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NAS CECIL FIELD, FL
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FIRST SEMI-ANNUAL FIRST YEAR GROUNDWATER MONITORING LETTER REPORT FOR
BUILDING 815 WASH RACK AREA NAS CECIL FIELD FL
3/6/2001
TETRA TECH NUS INC



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Project Number 0394

Commander, Southern Division
Naval Facilities Engineering Command
ATTN: Mr. Nick Ugolini (Mail Code 1843)
2155 Eagle Drive
North Charleston, South Carolina 29406

Reference: Clean Contract No. N62467-94-D0888
Contract Task Order No. 0108

Subject: Groundwater Monitoring Report, 1st Semi-Annual, 1st Year (November 2000)
Building 815 Wash Rack Area
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Ugolini:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Groundwater Monitoring Letter Report for the referenced Contract Task Order (CTO). This report was prepared by TtNUS for the U.S. 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 monitor semi-annually the groundwater beneath the Building 815 Wash Rack Area, former Naval Air Station (NAS) Cecil Field, Jacksonville, Florida (Figure 1). The information in this report was presented at the January 2001 Base Closure Team meeting.

The Monitoring Only Plan for Natural Attenuation (MONA) order required sampling of the following monitoring wells: CEF-815-1S (contaminated), NG-12S (contaminated), CEF-815-3S (perimeter), and NG-26S (perimeter). In that MONA order, the Florida Department of Environmental Protection (FDEP) set specific action levels for the source and perimeter wells; and, if either is exceeded, then the well or wells must be re-sampled no later than 30 days after the initial positive results are known (FDEP, 2000). The action levels for naphthalene and total recoverable petroleum hydrocarbons (TRPH) for the source wells were set at 200 micrograms per liter ($\mu\text{g/L}$) and 50 milligrams per liter (mg/L), respectively. Similarly, the action levels for the same compounds for the perimeter wells were set at 20 $\mu\text{g/L}$ and 5 mg/L, respectively.

FIELD OPERATIONS

Figure 2 illustrates the groundwater elevations as measured on November 6, 2000. Seven wells were measured at that time. The depth to water in November 2000 ranged from 4.93 to 6.11 feet below top of casing (btoc). The groundwater contours on Figure 2 indicate flow to the southeast. Table 1 provides the water table elevation data for the event.

On November 6, 2000, TtNUS collected groundwater samples from the four monitoring wells listed in the introduction. Sampling was conducted in general accordance with the Base-wide Generic Work Plan Volumes I and II (TtNUS, 1998).

The analytical results from the November sampling event indicated that a MONA action level was exceeded in the sample from perimeter monitoring well CEF-815-3S for naphthalene, which triggered a

re-sampling event for that well in accordance with the MONA order. No other action level was exceeded in that well or the other wells. TtNUS personnel collected a groundwater sample from that location on December 11, 2000 for polycyclic aromatic hydrocarbons (PAHs) only.

Following collection, the groundwater samples were shipped to Accutest Laboratories in Orlando, Florida, for analysis. The samples were analyzed using Environmental Protection Agency (EPA) Method SW846 8310 for PAHs, and Florida – Petroleum Range Organics (FL-PRO) for TRPH. Figure 2 depicts naphthalene and TRPH concentrations that were detected in the groundwater samples since those are the compounds of concern in the MONA. The analytical results for this event are summarized in Table 2. A copy of the laboratory report is provided in Attachment A.

RESULTS

The laboratory data indicate that, of the entire EPA Method 8310 compound list, only the three naphthalene compounds were detected in the groundwater sample from perimeter well CEF-815-1S, and only naphthalene was detected in the other three monitoring wells. Only the naphthalene concentrations in samples from monitoring wells CEF-815-1S and CEF-815-3S exceeded Groundwater Cleanup Target Levels (GCTL). Additionally, the naphthalene concentration for the sample from perimeter well CEF-815-3S (22.9 µg/L) exceeded the MONA action level of 20 µg/L. The analytical results for the re-sampling of monitoring well CEF-815-3S indicate that the concentration of naphthalene was 25.6 µg/L.

TRPH was detected in all four monitoring wells, and the GCTL (5 mg/L) was exceeded only in the sample from contaminated well CEF-815-1S. That concentration was below both the action level and the 1st year milestone objective set for that monitoring well (Table 2).

CONCLUSIONS AND RECOMMENDATIONS

Groundwater flow was confirmed during this event to be southeasterly.

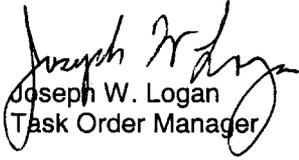
Figure 2 indicates the contaminant plumes for naphthalene and TRPH based on their respective GCTLs. The TRPH plume has decreased in size from the time of the Site Assessment Report (SAR) (TtNUS, 2000). Prior to the SAR submittal, the plume extended beyond monitoring well NG-12S, and now it appears delineated by the two perimeter monitoring wells and the contaminated well NG-12S.

The naphthalene plume has spread downgradient to include the perimeter well CEF-815-3S. It appears that the plume may be migrating downgradient; however, the concentrations of naphthalene (22.9 to 25.6 µg/L) in the downgradient well CEF-815-3S remain an order of magnitude below the Natural Attenuation Default Source Concentration for naphthalene (200 µg/L). Therefore, TtNUS recommends continuation of the current MONA program with the following changes:

- Retain monitoring well CEF-815-3S in the MONA, but change its designation from perimeter well to contaminated monitoring well, which will increase the action levels for this monitoring well.
- Add downgradient monitoring well NG-14S to the MONA program as a perimeter well. This monitoring well is about 40 feet downgradient of CEF-815-3S (Figure 2), and the SAR analytical data indicate no volatile organic compounds were detected for well NG-14S (Table 3).

The next semi-annual sampling event is scheduled for early May 2001. If you have any questions with regard to this submittal, or if we can be of assistance in any way, please contact Joe Logan at (412) 921-7231.

Sincerely,

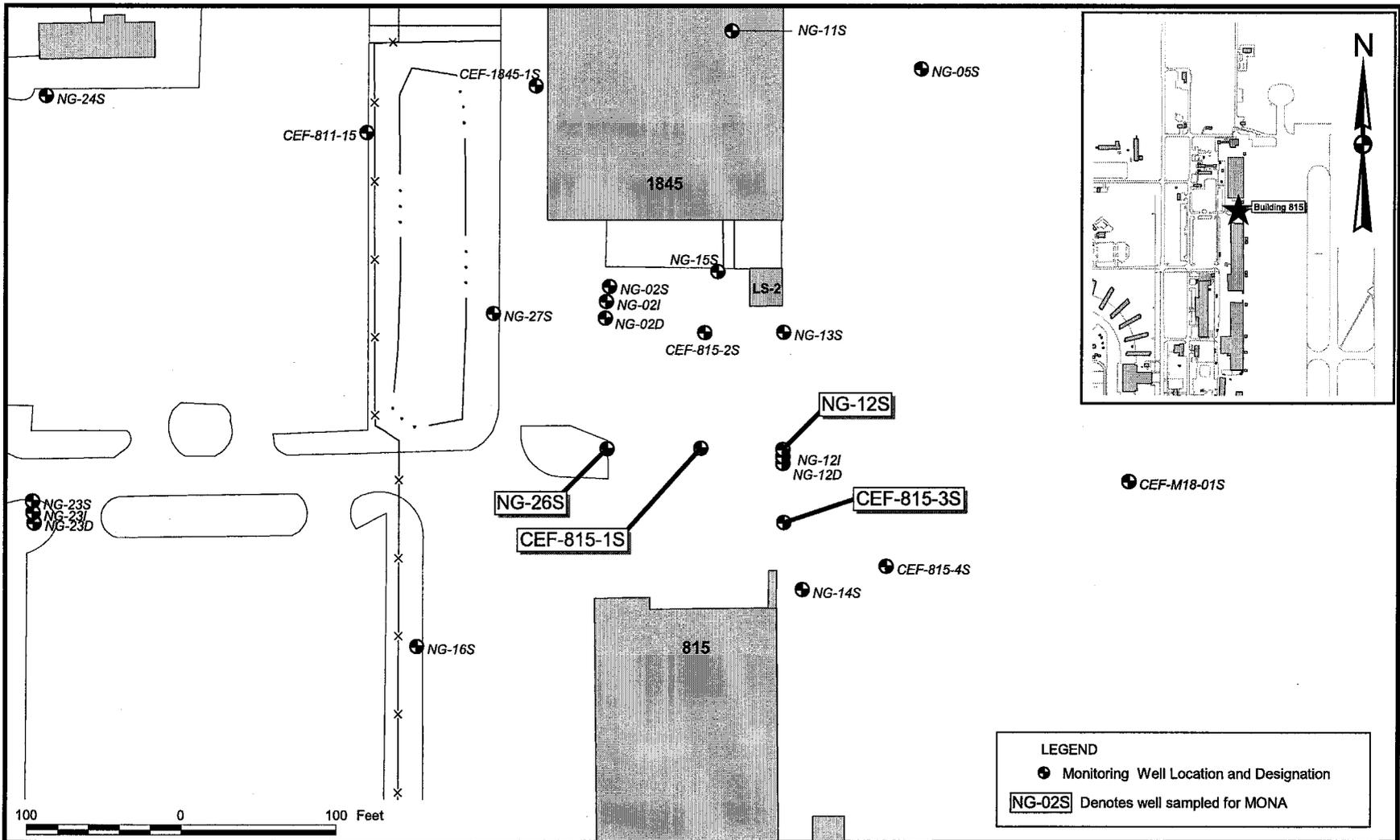

Joseph W. Logan
Task Order Manager


Debbie Wroblewski
Program Manager

JL/mwd

Attachments (6)

cc: D. Vaughn-Wright, USEPA
D. Grabka, FDEP (2 copies)
D. Wroblewski, TtNUS (w/o attachments)
M. Speranza, TtNUS
M. Perry, TtNUS (CTO 108 File Copy)



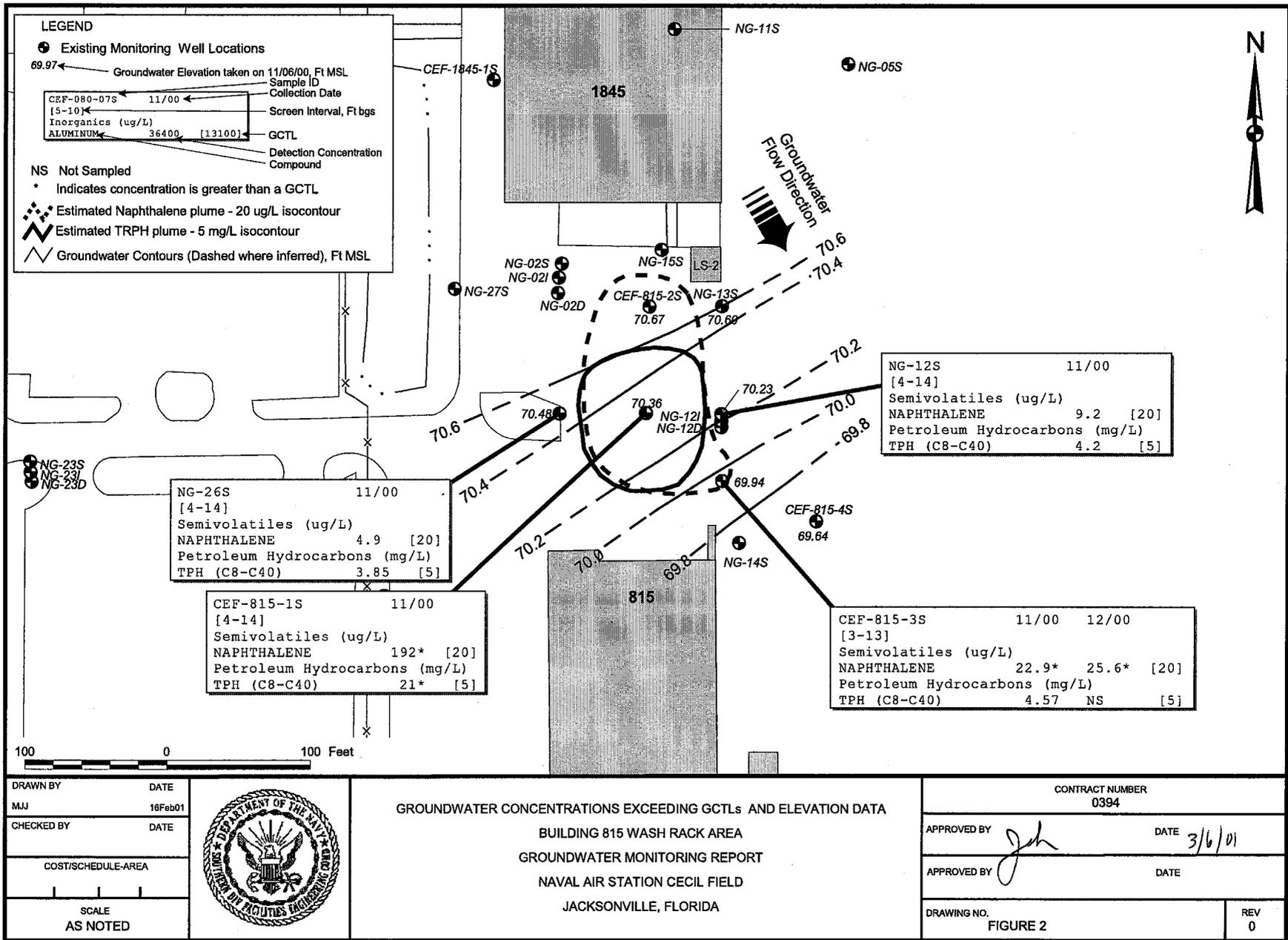
LEGEND
 ● Monitoring Well Location and Designation
 [NG-02S] Denotes well sampled for MONA

DRAWN BY	DATE
MJJ	20Dec98
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 0394	
APPROVED BY	DATE 3/6/01
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0



**Table 1
Water Table Elevation Data
Groundwater Monitoring Report, November 2000**

Building 815 Wash Rack Area
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well Identification	Well Depth (feet, BTOC)	Top of Casing Elevation (feet, msl)	November 6, 2000	
			Depth to Water (feet, BTOC)	Water-Level Elevation (feet, msl)
CEF-815-1S	13.10	75.56	5.20	70.36
CEF-815-2S	14.00	75.60	4.93	70.67
CEF-815-3S	12.90	75.64	5.70	69.94
CEF-815-4S	14.00	75.75	6.11	69.64
NG-12S	13.40	75.69	5.46	70.23
NG-13S	14.00	76.04	5.44	70.60
NG-26S	14.25	75.84	5.36	70.48

Notes: msl - mean sea level.
BTOC = below top of casing.

**Table 2
Summary of Detections
Groundwater Monitoring Report, November 2000**

Building 815 Wash Rack Area
Naval Air Station Cecil Field
Jacksonville, Florida

Analyte	Contaminated Wells		Perimeter Monitoring Wells			Action Levels for Contaminated Wells/Perimeter Wells	Milestone Objectives for CEF-815-1S and NG-12S after the 1st Year	NADSC ² /GCTL ¹ (Contaminated/Perimeter)
	CEF-815-1S	NG-12S	CEF-815-3S	CEF-815-3S	NG-26S			
Date Sample Collected	11/6/00	11/6/00	11/6/00	12/11/00	11/6/00			
Polynuclear Aromatic Hydrocarbons (µg/L)								
1-Methylnaphthalene	14.8	2.2U	2.2U	2.2U	2.2U	None	N/A	200/20
2-Methylnaphthalene	18.0	2.2U	2.2U	2.2U	2.2U	None	N/A	200/20
Naphthalene	192	9.2	22.9	25.6	4.9	200/20	145	200/20
Total Recoverable Petroleum Hydrocarbons (mg/L)								
TRPH	21.0	4.20	4.57	Not Sampled	3.85	50/50	28	50/5

Notes: Values exceeding milestones, NADSC or GCTL, are in bold.
¹GCTL=Groundwater Cleanup Target Levels based on Chapter 62-770, Florida Administrative Code.
²NADSC=Natural Attenuation Default Source Concentrations as promulgated in Chapter 62-770.690.
 N/A = not applicable.
 U = undetected at reporting limit shown.

<p align="center">Table 3 Historical Analytical Data Building 815 Wash Rack area Naval Air Station Cecil Field Jacksonville, Florida</p>					
Monitoring Well ID	CEF-815-1S	CEF-815-1S	CEF-815-2S	CEF-815-3S	FDEP
Sample Number	CEF-815-GW-1S-01	CEF-815-1S-01	CEF-815-GW-2S-01	CEF-815-GW-3S-01	GCTL,
Sample Date	October 8, 1999	November 6, 2000	October 8, 1999	October 7, 1999	
Well Depth, Feet	14	14	15	13	FAC 62-777
Volatile Organic Compounds (µg/L)					
cis-1,2-dichloroethene	1 U	na	1 U	1 UJ	70
trans-1,2-dichloroethene	1 U	na	1 U	1 UJ	100
Trichloroethene	1 U	na	1 U	1 UJ	3
Vinyl Chloride	1 U	na	1 U	1 UJ	1
Xylenes - Total	0.94 J	na	3 U	3 UJ	20
Polynuclear Aromatic Hydrocarbons (µg/L)					
1-Methylnaphthalene	12	14.8	1.4	1 UJ	20
2-Methylnaphthalene	17	18	1.8	1 UJ	20
Acenaphthene	13	4.4 U	3.2	1 UJ	20
Acenaphthylene	3.8	4.4 U	1.1	2 J	210
Fluorene	4.9	2.2 U	1.1	1 UJ	280
Naphthalene	177	192	55	12.5 J	20
Phenanthrene	15.2	2.2 U	4.1	1.3 J	210
Total Recoverable Petroleum Hydrocarbons (mg/L)					
TRPH (C8-C40)	34	21	4.5	3.82	5
See notes at end of table					

**Table 3 (Cont'd)
Historical Analytical Data**

Building 815 Wash Rack area
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well ID Sample Number Sample Date Well Depth, Feet	CEF-815-3S CEF-815-3S-01 November 6, 2000 13	CEF-815-3S CEF-815-DUP1-01 November 6, 2000 13	CEF-815-3S CEF-815-3S-01A December 11, 2000 13	NG-12I CEF-815-GW-FLIMW12-01 October 8, 1999 38	FDEP GCTL, FAC 62-777
Volatile Organic Compounds (µg/L)					
cis-1,2-dichloroethene	na	na	na	1 U	70
trans-1,2-dichloroethene	na	na	na	1 U	100
Trichloroethene	na	na	na	1 U	3
Vinyl Chloride	na	na	na	1 U	1
Xylenes - Total	na	na	na	3 U	20
Polynuclear Aromatic Hydrocarbons (µg/L)					
1-Methylnaphthalene	2.2 U	2 U	2.2 U	1 U	20
2-Methylnaphthalene	2.2 U	2 U	2.2 U	1 U	20
Acenaphthene	4.4 U	4 U	4.4 U	1 U	20
Acenaphthylene	4.4 U	4 U	4.4 U	1 U	210
Fluorene	2.2 U	2 U	2.2 U	1 U	280
Naphthalene	22.9	21.9	25.6	1 U	20
Phenanthrene	2.2 U	2 U	2.2 U	1 U	210
Total Recoverable Petroleum Hydrocarbons (mg/L)					
TRPH (C8-C40)	4.57	2.9	na	0.5 U	5
See notes at end of table.					

Table 3 (Cont'd)
Historical Analytical Data

Building 815 Wash Rack area
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well ID	NG-12S	NG-12S	NG-14S	CEF-815-4S	FDEP
Sample Number	CEF-815-GW-FLSMW12-01	CEF-815-12S-01	CEF-815-GW-FLSMW14-01	CEF-815-GW-4S-02	GCTL,
Sample Date	October 8, 1999	November 6, 2000	October 8, 1999	February 18, 2000	FAC 62-777
Well Depth, Feet	14	14	14	14	
Volatile Organic Compounds (µg/L)					
cis-1,2-dichloroethene	1 U	na	1 U	6.9	70
trans-1,2-dichloroethene	1 U	na	1 U	3	100
Trichloroethene	1 U	na	1 U	2.3	3
Vinyl Chloride	1 U	na	1 U	1.3	1
Xylenes - Total	3 U	na	3 U	3 U	20
Polynuclear Aromatic Hydrocarbons (µg/L)					
1-Methylnaphthalene	1 U	2.2 U	na	1 U	20
2-Methylnaphthalene	1 U	2.2 U	na	1 U	20
Acenaphthene	1 U	4.4 U	na	1 U	20
Acenaphthylene	3	4.4 U	na	1 U	210
Fluorene	1 U	2.2 U	na	1 U	280
Naphthalene	4.4	9.2	na	1 U	20
Phenanthrene	1 U	2.2 U	na	1 U	210
Total Recoverable Petroleum Hydrocarbons (mg/L)					
TRPH (C8-C40)	12	4.2	na	0.396	5
See notes at end of table.					

**Table 3 (Cont'd)
Historical Analytical Data**

Building 815 Wash Rack area
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well ID	CEF-815-4S	NG-02S	NG-26S	NG-26S	NG-13S	FDEP
Sample Number	CEF-815-GW-4S-03	CEF-815-GW-NG-02S-02	CEF-815-GW-NG-26S-02	CEF-NG-26S-01	CEF-815-GW-NG13S-02	GCTL,
Sample Date	May 11, 2000	February 21, 2000	February 21, 2000	November 6, 2000	February 18, 2000	FAC 62-777
Well Depth, Feet	14	14	14	14	14	

Volatile Organic Compounds (µg/L)

cis-1,2-dichloroethene	6.3	1 U	1 U	na	1 U	70
trans-1,2-dichloroethene	1.8	1 U	1 U	na	1 U	100
Trichloroethene	1.7	1 U	1 U	na	1 U	3
Vinyl Chloride	0.64 J	1 U	1 U	na	1 U	1
Xylenes - Total	3 U	3 U	3 U	na	3 U	20

Polynuclear Aromatic Hydrocarbons (µg/L)

1-Methylnaphthalene	na	2.2 U	2.2 U	2.2 U	1 U	20
2-Methylnaphthalene	na	2.2 U	2.2 U	2.2 U	1 U	20
Acenaphthene	na	2.2 U	2.2 U	4.4 U	1 U	20
Acenaphthylene	na	2.2 U	2.2 U	4.4 U	1 U	210
Fluorene	na	2.2 U	2.2 U	2.2 U	1 U	280
Naphthalene	na	2.2 U	10.9	4.9	1 U	20
Phenanthrene	na	2.2 U	2.2 U	2.2 U	1 U	210

Total Recoverable Petroleum Hydrocarbons (mg/L)

TRPH (C8-C40)	na	0.418	2.62	3.85	0.41	5
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Notes:

GCTL - Groundwater Cleanup Target Level

Shaded values are greater than GCTL

ug/L - micrograms per liter

mg/L - milligrams per liter

na - not analyzed

U - undetected at reporting limit shown

J - laboratory estimated value

ATTACHMENT A
GROUNDWATER ANALYTICAL REPORTS

Sample Summary

Tetra Tech, NUS

Job No: F8059

Cecil Field-Bldg 815/NG
Project No: WORK RELEASE CF-20

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F8059-1	11/06/00	12:00 ER	11/07/00	AQ	Ground Water	CEF-815-1S-01
F8059-2	11/06/00	14:40 ER	11/07/00	AQ	Ground Water	CEF-815-3S-01
F8059-3	11/06/00	11:12 ER	11/07/00	AQ	Ground Water	CEF-NG-12S-01
F8059-4	11/06/00	12:53 ER	11/07/00	AQ	Ground Water	CEF-NG-26S-01
F8059-5	11/06/00	00:00 ER	11/07/00	AQ	Ground Water	CEF-815-DUP1-01

Report of Analysis

Client Sample ID: CEF-815-1S-01	Date Sampled: 11/06/00
Lab Sample ID: F8059-1	Date Received: 11/07/00
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 8310	
Project: Cecil Field-Bldg 815/NG	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA005251.D	1	11/10/00	MRE	11/08/00	OP2282	GAA176
Run #2	AA005259.D	8	11/10/00	MRE	11/08/00	OP2282	GAA177

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.4	ug/l	
208-96-8	Acenaphthylene	ND	4.4	ug/l	
120-12-7	Anthracene	ND	2.2	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	ug/l	
218-01-9	Chrysene	ND	2.2	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	ug/l	
206-44-0	Fluoranthene	ND	2.2	ug/l	
86-73-7	Fluorene	ND	2.2	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	ug/l	
91-20-3	Naphthalene	192 ^a	17	ug/l	
90-12-0	1-Methylnaphthalene	14.8	2.2	ug/l	
91-57-6	2-Methylnaphthalene	18.0	2.2	ug/l	
85-01-8	Phenanthrene	ND	2.2	ug/l	
129-00-0	Pyrene	ND	2.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	84%	88%	29-133%
92-94-4	p-Terphenyl	50%	53%	33-133%

(a) Result is from Run# 2

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

Client Sample ID:	CEF-815-1S-01	Date Sampled:	11/06/00
Lab Sample ID:	F8059-1	Date Received:	11/07/00
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	FLORIDA-PRO		
Project:	Cecil Field-Bldg 815/NG		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF00298.D	40	11/14/00	KP	11/08/00	OP2284	GZF13
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	21.0	10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	119%		40-140%	

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

Client Sample ID: CEF-815-3S-01	Date Sampled: 11/06/00
Lab Sample ID: F8059-2	Date Received: 11/07/00
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 8310	
Project: Cecil Field-Bldg 815/NG	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	AA005252.D	1	11/10/00	MRE	11/08/00	OP2282	GAA176

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.4	ug/l	
208-96-8	Acenaphthylene	ND	4.4	ug/l	
120-12-7	Anthracene	ND	2.2	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	ug/l	
218-01-9	Chrysene	ND	2.2	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	ug/l	
206-44-0	Fluoranthene	ND	2.2	ug/l	
86-73-7	Fluorene	ND	2.2	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	ug/l	
91-20-3	Naphthalene	22.9	2.2	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	ug/l	
85-01-8	Phenanthrene	ND	2.2	ug/l	
129-00-0	Pyrene	ND	2.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	75%		29-133%
92-94-4	p-Terphenyl	50%		33-133%

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

Client Sample ID:	CEF-815-3S-01	Date Sampled:	11/06/00
Lab Sample ID:	F8059-2	Date Received:	11/07/00
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	FLORIDA-PRO		
Project:	Cecil Field-Bldg 815/NG		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF00299.D	8	11/14/00	KP	11/08/00	OP2284	GZF13
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	4.57	2.1	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	52%		40-140%	

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

Client Sample ID:	CEF-NG-12S-01	Date Sampled:	11/06/00
Lab Sample ID:	F8059-3	Date Received:	11/07/00
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 8310		
Project:	Cecil Field-Bldg 815/NG		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA005253.D	1	11/10/00	MRE	11/08/00	OP2282	GAA176
Run #2							

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.4	ug/l	
208-96-8	Acenaphthylene	ND	4.4	ug/l	
120-12-7	Anthracene	ND	2.2	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	ug/l	
218-01-9	Chrysene	ND	2.2	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	ug/l	
206-44-0	Fluoranthene	ND	2.2	ug/l	
86-73-7	Fluorene	ND	2.2	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	ug/l	
91-20-3	Naphthalene	9.2	2.2	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	ug/l	
85-01-8	Phenanthrene	ND	2.2	ug/l	
129-00-0	Pyrene	ND	2.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%		29-133%
92-94-4	p-Terphenyl	75%		33-133%

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

Client Sample ID: CEF-NG-12S-01
 Lab Sample ID: F8059-3
 Matrix: AQ - Ground Water
 Method: FLORIDA-PRO
 Project: Cecil Field-Bldg 815/NG

Date Sampled: 11/06/00
 Date Received: 11/07/00
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF00300.D	8	11/14/00	KP	11/08/00	OP2284	GZF13
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	4.20	2.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	107%		40-140%

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

Client Sample ID:	CEF-NG-26S-01	Date Sampled:	11/06/00
Lab Sample ID:	F8059-4	Date Received:	11/07/00
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 8310		
Project:	Cecil Field-Bldg 815/NG		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA005254.D	1	11/10/00	MRE	11/08/00	OP2282	GAA176
Run #2							

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.4	ug/l	
208-96-8	Acenaphthylene	ND	4.4	ug/l	
120-12-7	Anthracene	ND	2.2	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	ug/l	
218-01-9	Chrysene	ND	2.2	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	ug/l	
206-44-0	Fluoranthene	ND	2.2	ug/l	
86-73-7	Fluorene	ND	2.2	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	ug/l	
91-20-3	Naphthalene	4.9	2.2	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	ug/l	
85-01-8	Phenanthrene	ND	2.2	ug/l	
129-00-0	Pyrene	ND	2.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	102%		29-133%
92-94-4	p-Terphenyl	84%		33-133%

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

Client Sample ID:	CEF-NG-26S-01	Date Sampled:	11/06/00
Lab Sample ID:	F8059-4	Date Received:	11/07/00
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	FLORIDA-PRO		
Project:	Cecil Field-Bldg 815/NG		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	ZF00301.D	4	11/14/00	KP	11/08/00	OP2284	GZF13

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	3.85	1.0	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	97%		40-140%	

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

Client Sample ID: CEF-815-DUP1-01
 Lab Sample ID: F8059-5
 Matrix: AQ - Ground Water
 Method: EPA 8310
 Project: Cecil Field-Bldg 815/NG

Date Sampled: 11/06/00
 Date Received: 11/07/00
 Percent Solids: n/a

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	EE000669.D	1	11/14/00	MRE	11/09/00	OP2288	GEE31

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.0	ug/l	
208-96-8	Acenaphthylene	ND	4.0	ug/l	
120-12-7	Anthracene	ND	2.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.20	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	ug/l	
218-01-9	Chrysene	ND	2.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	ug/l	
206-44-0	Fluoranthene	ND	2.0	ug/l	
86-73-7	Fluorene	ND	2.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.20	ug/l	
91-20-3	Naphthalene	21.9	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	ug/l	
85-01-8	Phenanthrene	ND	2.0	ug/l	
129-00-0	Pyrene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	75%		29-133%
92-94-4	p-Terphenyl	53%		33-133%

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

Client Sample ID: CEF-815-DUP1-01 Lab Sample ID: F8059-5 Matrix: AQ - Ground Water Method: FLORIDA-PRO Project: Cecil Field-Bldg 815/NG	Date Sampled: 11/06/00 Date Received: 11/07/00 Percent Solids: n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF00302.D	4	11/14/00	KP	11/08/00	OP2284	GZF13
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	2.90	1.0	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	42%		40-140%	

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

Sample Summary

Tetra Tech, NUS

Job No: F8366

Cecil Field-Bldg 815/NG
Project No: CF-20

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F8366-1	12/11/00	11:00 MD	12/13/00	AQ	Ground Water	CEF-815-3S-01A



Report of Analysis

Client Sample ID:	CEF-815-3S-01A	Date Sampled:	12/11/00
Lab Sample ID:	F8366-1	Date Received:	12/13/00
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 8310 SW846 3510C		
Project:	Cecil Field-Bldg 815/NG		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA005775.D	1	12/19/00	MRE	12/18/00	OP2447	GAA205
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.4	ug/l	
208-96-8	Acenaphthylene	ND	4.4	ug/l	
120-12-7	Anthracene	ND	2.2	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	ug/l	
218-01-9	Chrysene	ND	2.2	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	ug/l	
206-44-0	Fluoranthene	ND	2.2	ug/l	
86-73-7	Fluorene	ND	2.2	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	ug/l	
91-20-3	Naphthalene	25.6	2.2	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	ug/l	
85-01-8	Phenanthrene	ND	2.2	ug/l	
129-00-0	Pyrene	ND	2.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92%		29-133%
92-94-4	p-Terphenyl	48%		33-133%

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