE PLAN**  
 BUILDING 815 WASH RACK AREA  
 GROUNDWATER MONITORING REPORT  
 NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA

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



DRAWN BY MJJ CHECKED BY COST/SCHEDULE-AREA SCALE AS NOTED	DATE 16Feb01 DATE DATE DATE DATE		GROUNDWATER FLOW MAP BUILDING 815 WASH RACK AREA GROUNDWATER MONITORING REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 4093
				APPROVED BY _____ DATE _____ APPROVED BY _____ DATE _____
			DRAWING NO. FIGURE 2	REV 0



GROUNDWATER CONCENTRATIONS EXCEEDING GCTLs  
 BUILDING 815 WASH RACK AREA  
 GROUNDWATER MONITORING REPORT  
 NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA

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

**ATTACHMENT A**  
**FDEP MOP APPROVAL ORDER**



# Department of Environmental Protection

Jeb Bush  
Governor

Twin Towers Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

David B. Struhs  
Secretary

August 31, 2000

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Commanding Officer  
Mr. Nick Ugolini, Code 1843  
SOUTHNAVFACENGCOM  
Post Office Box 190010  
North Charleston, SC 29419-9010

RE: Site Assessment Report and Monitoring Only Proposal for  
Building 815 Wash Rack Area, Naval Air Station Cecil Field,  
Florida.

Dear Mr. Ugolini:

I have reviewed the Site Assessment Report and Monitoring  
Only Proposal for Natural Attenuation dated August 2000 (received  
August 11, 2000), submitted for this site. Based upon my review  
and comments, the enclosed Monitoring Only Plan for Natural  
Attenuation was signed by Mr. Doug A. Jones, Chief, Bureau of  
Waste Cleanup.

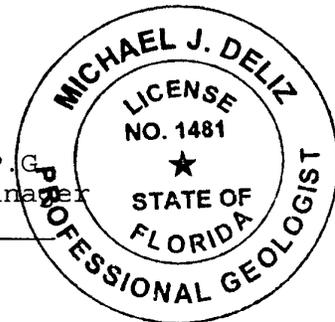
If I can be of any further assistance with this matter,  
please contact me at (850) 921-9991.

Sincerely,

*Michael J. Deliz*

Michael J. Deliz, P.G.  
Remedial Project Manager  
31-446-00

Date



CC: Debbie Vaughn-Wright, USEPA  
John Flowe, City of Jacksonville  
Scott Glass, SOUTHNAVFACENGCOM  
Mark Speranza, TtNUS Pittsburgh

TJB T JJC JE ESN ESN

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# Department of Environmental Protection

Jeb Bush  
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2600 Blair Stone Road  
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Secretary

August 31, 2000

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Commanding Officer  
Mr. Nick Ugolini, Code 1843  
SOUTHNAVFACENGCOM  
Post Office Box 190010  
North Charleston, South Carolina 29419-9010

Subject: Natural Attenuation Monitoring Plan Approval Order  
Building 815 Wash Rack Area  
Naval Air Station Cecil Field, Florida

Dear Mr. Ugolini:

The Bureau of Waste Cleanup has completed the review of the Site Assessment Report Addendum and Natural Attenuation Monitoring Plan dated August 2000 (received August 11, 2000) submitted for this site. Pursuant to Rule 62-770.690, Florida Administrative Code (F.A.C.), the Department of Environmental Protection approves the Natural Attenuation Monitoring Plan. Pursuant to Rule 62-770.690(7), F.A.C., you are required to complete the monitoring program outlined below. The first sampling event should be performed within 60 days of receipt of this Natural Attenuation Monitoring Plan Approval Order (Order). Water-level measurements should be made immediately prior to each sampling event. The analytical results (laboratory report), chain of custody, cumulative summary table of the analytical results, site map(s) illustrating the most recent analytical results, and the water-level elevation information (cumulative summary table and most recent flow interpretation map), should be submitted to the Department within 60 days of sample collection.

<u>Monitoring Wells</u>	<u>Contaminants of Concern</u>	<u>Frequency</u>	<u>Duration</u>
CEF-815-1S, CEF-815-3S, NG-12S, and NG 26S	Naphthalene and TRPH	Semi-annual	Five Years

If concentrations of chemicals of concern in any of the designated wells increase above the action levels listed below, the well or wells must be resampled no later than 30 days after the

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Mr. Nick Ugolini  
Page Two  
August 31, 2000

initial positive results are known. If the results of the resampling confirm the initial sampling results, then a proposal must be submitted, as described in Rule 62-770.690(7)(f), F.A.C.

Contaminated wells:

CEF-815-1S and NG-12S: 200 µg/l Napthalene and 50 mg/ TRPH

Perimeter wells:

CEF-815-3S and NG 26S: 20 µg/l Napthalene and 50 mg/ TRPH

The approved Remedial Action by Natural Attenuation monitoring period is 5 years. "Milestone" objectives should be established if monitoring is projected to take greater than one year. The following are the "milestone" objectives that will be used for annual evaluation of remediation progress by natural attenuation. An explanation of the progress relative to these milestone objectives, and the need for corrective action (if applicable), should be provided in the annual evaluation:

<u>Napthalene</u>	<u>CEF-815-1S</u>	<u>NG-12S</u>
End of year 1	145 µg/l	145 µg/l
End of year 2	113 µg/l	113 µg/l
End of year 3	81 µg/l	81 µg/l
End of year 4	49 µg/l	49 µg/l
End of year 5	<20 µg/l	<20 µg/l

<u>TRPH</u>	<u>CEF-815-1S</u>	<u>NG-12S</u>
End of year 1	28 mg/l	28 mg/l
End of year 2	22 mg/l	22 mg/l
End of year 3	16 mg/l	16 mg/l
End of year 4	10 mg/l	10 mg/l
End of year 5	<5 mg/l	<5 mg/l

If the applicable No Further Action criteria in Rule 62-770.680, F.A.C., are met at the end of the monitoring period, a Site Rehabilitation Completion Report, summarizing the monitoring program and containing documentation supporting the opinion that the cleanup objectives have been achieved, should be submitted as required in Rule 62-770.690(8), F.A.C. If the applicable No Further Action criteria in Rule 62-770.680, F.A.C., are not met following five years of monitoring, then a report summarizing the monitoring program should be submitted, including a proposal as described in Rule 62-770.690(7)(g), F.A.C..

Mr. Nick Ugolini  
Page Three  
August 31, 2000

### Legal Issues

The Department's Order shall become final unless a timely petition for an administrative proceeding (hearing) is filed under Sections 120.569 and 120.57, Florida Statutes (F.S.), within 21 days of receipt of this Order. The procedures for petitioning for a hearing are set forth below.

Persons affected by this Order have the following options:

If you choose to accept the above decision by the Department about the Site Assessment Report Addendum and Natural Attenuation Monitoring Plan you do not have to do anything. This Order is final and effective as of the date on the top of the first page of this Order.

If you disagree with the decision, you may do one of the following:

1. File a petition for administrative hearing with the Department's Office of General Counsel within 21 days of receipt of this Order; or
2. File a request for an extension of time to file a petition for hearing with the Department's Office of General Counsel within 21 days of receipt of this Order. Such a request should be made if you wish to meet with the Department in an attempt to informally resolve any disputes without first filing a petition for hearing.

Please be advised that mediation of this decision pursuant to Section 120.573, Florida Statutes (F.S.), is not available.

### How to Request an Extension of Time to File a Petition for Hearing

For good cause shown, pursuant to Rule 62-110.106(4), F.A.C., the Department may grant a request for an extension of time to file a petition for hearing. Such a request must be filed (received) in the Department's Office of General Counsel at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, within 21 days of receipt of this Order. Petitioner, if different from Commanding Officer, SOUTHNAVENGCOM, shall mail a copy of the request to Commanding Officer, SOUTHNAVENGCOM at the time of filing. Timely filing a request for an extension of time tolls the time period within which a petition for administrative hearing must be made.

### How to File a Petition for Administrative Hearing

A person whose substantial interests are affected by this Order may petition for an administrative hearing under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000,

Mr. Nick Ugolini  
Page Four  
August 31, 2000

within 21 days of receipt of this Order. Petitioner, if different from Commanding Officer, SOUTHNAVENGCOM, shall mail a copy of the petition to Commanding Officer, SOUTHNAVENGCOM at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under Sections 120.569 and 120.57, F.S.

Pursuant to Section 120.54(5)(b)4.a., F.S. (1998, Supp.), and Rule 28-106.201, F.A.C., a petition for administrative hearing shall contain the following information:

- a) The name, address, and telephone number of each petitioner, the name, address, and telephone number of the petitioner's representative, if any, the site owner's name and address, if different from the petitioner, the FDEP facility number, and the name and address of the facility;
- b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- c) An explanation of how each petitioner's substantial interests are or will be affected by the Department's action or proposed action;
- d) A statement of the material facts disputed by the petitioner, or a statement that there are no disputed facts;
- e) A statement of the ultimate facts alleged, including a statement of the specific facts the petitioner contends warrant reversal or modification of the Department's action or proposed action;
- f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the Department's action or proposed action; and
- g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the Department to take with respect to the Department's action or proposed action.

This Order is final and effective as of the date on the top of the first page of this Order. Timely filing a petition for administrative hearing postpones the date this Order takes effect until the Department issues either a final order pursuant to an administrative hearing or an order responding to supplemental information provided pursuant to meetings with the Department.

#### Judicial Review

Any party to this Order has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days after this Order is filed with the clerk of the Department (see below).

Mr. Nick Ugolini  
Page Five  
August 31, 2000

Questions

Any questions regarding the Department's review of your Site Assessment Report Addendum and Natural Attenuation Monitoring Plan should be directed to Michael J. Deliz, P.G. at (850) 921-9991. Questions regarding legal issues should be referred to the Department's Office of General Counsel at (850) 488-9314. Contact with any of the above does not constitute a petition for administrative hearing or request for an extension of time to file a petition for administrative hearing.

Sincerely,



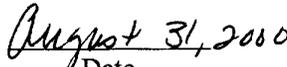
Douglas A. Jones, Chief  
Bureau of Waste Cleanup  
Division of Waste Management

DAJ/mjd

cc: Scott Glass, SOUTHNAVFACENGCOM  
Mark Speranza, TtNUS, Pittsburgh

FILING AND ACKNOWLEDGMENT  
FILED, on this date, pursuant to  
§120.52 Florida Statutes, with the  
designated Department Clerk, receipt  
of which is hereby acknowledged.

  
Clerk

  
Date

**ATTACHMENT B**

**BCT MEETING MINUTES NO. 1347**

# NASCF Partnering Team Meeting Attendance Record

16-Jan-01 BCT

---

<u>16-Jan-01</u>	BCT	Davidson	12:53
		Glass	12:53
		Grabka	12:53
		Ross	12:53
		Speranza	12:53
		Stephanie	12:55
		Vaughn-Wright	12:53
	BRE	Jonnet	12:55
		Miller	12:55
		Simcik	12:55

---

**Minute No.** 1347  
17-Jan-01  
**Topic:** Evaluation  
**Program** TANKS  
**Site:** Pet. Update  
**Presenter** BRE  
Logan  
**Actions/Decisions:**

NFF

95% complete. 131,000 tons of contaminated soil have been sent off-site. 60,000 tons of clean soil have been placed back in the excavation.

A groundwater investigation will be conducted this summer using DPTs.

Day Tank 1 Soils

RAP set two step cleanup in 1997 prior to current regulations. TRPH at 380 mg/kg. If above that concentration then BTEX was evaluated.

RAP criteria met industrial standards of today but not leachability.

The three soil sample locations met RAP criteria but are above the current TRPH industrial criteria and leachability. These locations are at 5 to 7 feet bls.

Building 9 - system started on 1/9/01

Building 46 - system to start on 1/18/01

103rd Street Digs

Two sites will need excavation. Institutional controls will be reconsidered for five other sites.

Wesconnet Blvd - waiting for DOT Right of Way Permit to continue the investigation.

ATSDR is concerned about historical leaks mentioned in the work plan and that the pipe was repaired. However there is no known information on environmental work.

Navy is unaware of any other leaks.

Building 428 Well Replacement

Wells accidentally destroyed. Wells were re-installed the week of Jan. 15, 2001. First round of sampling is pending.

Tanks 860 A/B/D SAR addendum

Source removal left some contaminated soil in place. A MONA will be implemented in several weeks.

Building G82 SAR

Several feet of soil was left in place. Two SPLP soil samples exceeded groundwater criteria. Institutional control will maintain industrial use and maintain good condition of concrete slab.

Groundwater will have a MONA.

Building 815 Sampling - Napthalene was detected in downgradient well at concentration greater than GCTL. Therefore another POC well will be required. Existing Well 14S will be selected. Next semiannual sampling event will be in May.

**ATTACHMENT C**  
**GROUNDWATER ANALYTICAL REPORTS**

### Sample Summary

Tetra Tech, NUS

Job No: F13627

NAS Cecil Field-CTO-209  
Project No: N4093-B.815

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F13627-1	06/19/02	11:00 RS	06/20/02	AQ	Ground Water	CEF-815-GW-3S-04
F13627-2	06/19/02	00:00 RS	06/20/02	AQ	Ground Water	CEF-NG-GW-DU01-04
F13627-3	06/19/02	10:50 RS	06/20/02	AQ	Ground Water	CEF-NG-GW-14S-04
F13627-4	06/19/02	13:20 RS	06/20/02	AQ	Ground Water	CEF-NG-GW-12S-04
F13627-5	06/19/02	13:35 RS	06/20/02	AQ	Ground Water	CEF-815-GW-1S-04
F13627-6	06/19/02	14:30 RS	06/20/02	AQ	Ground Water	CEF-NG-GW-26S-04

## Report of Analysis

<b>Client Sample ID:</b> CEF-815-GW-3S-04 <b>Lab Sample ID:</b> F13627-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 8310 SW846 3510C <b>Project:</b> NAS Cecil Field-CTO-209	<b>Date Sampled:</b> 06/19/02 <b>Date Received:</b> 06/20/02 <b>Percent Solids:</b> n/a
---	---

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	EE008774.D	2	06/28/02	MRE	06/21/02	OP5351	GEE411
Run #2							

	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2		

### Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
91-20-3	Naphthalene	54.8	4.3	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	92%		33-141%	
92-94-4	p-Terphenyl	87%		31-122%	

(a) All hits confirmed by spectral match using a diode array detector.

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> CEF-815-GW-3S-04 <b>Lab Sample ID:</b> F13627-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> FLORIDA-PRO SW846 3510C <b>Project:</b> NAS Cecil Field-CTO-209	<b>Date Sampled:</b> 06/19/02 <b>Date Received:</b> 06/20/02 <b>Percent Solids:</b> n/a
--	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP21493.D	5	06/25/02	SKW	06/21/02	OP5355	GOP795
Run #2							

Run #	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	5.48	1.3	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	96%		55-130%	

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> CEF-NG-GW-DU01-04	
<b>Lab Sample ID:</b> F13627-2	<b>Date Sampled:</b> 06/19/02
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 06/20/02
<b>Method:</b> EPA 8310 SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> NAS Cecil Field-CTO-209	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	EE008775.D	1	06/28/02	MRE	06/21/02	OP5351	GEE411
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

**Polynuclear Aromatic Hydrocarbons**

CAS No.	Compound	Result	RL	Units	Q
91-20-3	Naphthalene	4.1	2.1	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	118%		33-141%	
92-94-4	p-Terphenyl	87%		31-122%	

(a) All hits confirmed by spectral match using a diode array detector.

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> CEF-NG-GW-DU01-04 <b>Lab Sample ID:</b> F13627-2 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> FLORIDA-PRO SW846 3510C <b>Project:</b> NAS Cecil Field-CTO-209	<b>Date Sampled:</b> 06/19/02 <b>Date Received:</b> 06/20/02 <b>Percent Solids:</b> n/a
---	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP21481.D	1	06/25/02	SKW	06/21/02	OP5355	GOP794
Run #2							

Run #	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	1.73	0.27	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	102%		55-130%	

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> CEF-NG-GW-14S-04	<b>Date Sampled:</b> 06/19/02
<b>Lab Sample ID:</b> F13627-3	<b>Date Received:</b> 06/20/02
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 8310 SW846 3510C	
<b>Project:</b> NAS Cecil Field-CTO-209	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	EE008776.D	1	06/28/02	MRE	06/21/02	OP5351	GEE411
Run #2							

	Initial Volume	Final Volume
Run #1	900 ml	1.0 ml
Run #2		

**Polynuclear Aromatic Hydrocarbons**

CAS No.	Compound	Result	RL	Units	Q
91-20-3	Naphthalene	1.0	2.2	ug/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	67%		33-141%	
92-94-4	p-Terphenyl	79%		31-122%	

(a) All hits confirmed by spectral match using a diode array detector.

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> CEF-NG-GW-14S-04 <b>Lab Sample ID:</b> F13627-3 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> FLORIDA-PRO SW846 3510C <b>Project:</b> NAS Cecil Field-CTO-209	<b>Date Sampled:</b> 06/19/02 <b>Date Received:</b> 06/20/02 <b>Percent Solids:</b> n/a
--	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP21482.D	1	06/25/02	SKW	06/21/02	OP5355	GOP794
Run #2							

Run #	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	0.953	0.26	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	92%		55-130%	

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> CEF-NG-GW-12S-04 <b>Lab Sample ID:</b> F13627-4 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 8310 SW846 3510C <b>Project:</b> NAS Cecil Field-CTO-209	<b>Date Sampled:</b> 06/19/02 <b>Date Received:</b> 06/20/02 <b>Percent Solids:</b> n/a
---	---

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	EE008735.D	1	06/27/02	MRE	06/21/02	OP5351	GEE410
Run #2							

	Initial Volume	Final Volume
Run #1	920 ml	1.0 ml
Run #2		

**Polynuclear Aromatic Hydrocarbons**

CAS No.	Compound	Result	RL	Units Q
91-20-3	Naphthalene	3.4	2.0	ug/l

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	64%		33-141%
92-94-4	p-Terphenyl	81%		31-122%

(a) All hits confirmed by spectral match using a diode array detector.

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> CEF-NG-GW-12S-04 <b>Lab Sample ID:</b> F13627-4 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> FLORIDA-PRO SW846 3510C <b>Project:</b> NAS Cecil Field-CTO-209	<b>Date Sampled:</b> 06/19/02 <b>Date Received:</b> 06/20/02 <b>Percent Solids:</b> n/a
--	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP21483.D	1	06/25/02	SKW	06/21/02	OP5355	GOP794
Run #2							

Run #	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	1.59	0.26	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	95%		55-130%	

**ND = Not detected**  
**RL = Reporting Limit**  
**E = Indicates value exceeds calibration range**

**J = Indicates an estimated value**  
**B = Indicates analyte found in associated method blank**  
**N = Indicates presumptive evidence of a compound**

## Report of Analysis

<b>Client Sample ID:</b> CEF-815-GW-1S-04 <b>Lab Sample ID:</b> F13627-5 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 8310 SW846 3510C <b>Project:</b> NAS Cecil Field-CTO-209	<b>Date Sampled:</b> 06/19/02 <b>Date Received:</b> 06/20/02 <b>Percent Solids:</b> n/a
---	---

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	EE008778.D	8	06/28/02	MRE	06/21/02	OP5351	GEE411
Run #2							

	Initial Volume	Final Volume
Run #1	870 ml	1.0 ml
Run #2		

**Polynuclear Aromatic Hydrocarbons**

CAS No.	Compound	Result	RL	Units Q
91-20-3	Naphthalene	299	18	ug/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	132%		33-141%
92-94-4	p-Terphenyl	64%		31-122%

(a) All hits confirmed by spectral match using a diode array detector.

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> CEF-815-GW-1S-04	<b>Date Sampled:</b> 06/19/02
<b>Lab Sample ID:</b> F13627-5	<b>Date Received:</b> 06/20/02
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> FLORIDA-PRO SW846 3510C	
<b>Project:</b> NAS Cecil Field-CTO-209	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP21494.D	10	06/25/02	SKW	06/21/02	OP5355	GOP795
Run #2							

Run #	Initial Volume	Final Volume
Run #1	910 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	22.7	2.8	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	110%		55-130%	

**ND = Not detected**  
**RL = Reporting Limit**  
**E = Indicates value exceeds calibration range**

**J = Indicates an estimated value**  
**B = Indicates analyte found in associated method blank**  
**N = Indicates presumptive evidence of a compound**

## Report of Analysis

<b>Client Sample ID:</b> CEF-NG-GW-26S-04	<b>Date Sampled:</b> 06/19/02
<b>Lab Sample ID:</b> F13627-6	<b>Date Received:</b> 06/20/02
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> EPA 8310 SW846 3510C	
<b>Project:</b> NAS Cecil Field-CTO-209	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	EE008779.D	1	06/28/02	MRE	06/21/02	OP5351	GEE411
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

**Polynuclear Aromatic Hydrocarbons**

CAS No.	Compound	Result	RL	Units Q
91-20-3	Naphthalene	3.9	2.1	ug/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	118%		33-141%
92-94-4	p-Terphenyl	79%		31-122%

(a) All hits confirmed by spectral match using a diode array detector.

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> CEF-NG-GW-26S-04 <b>Lab Sample ID:</b> F13627-6 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> FLORIDA-PRO SW846 3510C <b>Project:</b> NAS Cecil Field-CTO-209	<b>Date Sampled:</b> 06/19/02 <b>Date Received:</b> 06/20/02 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP21485.D	1	06/25/02	SKW	06/21/02	OP5355	GOP794
Run #2							

Run #	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	2.19	0.27	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	93%		55-130%

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER

815-061902

F13627 OF 1

NAS CECIL FIELD

PROJECT NO: B-815 Wash Rack	SITE NAME: N4093	PROJECT MANAGER AND PHONE NUMBER: PAUL CALLIGAN 813 806 0202	LABORATORY NAME AND CONTACT: ACCUTEST SUE BELL
SAMPLERS (SIGNATURE) 		FIELD OPERATIONS LEADER AND PHONE NUMBER: MERY DAVE 904 281 0400	ADDRESS: 4405 VINELAND RD. C-15
		CARRIER/WAYBILL NUMBER: Fedex	CITY, STATE: ORLANDO, FL 32811

STANDARD TAT <input checked="" type="checkbox"/>	CONTAINER TYPE PLASTIC (P) or GLASS (G)
RUSH TAT <input type="checkbox"/>	PRESERVATIVE USED
<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	None H <sub>2</sub> SO <sub>4</sub>

DATE YEAR	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS	COMMENTS
6/19	1100	CEF. 815. GW. 35.04	GW	G	12	G G	Cool to 4°C
6/19	0000	CEF. N6. <sup>GW</sup> DUL 1. 04	GW	G	2	None	
6/19	1050	CEF. N6. GW. 145.04	GW	G	4	None	N4093-P2178(SS)
6/19	1320	CEF. N6. GW. 125.04	GW	G	4	None	
6/19	1335	CEF. 815. GW. 15.04	GW	G	4	None	
6/19	1430	CEF. N6. GW. 265.04	GW	G	4	None	

1. RELINQUISHED BY 	DATE 6/19/02	TIME 1700	1. RECEIVED BY Miranda Jansen	DATE 6-20-02	TIME 9:00
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

## Sample Summary

Tetra Tech, NUS

Job No: F13882

Cecil Field-Bldg 815/NG  
Project No: N4093

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F13882-1	07/17/02	13:25	CM	07/18/02	AQ Ground Water	CEF-815-GW-1S-04A

## Report of Analysis

<b>Client Sample ID:</b> CEF-815-GW-1S-04A <b>Lab Sample ID:</b> F13882-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> EPA 8310 SW846 3510C <b>Project:</b> Cecil Field-Bldg 815/NG	<b>Date Sampled:</b> 07/17/02 <b>Date Received:</b> 07/18/02 <b>Percent Solids:</b> n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	AA011381.D	5	07/23/02	MRE	07/19/02	OP5514	GAA528
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

### Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
91-20-3	Naphthalene	205	11	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	117%		33-141%	
92-94-4	p-Terphenyl	72%		31-122%	

(a) All hits confirmed by spectral match using a diode array detector.

ND = Not detected  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> CEF-815-GW-1S-04A <b>Lab Sample ID:</b> F13882-1 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> FLORIDA-PRO SW846 3510C <b>Project:</b> Cecil Field-Bldg 815/NG	<b>Date Sampled:</b> 07/17/02 <b>Date Received:</b> 07/18/02 <b>Percent Solids:</b> n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP22265.D	10	07/23/02	SKW	07/22/02	OP5524	GOP809
Run #2							

Run #	Initial Volume	Final Volume
Run #1	930 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units Q
	TPH (C8-C40)	16.3	2.7	mg/l

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	90%		55-130%

**ND = Not detected**  
**RL = Reporting Limit**  
**E = Indicates value exceeds calibration range**

**J = Indicates an estimated value**  
**B = Indicates analyte found in associated method blank**  
**N = Indicates presumptive evidence of a compound**

