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NAS CECIL FIELD, FL
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LETTER REPORT SUPPLEMENTAL ASSESSMENT FOR NORTH-SOUTH APRON PLUME
NAS CECIL FIELD FL
1/14/2003
TETRA TECH NUS INC

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January 14, 2003

Project Number N4248

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 0248

Subject: Letter Report, Supplemental Assessment
North-South Apron Plume
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) has completed a supplemental assessment at the North-South Apron Plume (NSAP), and we are pleased to submit this letter report in accordance with the referenced Contract Task Order (CTO) for the site. This letter report was prepared for the United States Navy (Navy) Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) under the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888.

TtNUS recommended a supplemental assessment at the conclusion of the 4th Quarterly Groundwater Monitoring Event, which was completed in February 2002. Subsequently, the Florida Department of Environmental Protection's (FDEP) response letter (Attachment A) agreed with the necessity of a supplemental assessment. The primary objective of the supplemental work was to determine the lateral extent of the groundwater contamination plume associated with the intermediate aquifer zone at this site in order to determine an appropriate future course of action for the site. The guidance document for this report is Chapter 62-770, Florida Administrative Code (FAC). This report summarizes the field operations and analytical results for the subject site. Figure 1 shows the location of the site.

FIELD OPERATIONS

Field operations were performed in general accordance with the TtNUS Comprehensive Quality Assurance Plan (CompQAP) Number 980038. In August 2002, TtNUS mobilized to the site with a direct-push technology (DPT) company and, together, collected three shallow zone and eight intermediate zone groundwater samples using stainless steel sample tooling. The samples collected were shipped on ice and under chain of custody to Accutest Laboratories in Orlando, Florida for analysis. These samples were analyzed for the contaminants of concern (COCs) benzene, toluene, ethylbenzene, and total xylenes (BTEX) using United States Environmental Protection Agency (USEPA) Method SW846 8260B.

Based on the screening-level data obtained by the DPT work, TtNUS and the Navy agreed on the placement of five additional intermediate zone monitoring wells. During the week of October 7, 2002, the five monitoring wells (CEF-M18-06I through CEF-M18-10I) were installed and developed. The boring logs and well construction diagrams for those wells are included as Attachment B.

Groundwater measurements were collected on October 23, 2002, from nine intermediate monitoring wells (CEF-M18-02S and CEF-M18-02I through CEF-M18-09I). After taking water levels, groundwater samples were collected using low flow methods from the five recently installed intermediate monitoring wells (CEF-M18-06I, CEF-M18-07I, CEF-M18-08I, CEF-M18-09I, and CEF-M18-10I). Following collection, the groundwater samples were placed on ice and shipped under chain of custody to Accutest Laboratories for analysis. The samples from the intermediate wells were analyzed for BTEX using USEPA Method SW846 8260B, which agrees with the COC list provided in the FDEP Monitoring Plan Approval Order (Attachment C).

RESULTS

The depth to water in the monitoring wells ranged from 6.17 to 7.55 feet (ft) below top of casing (btoc). The depth-to-water measurements, along with top-of-casing elevations, were used to calculate groundwater elevations. Table 1 provides the groundwater elevation data. Figure 2 shows the direction of groundwater flow to the southeast in the intermediate zone.

The groundwater elevations from the shallow wells were not used in the calculation of groundwater flow direction. It should be noted, though, that there is only 0.01 ft of difference between the groundwater elevations for CEF-M18-02S and CEF-M18-02I. Since the lithology of the shallow zone and intermediate zones consists primarily of silty fine sands with no known confining units between them (TtNUS, 2001), their nearly identical water elevations (68.65 and 68.64, respectively) appear to indicate they are hydraulically connected.

The laboratory screening-level data for the DPT samples (both shallow and intermediate) indicate that none of the COCs were detected. The laboratory report for this data is provided as Attachment D.

The analytical results for the monitoring wells from this supplemental assessment are summarized in Table 2, and the laboratory report is provided as Attachment E. Table 2 indicates that the Groundwater Cleanup Target Level (GCTL) for benzene was exceeded in monitoring wells CEF-M18-07I through CEF-M18-10I. The GCTLs for the other COCs were not exceeded in any of the recently installed monitoring wells (CEF-M18-06I through CEF-M18-10I). Table 2 also indicates that the concentrations for the intermediate wells (CEF-M18-02I through CEF-M18-10I) are below the Natural Attenuation Default Source Concentrations (NADSC).

Since only benzene and total xylenes have historically exceeded GCTLs at this site, Figure 3 displays the most recent analytical results for those COCs for both the DPT and permanent monitoring wells. Based on both the DPT screening-level data and the permanent monitoring well data, an approximate extent of the intermediate zone benzene plume is shown.

CONCLUSIONS AND RECOMMENDATIONS

As previously indicated, the shallow and intermediate zones appear to be hydraulically connected; therefore, part of this investigation attempted to determine if a shallow zone source exists for the COCs. Previously in the SAR (TtNUS, 2001), the analytical data for the shallow zone wells (CEF-M18-01S and CEF-M18-02S) indicated that there is no obvious source for the intermediate zone BTEX contamination. Table 2 displays that data. The DPT data from three shallow locations (DP01, DP06, and DP09) also did not indicate a possible source for the intermediate zone BTEX contamination. Therefore, it appears that this contaminant plume is isolated to the intermediate zone.

Because the contaminant concentrations remain below NADSC values, a Remedial Action Plan (RAP) is not justified at this time.

As was indicated in the last quarterly monitoring report (TtNUS, 2002), the milestone objectives had not been achieved. According to Chapter 62-770.690 (7)(g), FAC, the next step should be one of the following:

- Perform a supplemental site assessment.
- Perform additional monitoring.
- Prepare a RAP.

Since the supplemental assessment has been performed, the extent of the benzene plume is known, and higher benzene concentrations have been detected, TtNUS recommends following the next step and performing additional monitoring. The recommended list of monitoring wells, which is also indicated by the shaded tags on Figure 3, for the new program is as follows:

- CEF-M18-01S [upgradient point-of-compliance (POC) well].
- CEF-M18-02I (source well).
- CEF-M18-05I (downgradient POC well).
- CEF-M18-06I (sidegradient POC well).
- CEF-M18-08I (sidegradient POC well).
- CEF-M18-09I (source well).

In accordance with Chapter 62-770.690 (7)(g), FAC, a new set of milestone objectives is herewith provided:

Benzene Milestone Objectives		
Period	**CEF-M18-02I**	**CEF-M18-09I**
End of Year 1	7 µg/L	13 µg/L
End of Year 2	6 µg/L	10 µg/L
End of Year 3	5 µg/L	7 µg/L
End of Year 4	3 µg/L	4 µg/L
End of Year 5	1 µg/L	1 µg/L
µg/L = micrograms per liter		

Total Xylenes Milestone Objectives	
Period	**CEF-M18-02I**
End of Year 1	139 µg/L
End of Year 2	109 µg/L
End of Year 3	79 µg/L
End of Year 4	49 µg/L
End of Year 5	20 µg/L

The sidegradient POC well (CEF-M18-08I) does exceed the GCTL for benzene; however, the concentration is only 1.4 µg/L. For this reason, TtNUS requests a variance for this site to allow this well to act as a POC well with a benzene action level of 2 µg/L. This variance appears reasonable given that the DPT samples collected around it were non-detect for the COCs.

If you have any questions with regard to this submittal, please contact me at (813) 806-0202.

Sincerely,

Paul E. Calligan, P.G.
Task Order Manager

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

PC/mwd

Attachments (10)

pc: W. Hansel, SOUTHNAVFACENGCOM (CD only)
D. Vaughn-Wright, USEPA
D. Wroblewski, TtNUS (cover letter only)
M. Perry, TtNUS (unbound and CD)
Project File

TABLES

Table 1
Groundwater Elevation Data

Supplemental Assessment Letter Report
North-South Apron Plume
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well Identification	Well Depth (ft, btoc)	Top-of-Casing Elevation (ft, msl)	August 7, 2001		November 6, 2001		February 14, 2002		October 23, 2002	
			Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)
CEF-M18-01S	15	75.89	5.21	70.68	6.28	69.61	6.25	69.64	NM	NM
CEF-M18-02S	15	76.02	6.30	69.72	7.61	68.41	7.41	68.61	7.37	68.65
CEF-M18-02I	35	75.78	6.08	69.70	7.39	68.39	7.21	68.57	7.14	68.64
CEF-M18-03I	35	75.13	5.01	70.12	6.75	68.38	6.56	68.57	6.48	68.65
CEF-M18-04I	35	74.66	4.55	70.11	7.20	67.46	6.91	67.75	6.87	67.79
CEF-M18-05I	35	73.42	3.48	69.94	6.83	66.59	6.47	66.95	6.47	66.95
CEF-M18-06I	35	76.11	NE	NE	NE	NE	NE	NE	7.55	68.56
CEF-M18-07I	35	76.26	NE	NE	NE	NE	NE	NE	7.45	68.81
CEF-M18-08I	35	75.54	NE	NE	NE	NE	NE	NE	6.80	68.74
CEF-M18-09I	35	74.32	NE	NE	NE	NE	NE	NE	6.17	68.15
CEF-M18-10I	35	74.98	NE	NE	NE	NE	NE	NE	NM	NM

Notes:
NE = This well did not exist at this time.
The 1st quarter's data (May 2001) was removed from this table as a matter of brevity.
The top-of-casing elevation of CEF-M18-2I has been corrected.

NM = not measured
msl = mean sea level
btoc = below top of casing

Table 2
Summary of BTEX Detections in Groundwater

Supplemental Assessment Letter Report
North-South Apron Plume
Naval Air Station Cecil Field
Jacksonville, Florida

Well	CEF-M18-01S					CEF-M18-02I						FDEP GCTLs	NADSC
Sample Date	01/20/00	09/14/00	11/30/00	05/02/01	08/07/01	01/19/00	01/19/00	09/14/00	05/02/01	08/07/01	11/06/01		
Well Depth (ft bgs)	15	15	15	15	15	35	35	35	35	35	35		
	Sample	Sample	Sample	Sample	Sample	Sample	Duplicate	Sample	Sample	Sample	Sample		
Volatile Organic Compounds (ug/L)													
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	NS	**5.3**	**5.3**	**2.5**	**3.8**	**2.8**	**5.6**	1	100
Toluene	1.0 U	2.0 U	2.0 U	2.0 U	NS	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	0.68 J	40	400
Ethylbenzene	1.0 U	2.0 U	2.0 U	2.0 U	NS	7.2	7	1.0 U	0.95 J	1.0 J	5.8	30	300
Xylenes, total	3.0 U	6.0 U	6.0 U	6.0 U	NS	**68.2**	**67.4**	3.1	12.9	7	**54.4**	20	200

Well	CEF-M18-02I		CEF-M18-02S			CEF-M18-03I						FDEP GCTLs	NADSC
Sample Date	02/14/02	02/14/02	03/28/00	09/14/00	08/07/01	09/14/00	05/02/01	08/07/01	11/06/01	02/14/02			
Well Depth (ft bgs)	35	35	15	15	15	35	35	35	35	35			
	Sample	Duplicate	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample			
Volatile Organic Compounds (ug/L)													
Benzene	**8.3**	**8.6**	1.0 U	1.0 U	NS	**7**	**4.6**	**4.1**	**4**	**3.7**		1	100
Toluene	0.89 J	1 J	1.0 U	2.0 U	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U		40	400
Ethylbenzene	9.4	9.5	1.0 U	2.0 U	NS	4.6	1.1 J	1.7J	1.8 J	1.2 J		30	300
Xylenes, total	**139**	**147**	3.0 U	6.0 U	NS	**27.5**	5.3 J	10.6	11	6.6		20	200

Well	CEF-M18-04I								CEF-M18-05I			FDEP GCTLs	NADSC
Sample Date	03/28/00	03/28/00	09/14/00	05/02/01	08/07/01	08/07/01	11/06/01	02/14/02	11/30/00	11/30/00	05/02/01		
Well Depth (ft bgs)	35	35	35	35	35	35	35	35	35	35	35		
	Sample	Duplicate	Sample	Sample	Sample	Duplicate	Sample	Sample	Sample	Duplicate	Sample		
Volatile Organic Compounds (ug/L)													
Benzene	1.0 U	1.0 U	**7.7**	**8.0**	**8.7**	**8.7**	**8.8**	**9.1**	1.0 U	1.0 U	1.0 U	1	100
Toluene	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	40	400
Ethylbenzene	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	30	300
Xylenes, total	3.0 U	3.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	20	200

See notes at end of table.

Table 2
Summary of BTEX Detections in Groundwater

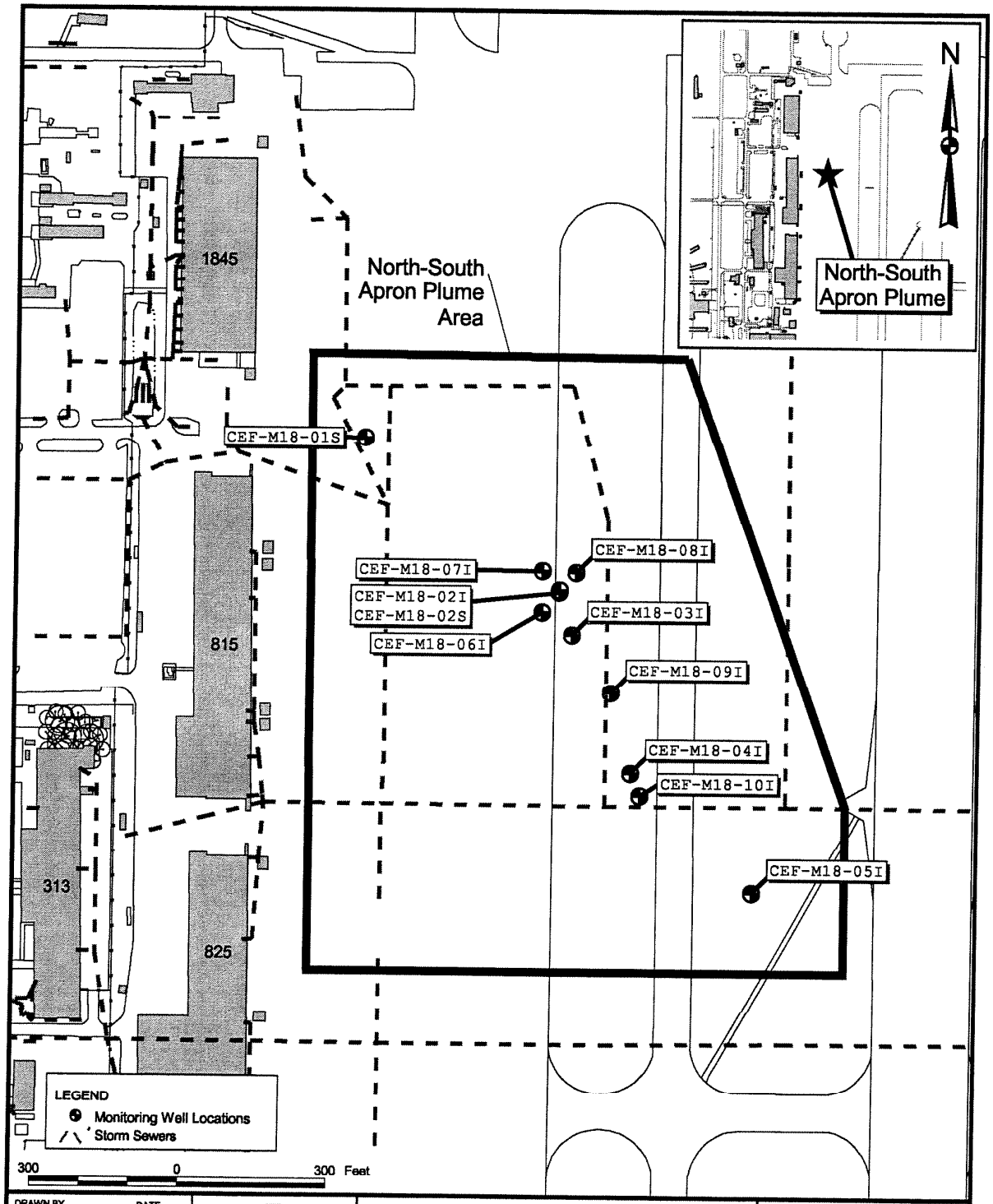
Supplemental Assessment Letter Report
North-South Apron Plume
Naval Air Station Cecil Field
Jacksonville, Florida

Well	CEF-M18-05I			CEF-M18-6I-05	CEF-M18-7I-05	CEF-M18-8I-05	CEF-M18-9I-05	FDEP GCTLs	NADSC
Sample Date	08/07/01	11/06/01	02/14/02	10/23/02	10/23/02	10/23/02	10/23/02		
Well Depth (ft bgs)	35	35	35	35	35	35	35		
	Sample	Sample	Sample	Sample	Sample	Sample	Sample		
Volatile Organic Compounds (ug/L)									
Benzene	1.0 U	1.0 U	1.0 U	0.72	**1.6**	**1.4**	**14.5**	1	100
Toluene	2.0 U	2.0 U	2.0 U	2.3	1.0 U	0.8	1.0 U	40	400
Ethylbenzene	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	30	300
Xylenes, total	6.0 U	6.0 U	6.0 U	3.0 U	3.0 U	3.0 U	3.0 U	20	200

Well	CEF-M18-10I-05	CEF-M18-6I-05	FDEP GCTLs	NADSC
Sample Date	10/23/02	10/23/02		
Well Depth (ft bgs)	35	35		
	Sample	Duplicate		
Volatile Organic Compounds (ug/L)				
Benzene	**9.3**	0.78	1	100
Toluene	3.8	2.8	40	400
Ethylbenzene	1.0 U	1.0 U	30	300
Xylenes, total	3.0 U	3.0 U	20	200

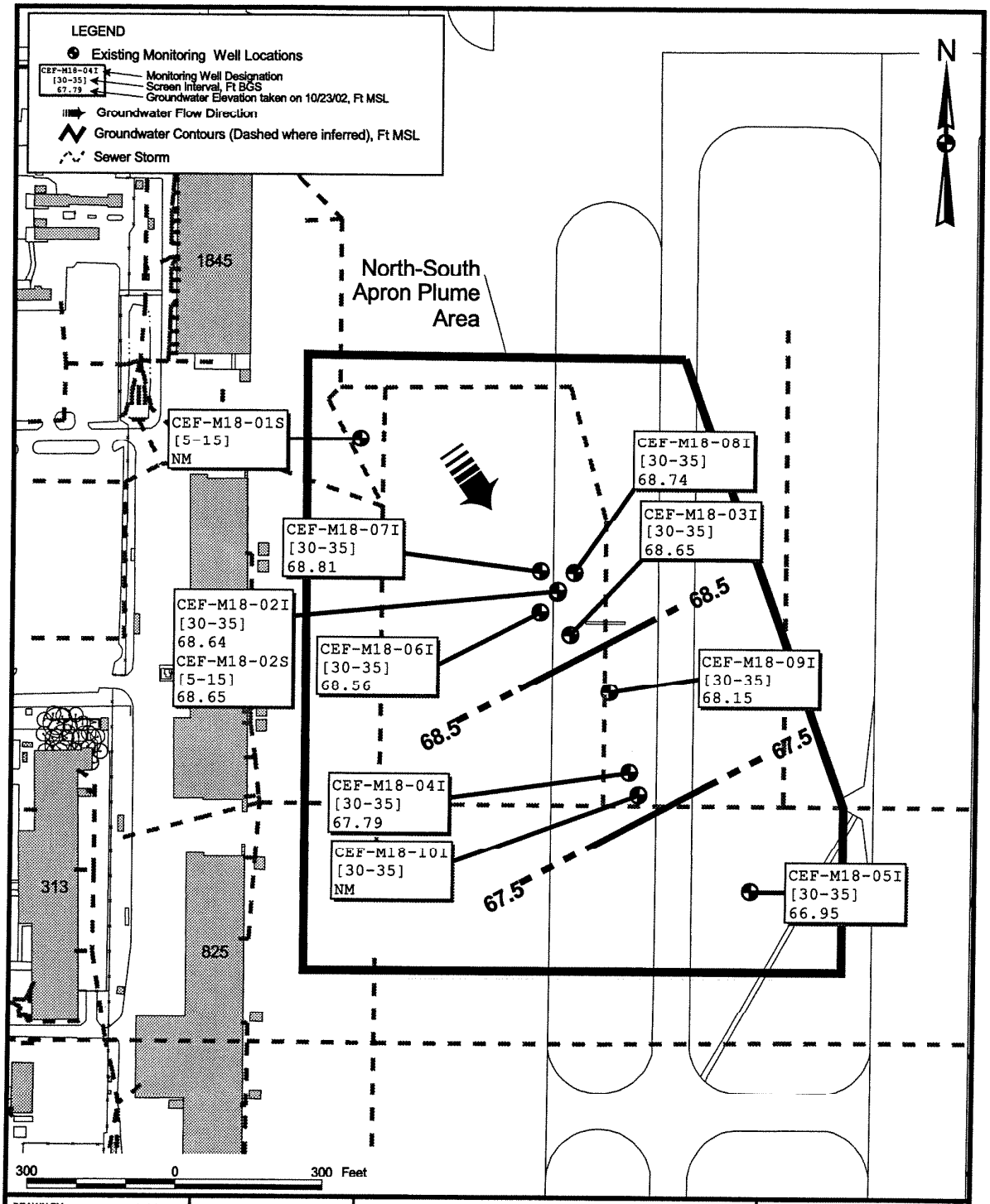
Notes:
Bold indicates concentrations greater than FDEP criteria.
U = not detected at detection limit shown.
NS = not sampled
bgs = below ground surface
FDEP GCTLs taken from Chapter 62-777, FAC.

FIGURES



DRAWN BY: MJJ	DATE: 30Dec02	MONITORING WELL LOCATION MAP NORTH-SOUTH APRON PLUME SUPPLEMENTAL ASSESSMENT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER: 4248
CHECKED BY:	DATE:		APPROVED BY: DATE:
COST/SCHEDULE-AREA			APPROVED BY: DATE:
SCALE: AS NOTED			DRAWING NO.: FIGURE 1 REV: 0

P:\GIS\NAS_CecilField\NorthSouthPlume06.apr 30Dec02 MJJ 01-Layout



DRAWN BY: MJJ	DATE: 30Dec02	GROUNDWATER FLOW MAP NORTH-SOUTH APRON PLUME SUPPLEMENTAL ASSESSMENT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER: 4248
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE: AS NOTED			DRAWING NO.: FIGURE 2 / REV: 0

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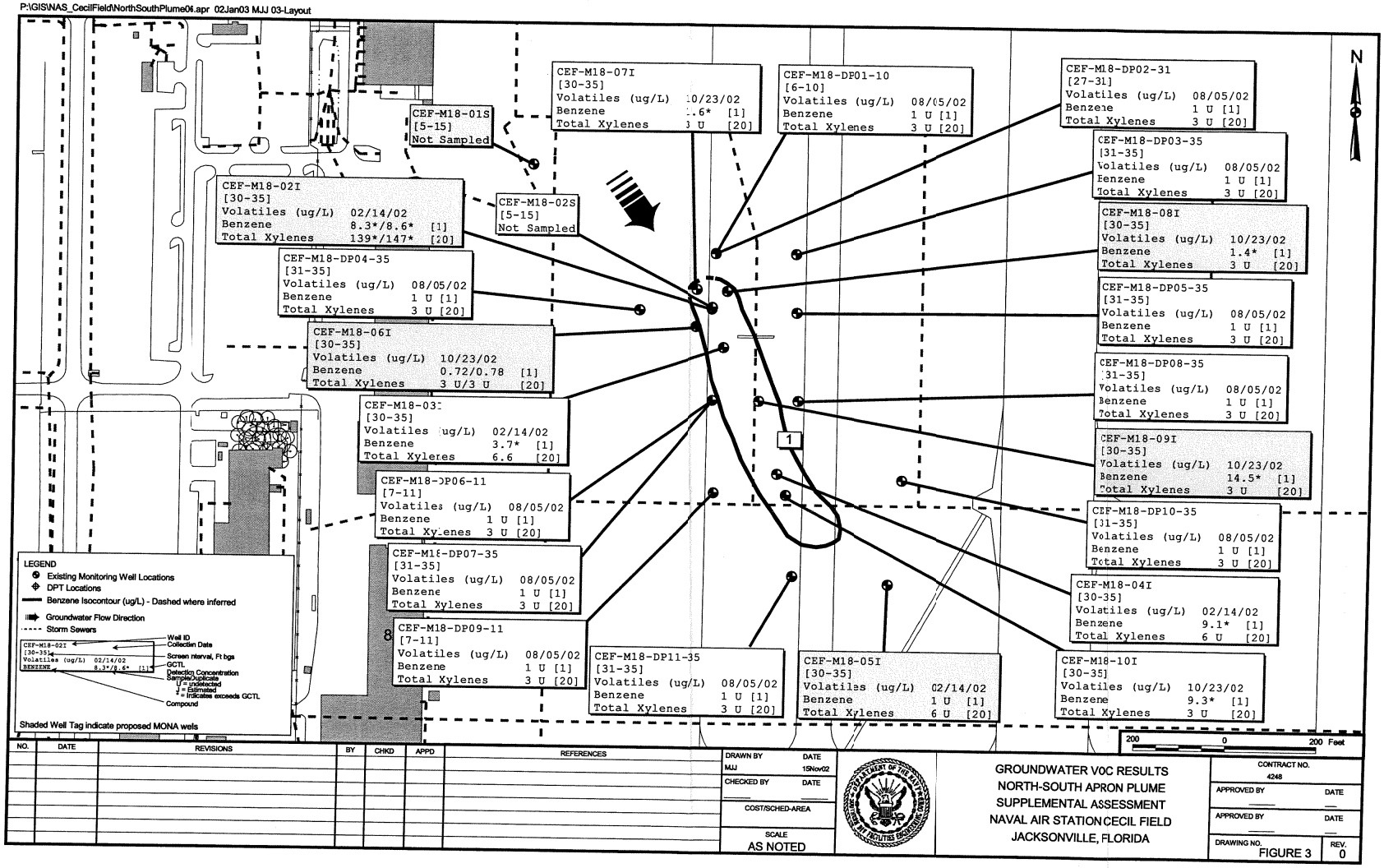
P:\GIS\NAS_CecilField\NorthSouthPlume06.apr 02Jan03 MJJ 03-Layout



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY MJJ DATE 15Nov02
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

GROUNDWATER VOC RESULTS
NORTH-SOUTH APRON PLUME
SUPPLEMENTAL ASSESSMENT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO. 4248
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3
REV. 0

ATTACHMENT A

FDEP LETTER
RE: 4TH QUARTER REPORT FOR NSAP

FLORIDA

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

May 10, 2002

Mr. Wayne Hansel
Code ES245 (UST RPM)
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-9010

RE: Groundwater Monitoring Report, Annual/4th Quarter, 1st Year (February 2002), North-South Apron Plume, Naval Air Station Cecil Field

Dear Mr. Hansel:

I have completed the review of the Groundwater Monitoring Report, Annual/4th Quarter, 1st Year (February 2002), North-South Apron Plume, Naval Air Station Cecil Field, dated May 3, 2002 (received May 8, 2002), prepared and submitted by Tetra Tech NUS, Inc. The document adequately documents the groundwater monitoring that has been conducted at this site. Because of increasing levels of contaminants in two wells and the failure to attain the year one milestone objectives in those wells, Tetra Tech NUS has recommended that monitoring of the site be suspended while supplemental assessment of the site is undertaken. I concur with the recommendation to conduct supplemental site assessment. So long as the supplemental site assessment is conducted within a reasonable time frame, I also concur that the monitoring required in the Department's March 16, 2001 Natural Attenuation Monitoring Plan Approval Order may be suspended while the assessment is performed.

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

Sincerely,

David P. Grabka, P.G.
Remedial Project Manager

ATTACHMENT B

BORING LOGS AND WELL CONSTRUCTION DIAGRAMS

UN4248:4.4:54

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NSAP
PROJECT NUMBER: N4248MW0050225
DRILLING COMPANY: Partridge
DRILLING RIG: DRILLMASTER 400
BORING NUMBER: SB-01
DATE: 10/7/02
GEOLOGIST: Mervin Dale
DRILLER: J. Weatherford

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0-1						Concrete						
	1-4					brown to black	silty fine Sand	SM	dry			0	0
	4-15						No cuttings - see logbook						
	15-35					brown	fine silty Sand	SM	saturated			0	0
													0
							EOB @ 35.5 ft. bls.						

MW2

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0.0

Converted to Well: Yes X No ____ Well I.D. #: CEF-MIP-GT

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NSAP
PROJECT NUMBER: N4248MW0050
DRILLING COMPANY: Partridge
DRILLING RIG: DRILLMASTER 400

BORING NUMBER: SB-02
DATE: 10/7/02
GEOLOGIST: Mervin Dale
DRILLER: J. Weatherford

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0-1'							concrete						
	1-4				dk. brn		fine silty sd.	SM	dry			1.2	1.2
	4-10				dk. brn		silty fine sand	SM	▽ 9 ft. bls.				
	10-30				brn		silty fine sand	SM	wet				
	30-35				lt. brn		silty fine sand	SM	wet			1.1	1.1 MD
							EOB @ 35.5 ft. bls						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area 1.2 MD
Background (ppm): 1.0

Converted to Well: Yes X No ____ Well I.D. #: CCF-MW-7I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NSAP
PROJECT NUMBER: N4248MW0050225
DRILLING COMPANY: Partridge
DRILLING RIG: DrilMaster 400
BORING NUMBER: SB03
DATE: 10/8/02
GEOLOGIST: Mervin Dale
DRILLER: J. Weatherford

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0-2				grey	brn	silty fine SAND	SM	dry				
	2-3				lt.	brn	silty fine SAND	SM	dry				
	3-4				grey	brn	silty fine SAND	SM	dry pine root			0	0
	4-6				grey	brn	silty fine SAND	SM	moist at 6' b/s.				
	7-10				red	brn	silty fine SAND	SM	▽ @ 7' b/s.			0	0
	10-15				red	brn	silty fine SAND	SM	wet				
	15-20				red	brn	silty fine SAND	SM	wet				
	20-25				red	brn	silty fine SAND	SM	wet				
	25-30					brn	silty fine SAND	SM	wet				
	30-35					brn	silty fine SAND	SM	wet				
							EOB @ 35.5 ft. b/s.						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0.0

Converted to Well: Yes X No ____ Well I.D. #: CEF-MW8-8I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NSAP
PROJECT NUMBER: N4248MW0050 225
DRILLING COMPANY: Partridge
DRILLING RIG: DanMASTER 400
BORING NUMBER: SB04
DATE: 10/8/02
GEOLOGIST: Mervin Dale
DRILLER: J. Weatherford

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0-1					brn & blk	fine silty sd.	SM	dry			0	0
	1-2					gray brn	fine silty sd.	SM	dry			0	0
	2-5					gray red	silty fine sd.	SM	variegated, dry				
	3					org brn	silty fine sand	SM					
	3.5					lt gray	silty fine sand	SM					0
	4					lt gray	silty fine sand	SM				0	0
	7					lt brown	silty fine sand	SM	gentle x-sitin to light brown			0.7	0.7
	—								wet (7-7.5)				
	—												
	7-35					lt brn.	silty fine sand	SM	wet			0.7	0.7

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area 0.0
Background (ppm): 0.7

Remarks:

Converted to Well: Yes X No ____ Well I.D. #: CEF-MW-9I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NSAP
PROJECT NUMBER: N4248MW0050
DRILLING COMPANY: Partridge
DRILLING RIG: DrilMaster 400
BORING NUMBER: SB05
DATE: 10/8/02
GEOLOGIST: Mervin Dale
DRILLER: J. Weatherford

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ*	Borehole**	Driller BZ**
	0-2					DK BRN	silty fine SAND	SM	dry				
	2-4					yellow BRN	silty fine SAND	SM	dry				
	4-5					orange	~~silty~~ clayey SAND	SC	moist				
	5-15					LT BRN	silty FINE SAND	SM	▽ ~ 7 ft. bls.			1	1
	20-25					LT BRN	SILTY FINE SAND	SM	wet			1	1.0
	25-30					LT. BRN	SILTY FINE SAND	SM	wet			1	1.2
	30-35.5					LT. BRN	SILTY FINE SAND	SM	wet				
							EOB @ 35.5 FT.	BLS.					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 1.0

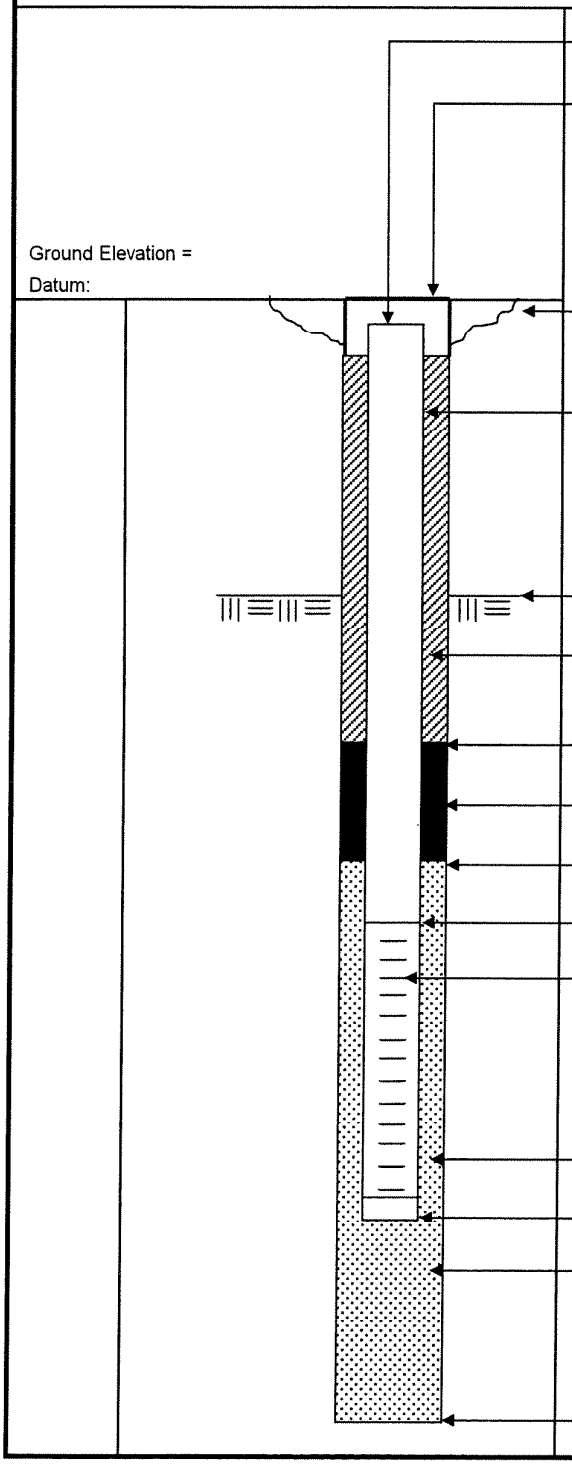
Converted to Well: Yes X No ____ Well I.D. #: CEF-MW-10I

Tetra Tech NUS, Inc.

WELL No.: CEF-M18-6I

MONITORING WELL SHEET

PROJECT:	NAS Cecil Field	DRILLING Co.:	Partridge	BORING No.:	SB-01
PROJECT No.:	4248	DRILLER:	Jeff Weatherford	DATE COMPLETED:	10/7/02
SITE:	NSAP	DRILLING METHOD:	Hollow Stem	NORTHING:	
GEOLOGIST:	MERVIN DALE	DEV. METHOD:	Submersible	EASTING:	



Elevation / Depth of Top of Riser: 12 IN.

Elevation / Height of Top of Surface Casing: 10 ft.

I.D. of Surface Casing: MW2 8 inch

Type of Surface Casing: Steel, bottdown w/nylon skirt

Type of Surface Seal: Quikrete Concrete

I.D. of Riser: 2 inch

Type of Riser: Sch. 40, PVC

Borehole Diameter: 8 inch

Elevation / Depth Top of Rock: N/A

Type of Backfill: Type I Portland Cement

Elevation / Depth of Seal: 125 ft.

Type of Seal: 30/65 Fine Sand

Elevation / Depth of Top of Filter Pack: 128 FT.

Elevation / Depth of Top of Screen: 130 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 FT.

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Sand

Elevation / Depth of Bottom of Screen: 135 FT.

Elevation / Depth of Bottom of Filter Pack: 135.5 FT.

Type of Backfill Below Well: 20/30 Sand

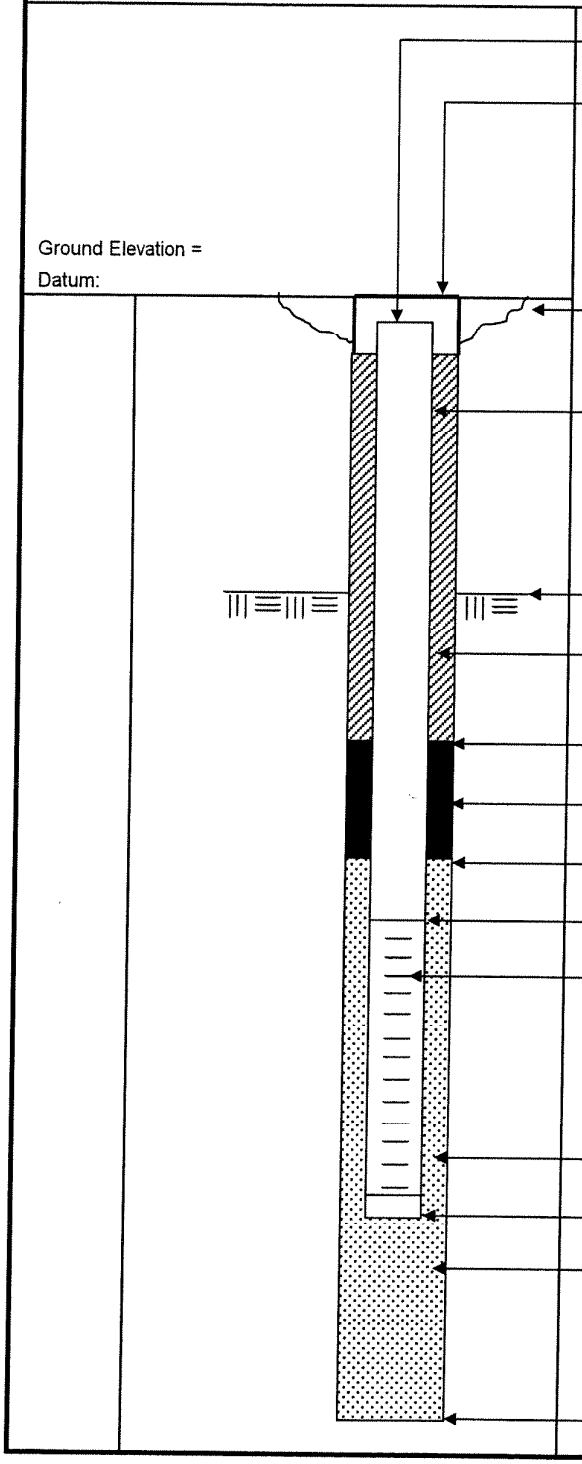
Elevation / Total Depth of Borehole: 135.5 FT.

Tetra Tech NUS, Inc.

WELL No.: CEF-M18-7I

MONITORING WELL SHEET

PROJECT:	NAS Cecil Field	DRILLING Co.:	Partridge	BORING No.:	SB-02
PROJECT No.:	4248	DRILLER:	Jeff Weatherford	DATE COMPLETED:	10/7/02
SITE:	NSAP	DRILLING METHOD:	Hollow Stem	NORTHING:	
GEOLOGIST:	MERVIN DALE	DEV. METHOD:	Submersible	EASTING:	



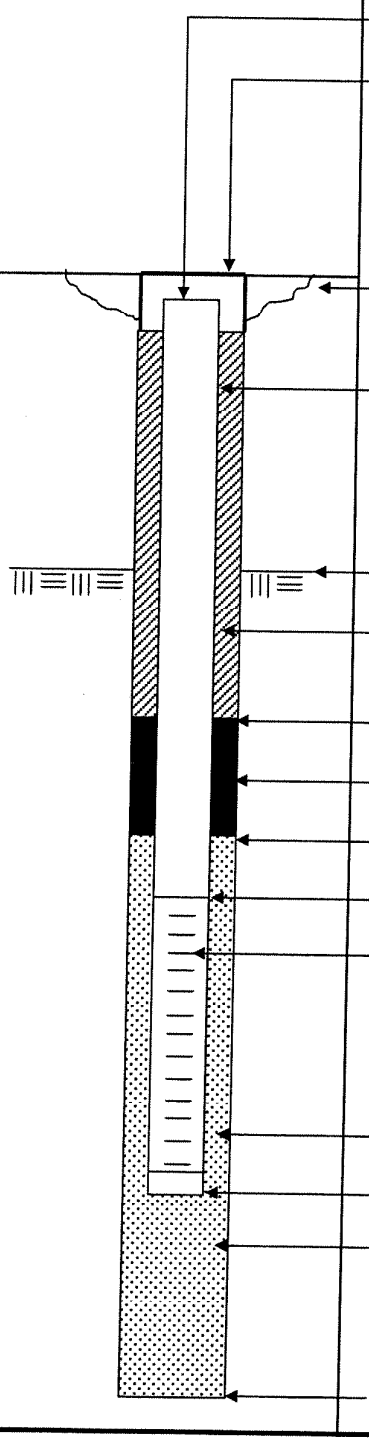
- Elevation / Depth of Top of Riser: 1 2IN.
- Elevation / Height of Top of Surface Casing: 1 0 FT.
- I.D. of Surface Casing: 8 inch
- Type of Surface Casing: Steel, bolt down w/ nylon skirt
- Type of Surface Seal: QUIKrete concrete
- I.D. of Riser: 2 inch
- Type of Riser: Sch. 40 PVC
- Borehole Diameter: 8 inch
- Elevation / Depth Top of Rock: 1 N/A
- Type of Backfill: Type I Portland Cement
- Elevation / Depth of Seal: ~~N/A~~ 25 FT. mud
- Type of Seal: 30/65 Fine Sand
- Elevation / Depth of Top of Filter Pack: 127.5 FT.
- Elevation / Depth of Top of Screen: 130 FT.
- Type of Screen: Sch. 40 PVC
- Slot Size x Length: 0.010 inch x 5 FT.
- I.D. of Screen: 2 inch
- Type of Filter Pack: 20/30 Sand
- Elevation / Depth of Bottom of Screen: 135 FT.
- Elevation / Depth of Bottom of Filter Pack: 135.5 FT.
- Type of Backfill Below Well: 20/30 Sand
- Elevation / Total Depth of Borehole: 135.5 FT.

Tetra Tech NUS, Inc.

WELL No.: CEF-M18-8I

MONITORING WELL SHEET

PROJECT:	NAS Cecil Field	DRILLING Co.:	Partridge	BORING No.:	SB03
PROJECT No.:	4248	DRILLER:	Jeff Weatherford	DATE COMPLETED:	10/8/02
SITE:	NSAP	DRILLING METHOD:	Hollow Stem	NORTHING:	
GEOLOGIST:	MERVIN DALE	DEV. METHOD:	Submersible	EASTING:	



Ground Elevation =

Datum:

Elevation / Depth of Top of Riser: 1 2 IN.

Elevation / Height of Top of Surface Casing: 1 IN. AGL ~~1 0 FT.~~

I.D. of Surface Casing: 8 inch

Type of Surface Casing: Steel, boltdown manhole with nylon skirt

Type of Surface Seal: Quikrete Concrete 2'x2'x6" pad

I.D. of Riser: 2 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 8 inch

Elevation / Depth Top of Rock: N/A

Type of Backfill: Type I Portland Cement

Elevation / Depth of Seal: 125 FT.

Type of Seal: 30/65 Fine Sand

Elevation / Depth of Top of Filter Pack: 128 FT.

Elevation / Depth of Top of Screen: 130 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 Inch x 5 FT.

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Sand

Elevation / Depth of Bottom of Screen: 135 FT.

Elevation / Depth of Bottom of Filter Pack: 135.5 FT.

Type of Backfill Below Well: 20/30 Sand

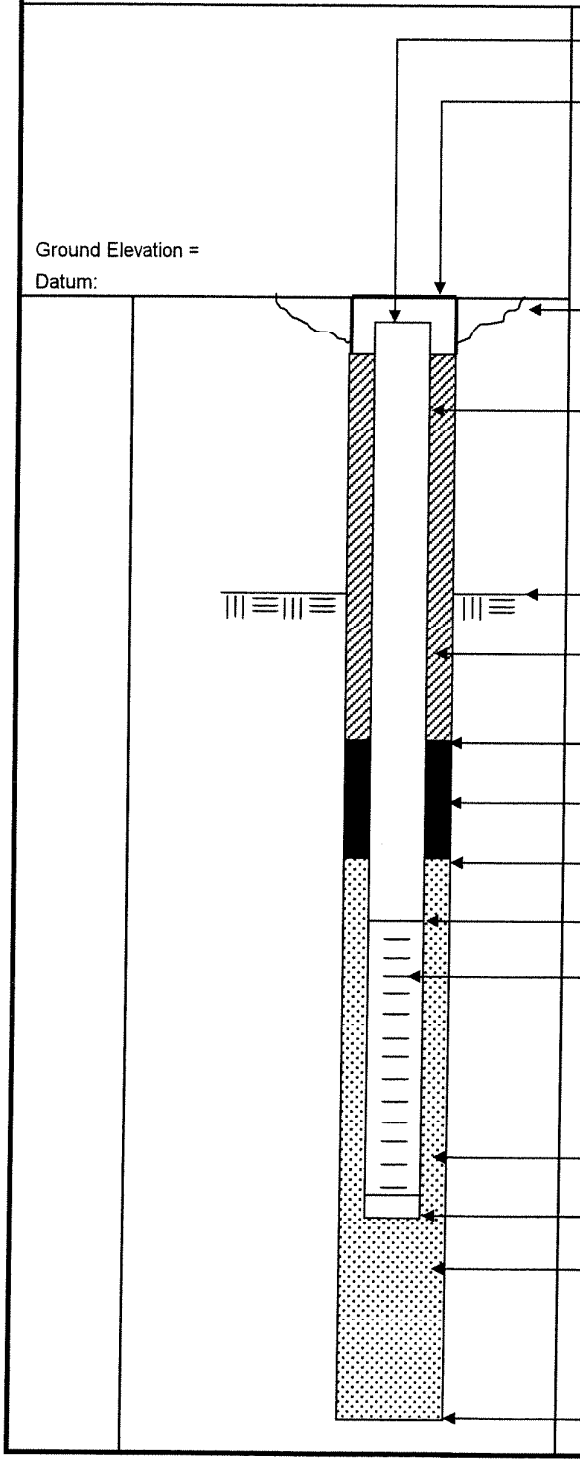
Elevation / Total Depth of Borehole: 135.5 FT.

Tetra Tech NUS, Inc.

WELL No.: CEF-M18-9I

MONITORING WELL SHEET

PROJECT:	NAS Cecil Field	DRILLING Co.:	Partridge	BORING No.:	SB-04
PROJECT No.:	4248	DRILLER:	J. Weatherford	DATE COMPLETED:	10/8/02
SITE:	NSAP	DRILLING METHOD:	Hollow Stem	NORTHING:	
GEOLOGIST:	MERVIN DALE	DEV. METHOD:	Submersible	EASTING:	



Elevation / Depth of Top of Riser: 12 IN.

Elevation / Height of Top of Surface Casing: 1 IN. AGL ~~10 FT.~~

I.D. of Surface Casing: 8 inch

Type of Surface Casing: Steel, bolt down manhole w/ nylon skirt

Type of Surface Seal: Quikcrete Concrete

I.D. of Riser: 2 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 8 inch

Elevation / Depth Top of Rock: NA

Type of Backfill: Type I Portland cement

Elevation / Depth of Seal: 124 FT.

Type of Seal: 30/65 Fine Sand

Elevation / Depth of Top of Filter Pack: 127'9"

Elevation / Depth of Top of Screen: 130 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 IN. X 5 FT.

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Sand

Elevation / Depth of Bottom of Screen: 135 FT.

Elevation / Depth of Bottom of Filter Pack: 135.5 FT.

Type of Backfill Below Well: 20/30 Sand

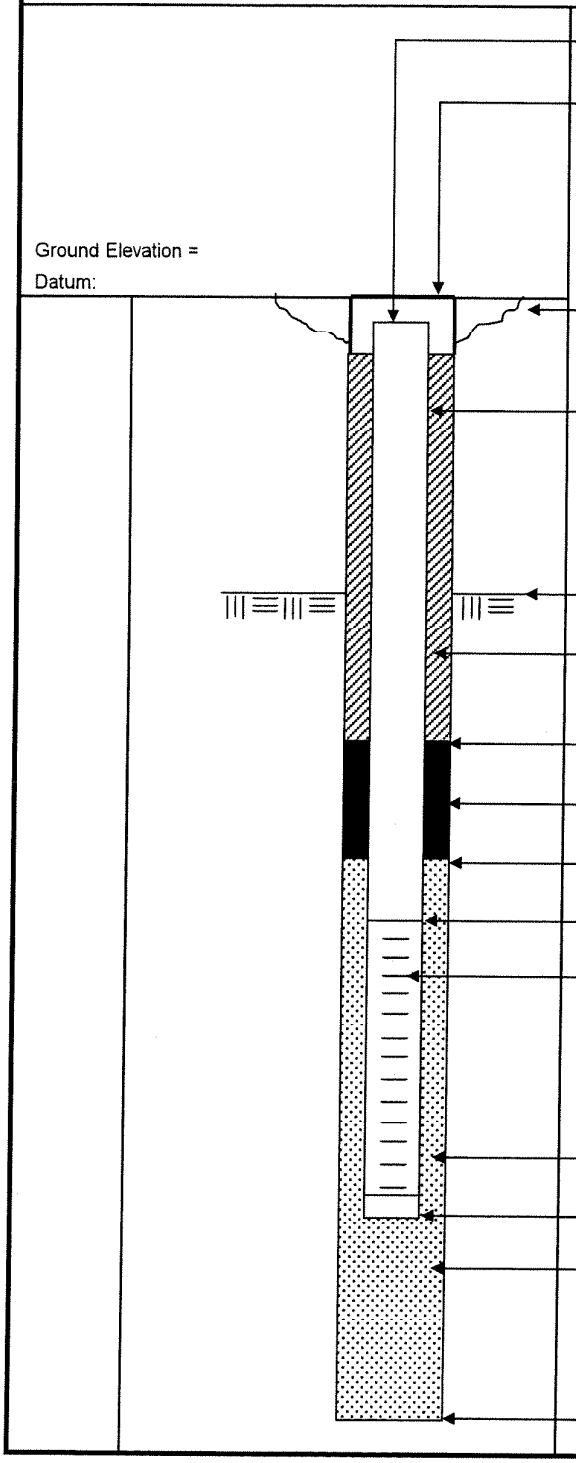
Elevation / Total Depth of Borehole: 135.5 FT.

Tetra Tech NUS, Inc.

WELL No.: CEF-MW-10I

MONITORING WELL SHEET

PROJECT:	NAS Cecil Field	DRILLING Co.:	Partridge	BORING No.:	SB-05
PROJECT No.:	4248	DRILLER:	Jeff Weatherford	DATE COMPLETED:	10/8/02
SITE:	NSAP	DRILLING METHOD.	Hollow Stem	NORTHING:	
GEOLOGIST:	MERVIN DALE	DEV. METHOD:	Submersible	EASTING:	



- Elevation / Depth of Top of Riser: 12 IN.
- Elevation / Height of Top of Surface Casing: 11 IN.
- I.D. of Surface Casing: 8 inch
- Type of Surface Casing: Steel, boltdown with mylon skirt
- Type of Surface Seal: Quikrete concrete 2'x2'x6" pad
- I.D. of Riser: 2 inch
- Type of Riser: Sch. 40 PVC
- Borehole Diameter: 8 inch
- Elevation / Depth Top of Rock: N/A
- Type of Backfill: Type I portland cement
- Elevation / Depth of Seal: 125 FT.
- Type of Seal: 30/65 FINE Sand
- Elevation / Depth of Top of Filter Pack: 127'10"
- Elevation / Depth of Top of Screen: 130 FT.
- Type of Screen: Sch. 40 PVC
- Slot Size x Length: 0.010 IN x 5 FT.
- I.D. of Screen: 2 INCH
- Type of Filter Pack: 20/30 Sand
- Elevation / Depth of Bottom of Screen: 135 FT.
- Elevation / Depth of Bottom of Filter Pack: 135.5 FT.
- Type of Backfill Below Well: 20/30 Sand
- Elevation / Total Depth of Borehole: 135.5 FT.

ATTACHMENT C

MONITORING PLAN APPROVAL ORDER

M.Ok

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

March 16, 2001

Mr. Nick Ugolini
Code 1843 (UST RPM)
Southern Division
Naval Facilities Engineering Command
Post Office Box 190010
North Charleston, South Carolina 29419-9010

RE: Site Assessment Report, North-South Apron Plume, Naval Air Station Cecil Field, Jacksonville, Florida

Dear Mr. Ugolini:

I have completed the review of the Site Assessment Report (SAR) and Monitoring Only Proposal (MOP) for the North-South Apron Plume, Naval Air Station Cecil Field, dated February 2001 (received March 1, 2001), prepared and submitted by Tetra Tech NUS, Inc. The SAR provides adequate evidence that natural attenuation at this site will reduce contaminant concentrations to below groundwater cleanup target levels in five years. I have attached a Monitoring Only Plan Approval Order signed by Douglas A. Jones specifying the actions to be taken in monitoring the site.

I also recommend that monitoring well CEF-M18-01S be resampled and analyzed for VOCs during the first quarter of monitoring to verify that the chlorinated hydrocarbons detected in September 2000, but not in January or November 2000, have not reappeared.

If I can be of any further assistance with this matter, please contact me at (850) 488-3693.

Sincerely,

David P. Grabka
Remedial Project Manager

cc: Scott Glass, Southern Division
Debbie Vaughn-Wright, USEPA Region 4

Mark Speranza, TetraTech NUS, Pittsburgh
Sam Ross, CH2M Hill Constructors, Inc.
Mike Fitzsimmons, FDEP Northeast District

TJB TJB JJC JJC ESN ESN

Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

March 16, 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Nick Ugolini
Code 1843 (UST RPM)
Southern Division
Naval Facilities Engineering Command
Post Office Box 190010
North Charleston, South Carolina 29419-9010

Subject: Natural Attenuation Monitoring Plan Approval Order
North-South Apron Plume
Cecil Field Naval Air Station
Jacksonville, Duval County

Dear Mr. Ugolini:

The Bureau of Waste Cleanup has completed the review of the Site Assessment Report and Natural Attenuation Monitoring Plan dated February 2001 (received March 1, 2001), submitted for the petroleum product discharge discovered at this site. Pursuant to Rule 62-770.690, Florida Administrative Code (F.A.C.), the Department of Environmental Protection (Department) 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.

The monitoring wells to be sampled, the sampling parameters, and the sampling frequency are as follows:

Monitoring Wells	Contaminants of Concern	Frequency	Duration
CEF-M18-02I, CEF-M18-03I, CEF-M18-04I, CEF-M18-05I	BTEX	Quarterly	Five years

The approved Remedial Action by Natural Attenuation monitoring period is five years. The sampling frequency will be evaluated following the submittal of the first annual report to determine whether semiannual or annual sampling may be appropriate.

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:

	CEF-M18-02I	CEF-M18-03I	CEF-M18-04I
Benzene			
End of year 1	5 µg/l	5 µg/l	5 µg/l
End of year 2	4 µg/l	4 µg/l	4 µg/l
End of year 5	<1 µg/l	<1 µg/l	<1 µg/l
Xylenes			
End of year 1	65 µg/l	65 µg/l	65 µg/l
End of year 2	55 µg/l	55 µg/l	55 µg/l
End of year 5	<20 µg/l	<20 µg/l	<20 µg/l

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

Contaminated wells:
CEF-M18-02I, CEF-M18-03I and CEF-M18-04I: 100 µg/l Benzene; 200 µg/l Total Xylenes

Perimeter well (temporary point of compliance):
CEF-M18-04I: 1 µg/l Benzene; 20 µg/l Total Xylenes

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.

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 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, 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, Southern Division Naval Facilities Engineering Command, shall mail a copy of the request to Commanding Officer, Southern Division Naval Facilities Engineering Command 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, within 21 days of receipt of this Order. Petitioner, if different from Commanding Officer, Southern Division Naval Facilities Engineering Command , shall mail a copy of the petition to Commanding Officer, Southern Division Naval Facilities Engineering Command 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).

Questions

Any questions regarding the Department's review of your Site Assessment Report should be directed to David P. Grabka at (850) 488-3693. 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/dpg

cc: Mike Fitzsimmons, FDEP Northeast District Office
Scott Glass, Southern Division
Debbie Vaughn-Wright, USEPA Region 4
Mark Speranza, Tetra Tech NUS, Pittsburgh
Sam Ross, CH2M Hill Constructors, Inc.
File

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
(or Deputy Clerk)

3/21/01
Date

Mr. Nick Ugolini
North-South Apron Plume
Cecil Field Naval Air Station

P.G. CERTIFICATION

SAR/MOP for North-South Apron Plume

I hereby certify that in my professional judgement, the components of this Site Assessment Report and Monitoring Only Plan for the North-South Apron Plume, Cecil Field Naval Air Station, Jacksonville, Florida, satisfy the requirements set forth in Chapter 62-770, F.A.C., and that the geological interpretations in this report provide reasonable assurances of achieving the Assessment objectives stated in Chapter 62-770, F.A.C.

____ I personally completed this review.

X This review was conducted by David P. Grabka working under my supervision.

TIMOTHY J. BAHR
LICENSE
NO. 1209
STATE OF
FLORIDA
PROFESSIONAL GEOLOGIST

Timothy J. Bahr, P.G.
Professional Geologist Supervisor
Technical Review Section

3/16/01
Date

ATTACHMENT D

GROUNDWATER ANALYTICAL REPORT

FOR DPT PHASE OF WORK

Sample Summary

Tetra Tech, NUS

Job No: F14132

NAS Cecil Field-CTO-248
Project No: N4248 WR41(SS)

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
F14132-1	08/05/02	14:40	MD	08/07/02	AQ	Ground Water	CEF-M18-DP01-10
F14132-2	08/05/02	15:25	MD	08/07/02	AQ	Ground Water	CEF-M18-DP02-31
F14132-3	08/05/02	16:15	MD	08/07/02	AQ	Ground Water	CEF-M18-DP06-11
F14132-4	08/05/02	16:40	MD	08/07/02	AQ	Ground Water	CEF-M18-DP07-35
F14132-5	08/06/02	09:00	MD	08/07/02	AQ	Ground Water	CEF-M18-DP04-35
F14132-6	08/06/02	09:35	MD	08/07/02	AQ	Ground Water	CEF-M18-DP09-11
F14132-7	08/06/02	10:10	MD	08/07/02	AQ	Ground Water	CEF-M18-DP11-35
F14132-8	08/06/02	10:50	MD	08/07/02	AQ	Ground Water	CEF-M18-DP08-35
F14132-9	08/06/02	11:25	MD	08/07/02	AQ	Ground Water	CEF-M18-DP05-35
F14132-10	08/06/02	12:05	MD	08/07/02	AQ	Ground Water	CEF-M18-DP03-35
F14132-11	08/06/02	13:00	MD	08/07/02	AQ	Ground Water	CEF-M18-DP10-35
F14132-12	08/06/02	00:00	MD	08/07/02	AQ	Ground Water	CEF-M18-DU01

Report of Analysis

Client Sample ID:	CEF-M18-DP01-10		
Lab Sample ID:	F14132-1	Date Sampled:	08/05/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017488.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71 43 2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

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-M18-DP02-31		
Lab Sample ID:	F14132-2	Date Sampled:	08/05/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017489.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	91%		80-120%

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-M18-DP06-11		
Lab Sample ID:	F14132-3	Date Sampled:	08/05/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017490.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

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-M18-DP07-35		
Lab Sample ID:	F14132-4	Date Sampled:	08/05/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017491.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	93%		80-120%

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-M18-DP04-35		
Lab Sample ID:	F14132-5	Date Sampled:	08/06/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017492.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	96%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

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-M18-DP09-11		
Lab Sample ID:	F14132-6	Date Sampled:	08/06/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017493.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		80-120%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	92%		80-120%

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-M18-DP11-35		
Lab Sample ID:	F14132-7	Date Sampled:	08/06/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017494.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	95%		80-120%

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-M18-DP08-35		
Lab Sample ID:	F14132-8	Date Sampled:	08/06/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017495.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	111%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	93%		80-120%

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-M18-DP05-35		
Lab Sample ID:	F14132-9	Date Sampled:	08/06/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017496.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

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-M18-DP03-35		
Lab Sample ID:	F14132-10	Date Sampled:	08/06/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017497.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	111%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	96%		80-120%

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-M18-DP10-35		
Lab Sample ID:	F14132-11	Date Sampled:	08/06/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017498.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	112%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	88%		80-120%

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-M18-DU01		
Lab Sample ID:	F14132-12	Date Sampled:	08/06/02
Matrix:	AQ - Ground Water	Date Received:	08/07/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G0017499.D	1	08/13/02	KW	n/a	n/a	VG571
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	113%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	91%		80-120%

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

ATTACHMENT E

GROUNDWATER ANALYTICAL REPORT

FOR PERMANENT WELLS

Sample Summary

Tetra Tech, NUS

Job No: F15161

NAS Cecil Field-CTO-248
Project No: N4248-WR61

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
F15161-1	10/23/02	13:40	MD	10/25/02	AQ	Ground Water	CEF-M18-7I-05
F15161-2	10/23/02	14:20	MD	10/25/02	AQ	Ground Water	CEF-M18-6I-05
F15161-3	10/23/02	15:35	MD	10/25/02	AQ	Ground Water	CEF-M18-8I-05
F15161-4	10/23/02	16:10	MD	10/25/02	AQ	Ground Water	CEF-M18-9I-05
F15161-5	10/23/02	17:15	MD	10/25/02	AQ	Ground Water	CEF-M18-10I-05
F15161-6	10/23/02	00:00	MD	10/25/02	AQ	Ground Water	CEF-M18-DU01-05

Report of Analysis

Client Sample ID:	CEF-M18-7I-05		
Lab Sample ID:	F15161-1	Date Sampled:	10/23/02
Matrix:	AQ - Ground Water	Date Received:	10/25/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0013016.D	1	11/05/02	JG	n/a	n/a	VC573
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71 43 2	Benzene	1.6	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.70	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		86-115%
17060-07-0	1,2-Dichloroethane-D4	98%		78-125%
2037-26-5	Toluene-D8	97%		87-113%
460-00-4	4-Bromofluorobenzene	96%		84-117%

ND = Not detected MDL - Method Detection Limit
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-M18-6I-05		
Lab Sample ID:	F15161-2	Date Sampled:	10/23/02
Matrix:	AQ - Ground Water	Date Received:	10/25/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0013017.D	1	11/05/02	JG	n/a	n/a	VC573
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.72	1.0	0.50	ug/l	J
108-88-3	Toluene	2.3	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.70	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		86-115%
17060-07-0	1,2-Dichloroethane-D4	97%		78-125%
2037-26-5	Toluene-D8	96%		87-113%
460-00-4	4-Bromofluorobenzene	96%		84-117%

ND = Not detected MDL - Method Detection Limit
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-M18-8I-05		
Lab Sample ID:	F15161-3	Date Sampled:	10/23/02
Matrix:	AQ - Ground Water	Date Received:	10/25/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0013018.D	1	11/05/02	JG	n/a	n/a	VC573
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.4	1.0	0.50	ug/l	
108-88-3	Toluene	0.80	1.0	0.50	ug/l	J
100-41-4	Ethylbenzene	ND	1.0	0.70	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		86-115%
17060-07-0	1,2-Dichloroethane-D4	101%		78-125%
2037-26-5	Toluene-D8	97%		87-113%
460-00-4	4-Bromofluorobenzene	94%		84-117%

ND = Not detected MDL - Method Detection Limit
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-M18-9I-05		
Lab Sample ID:	F15161-4	Date Sampled:	10/23/02
Matrix:	AQ - Ground Water	Date Received:	10/25/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0013019.D	1	11/05/02	JG	n/a	n/a	VC573
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	14.5	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.70	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		86-115%
17060-07-0	1,2-Dichloroethane-D4	96%		78-125%
2037-26-5	Toluene-D8	97%		87-113%
460-00-4	4-Bromofluorobenzene	97%		84-117%

ND = Not detected MDL - Method Detection Limit
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-M18-10I-05		
Lab Sample ID:	F15161-5	Date Sampled:	10/23/02
Matrix:	AQ - Ground Water	Date Received:	10/25/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0013020.D	1	11/05/02	JG	n/a	n/a	VC573
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	9.3	1.0	0.50	ug/l	
108-88-3	Toluene	3.8	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.70	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		86-115%
17060-07-0	1,2-Dichloroethane-D4	99%		78-125%
2037-26-5	Toluene-D8	97%		87-113%
460-00-4	4-Bromofluorobenzene	99%		84-117%

ND = Not detected MDL - Method Detection Limit
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-M18-DU01-05		
Lab Sample ID:	F15161-6	Date Sampled:	10/23/02
Matrix:	AQ - Ground Water	Date Received:	10/25/02
Method:	SW846 8260B	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0013021.D	1	11/05/02	JG	n/a	n/a	VC573
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.78	1.0	0.50	ug/l	J
108-88-3	Toluene	2.8	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.70	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		86-115%
17060-07-0	1,2-Dichloroethane-D4	100%		78-125%
2037-26-5	Toluene-D8	98%		87-113%
460-00-4	4-Bromofluorobenzene	99%		84-117%

ND = Not detected MDL - Method Detection Limit
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