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NAS CECIL FIELD, FL
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SUPPLEMENTAL ASSESSMENT LETTER REPORT FOR BUILDING 46 NAS CECIL FIELD FL
5/28/2003
TETRA TECH NUS INC

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May 28, 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
Building 46
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) has completed a supplemental assessment at Building 46 and is pleased to submit this letter report in accordance with the referenced Contract Task Order (CTO). 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.

SITE BACKGROUND

Building 46 was the former Base gas station with eight underground storage tanks that contained both leaded and unleaded gasoline and diesel fuel. The tanks were removed in June 1988 and a Site Assessment Report was completed in December 1998 (Harding Lawson Associates) to delineate the extent of the soil and groundwater contamination. A Remedial Action Plan (RAP) was submitted in March 1999 (TtNUS), and the remedial system was installed in the period between November 2000 and January 2001 by CH2M Hill Constructors, Inc. During routine groundwater monitoring events, benzene was detected in downgradient perimeter monitoring well CEF-046-26I at concentrations that exceeded the groundwater cleanup target level (GCTL) (Attachment A). After discussions with the Base Closure Team (BCT), it was agreed that a supplemental assessment should be conducted at the site. The primary objective of the supplemental assessment was to delineate the dissolved hydrocarbon plume in the intermediate aquifer zone downgradient of monitoring well CEF-046-26I in order that the existing remedial groundwater system could be extended to address this unaffected contamination. 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 April 2002, TtNUS personnel mobilized to the site to conduct preliminary screening using a direct push technology (DPT) rig equipped with a membrane interface probe (MIP). Four soil borings were installed to the south and southwest of CEF-046-26I (see Figure 2). The DPT-MIP data was used to aid in determining the locations for the next set of permanent monitoring wells. During the June 2002 BCT meeting, the DPT-MIP data was presented. Prior to implementing the well installations, the BCT requested that monitoring well CEF-46-19I be sampled, and that the data be evaluated in case the proposed well locations required alteration. TtNUS sampled well CEF-46-19I on June 20, 2002. Prior to collecting the sample, the depth to water was measured in this well using an electronic water level indicator. After gauging the well, it was purged with a peristaltic pump using low-flow purging techniques. Subsequent to purging, the groundwater sample was collected from this well using low flow quiescent sampling techniques. The groundwater sample was placed on ice and shipped under chain of custody to Accutest Laboratories for the following analyses: benzene, toluene, ethylbenzene, and total xylenes (BTEX) using United States Environmental Protection Agency (USEPA) Method SW846 8260B; polynuclear aromatic hydrocarbons (PAHs) using USEPA Method SW846 8310; and total recoverable petroleum hydrocarbons (TRPH) by the Florida Petroleum Range Organics (FL-PRO) method.

Following review of the analytical data from well CEF-46-19I, the proposed well locations were retained. Between September 4 and 6, 2002, TtNUS personnel supervised the installation of three permanent monitoring wells. Two intermediate (CEF-046-28I and CEF-46-29I) and one deep groundwater monitoring wells (CEF-046-27D) were installed to determine the horizontal and vertical extent of the dissolved hydrocarbon plume. The boring logs, well construction diagrams, and certificates of conformance for these three wells are provided in Attachment B. No boring log is provided for monitoring well CEF-046-27D, since it was installed using mud rotary techniques. On September 23, 2002, TtNUS personnel mobilized to the site to collect water samples from monitoring wells CEF-046-28I and CEF-046-29I. Due to development issues, the sampling of monitoring well CEF-046-27D was delayed until October 23, 2002. Prior to collecting the samples, the depth to water was measured in each well using an electronic water level indicator. After gauging the wells, each well was purged with a peristaltic pump using low-flow purging techniques. Subsequent to purging, groundwater samples were collected from each well using low flow quiescent sampling techniques. Following each collection event, the groundwater samples were placed on ice and shipped under chain of custody to Accutest Laboratories for analysis. The samples were analyzed for BTEX, PAHs, and TRPH using the same methods previously cited. On October 28, 2002, TtNUS personnel mobilized to the site to collect synoptic water levels from a select set of monitoring wells on the west side of the site.

The laboratory analytical results from the September 23, 2003, sampling event indicated that the concentrations of one or more contaminants of concern (COCs) exceeded GCTLs in CEF-046-28I and CEF-046-29I. After discussing the data with the BCT, it was agreed that two additional intermediate zone monitoring wells should be installed to delineate the downgradient extent of the dissolved hydrocarbon plume. On December 17, 2002, TtNUS personnel mobilized to the site to supervise the installation of the two additional monitoring wells (CEF-046-30I and CEF-046-31I). The boring logs, well construction diagrams, and certificates of conformance for the two wells are provided in Attachment B.

On January 7, 2003, TtNUS personnel mobilized to the site to collect water samples from monitoring wells CEF-046-30I and CEF-046-31I. Following collection, the groundwater samples were placed on ice and shipped under chain of custody to Accutest Laboratories for analysis. The samples were analyzed for BTEX, PAHs, and TRPH using the same set of methods cited earlier for the other supplemental monitoring wells.

GROUNDWATER FLOW RESULTS

The depth to water in the monitoring wells ranged from 5.15 to 8.28 feet (ft) below top of casing (btoc). The depth-to-water measurements, along with top-of-casing elevations, were used to calculate groundwater elevations. The groundwater elevation data was used to estimate the groundwater flow direction. Using the October 28, 2002, data, the estimated groundwater flow direction was to the northeast. The groundwater elevations are summarized in Table 1. The groundwater flow direction to the east-northeast is depicted on Figure 3.

INTERMEDIATE ZONE GROUNDWATER ANALYTICAL RESULTS

Benzene continues to be the primary COC with the highest reported concentrations in the area of concern at this site. As indicated by Attachment A, the concentrations for benzene in samples from well CEF-46-26I are typically above 2,000 micrograms per liter (µg/L), while the other BTEX compounds were typically reported at an order of magnitude lower concentration than benzene. The PAHs and TRPH were not detected in any of the samples submitted as part of this supplemental assessment.

The benzene concentrations for the samples from the sidegradient monitoring wells CEF-46-19I and CEF-046-28I were reported at concentrations of 286 and 18.1 µg/L, respectively. Both those concentrations exceed the GCTL for benzene. For the sample from downgradient monitoring well CEF-046-29I, benzene was reported at a concentration of 256 µg/L. Other COCs exceeded GCTLs in samples from those monitoring wells; however, they were at less elevated concentrations. The BTEX compounds were not detected in intermediate monitoring wells CEF-46-30I and CEF-46-31I. The laboratory analytical results are summarized in Table 2. The BTEX data for the supplemental assessment monitoring wells and other select monitoring wells is depicted on Figure 4, and the original plume contour from the RAP for this site has been altered to include this new information. The laboratory analytical reports for the June, September, and October 2002 sampling events are provided in Attachment C.

DEEP ZONE GROUNDWATER ANALYTICAL RESULTS

Monitoring well CEF-46-27D was installed adjacent to CEF-46-26I to vertically delineate the groundwater contamination in that area. Only toluene was detected in the samples from deep monitoring well CEF-46-27D, and the concentration of 1.9 µg/L was below the respective GCTL. The laboratory analytical report for this sampling event is provided in Attachment C.

CONCLUSIONS AND RECOMMENDATIONS

Previous groundwater flow data from the RAP appeared to indicate that a groundwater divide existed to the east of New World Avenue, and that groundwater flow was to the southeast on the west side of New World Avenue. Our assessment indicates almost a 180-degree shift in the groundwater flow direction may have occurred. However, the extent of contamination (shown by Figure 4) is not presently affected by the remedial system, and the likelihood that this contamination would remain unaffected requires that TtNUS recommend extending the current system to cover the unaffected additional area shown on Figure 4.

Based on the results of this supplemental assessment, the horizontal extent of the dissolved hydrocarbon plume in the area southeast of well CEF-46-26I, as shown by Figure 4, is now delineated sufficiently to allow for appropriate extension of the existing remedial groundwater system. The vertical extent of contamination in the area of well CEF-46-26I is above 80 ft below land surface. Therefore, TtNUS recommends that a RAP Modification be prepared to address the portion of the plume that falls outside the area of influence of the current remedial system.

If you have any questions regarding the information presented in this document, please contact me by phone at (813) 806-0202 or via e-mail at calliganp@ttnus.com.

Sincerely,

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

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

PC/mwd

Attachments (9)

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
Biulding 46
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well Identification	Well Depth (ft, btoc)	Top-of-Casing Elevation (ft, msl)	October 28, 2003	
			Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)
CEF-46-18I	30.5	78.80	5.15	73.65
CEF-46-19I	50.5	79.00	5.63	73.37
CEF-46-20I	30.5	79.50	6.08	73.42
CEF-46-21I	30.5	79.50	6.05	73.45
CEF-46-22I	50.5	79.40	5.86	73.54
CEF-46-25I	50	79.41	5.7	73.71
CEF-46-27D	90	78.94	8.28	70.66
CEF-46-28I	50	79.38	5.75	73.63
CEF-46-29I	50	79.88	6.19	73.69
CEF-46-30I	50	79.66	NE	NE
CEF-46-31I	50	80.02	NE	NE

Notes:
NE = This well did not exist at this time.
NA = The data is not available.
msl = mean sea level.

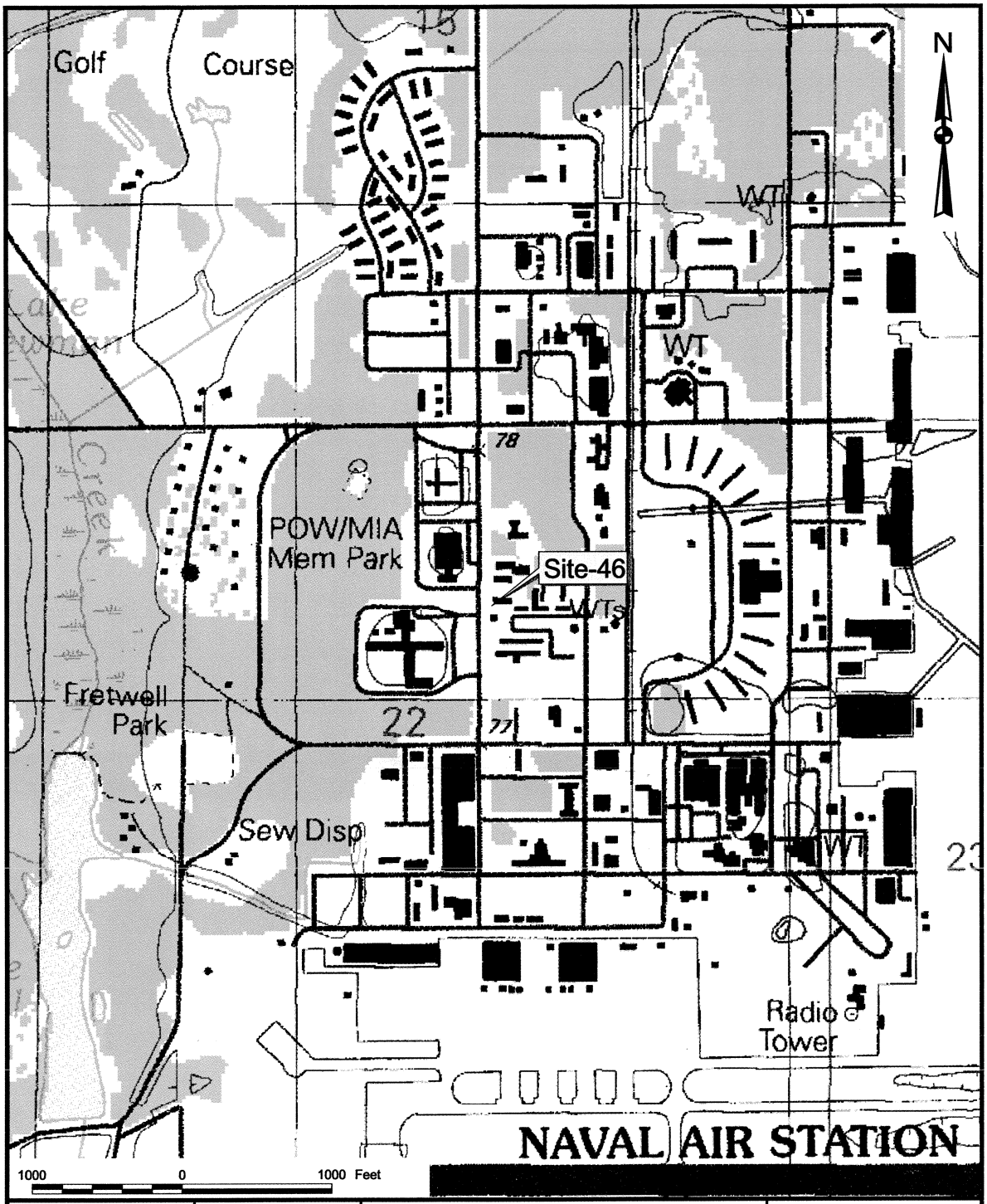
Table 2
Summary of BTEX Detections in Groundwater

Supplemental Assessment Letter Report
Building 46
Naval Air Station Cecil Field
Jacksonville, Florida

Well	CEF -046-19I	CEF -046-26I	CEF -046-27D	CEF -046-28I	CEF -046-29I	CEF -046-30I	CEF -046-31I	FDEP GCTLs
Sample Date	06/20/02	09/18/01	10/23/02	09/23/02	09/23/02	01/07/03	01/07/03	
Well Depth (ft bgs)	50	50	90	50	50	50	50	
Volatile Organic Compounds (µg/L)								
Benzene	**286**	**2100**	1U	**18.1**	**256**	1U	1U	1
Toluene	5U	**110**	1.9	1U	2.6 J	1U	1U	40
Ethylbenzene	5U	**160**	1U	1U	5U	1U	1U	30
Xylenes, total	15.6	**730**	3U	3U	17.4	3U	3U	20

Notes:
Bold indicates concentrations greater than FDEP criteria.
U = not detected at detection limit shown.
bgs = below ground surface
FDEP = Florida Department of Environmental Protection
FDEP GCTLs taken from Chapter 62-777, FAC.
J = estimated value

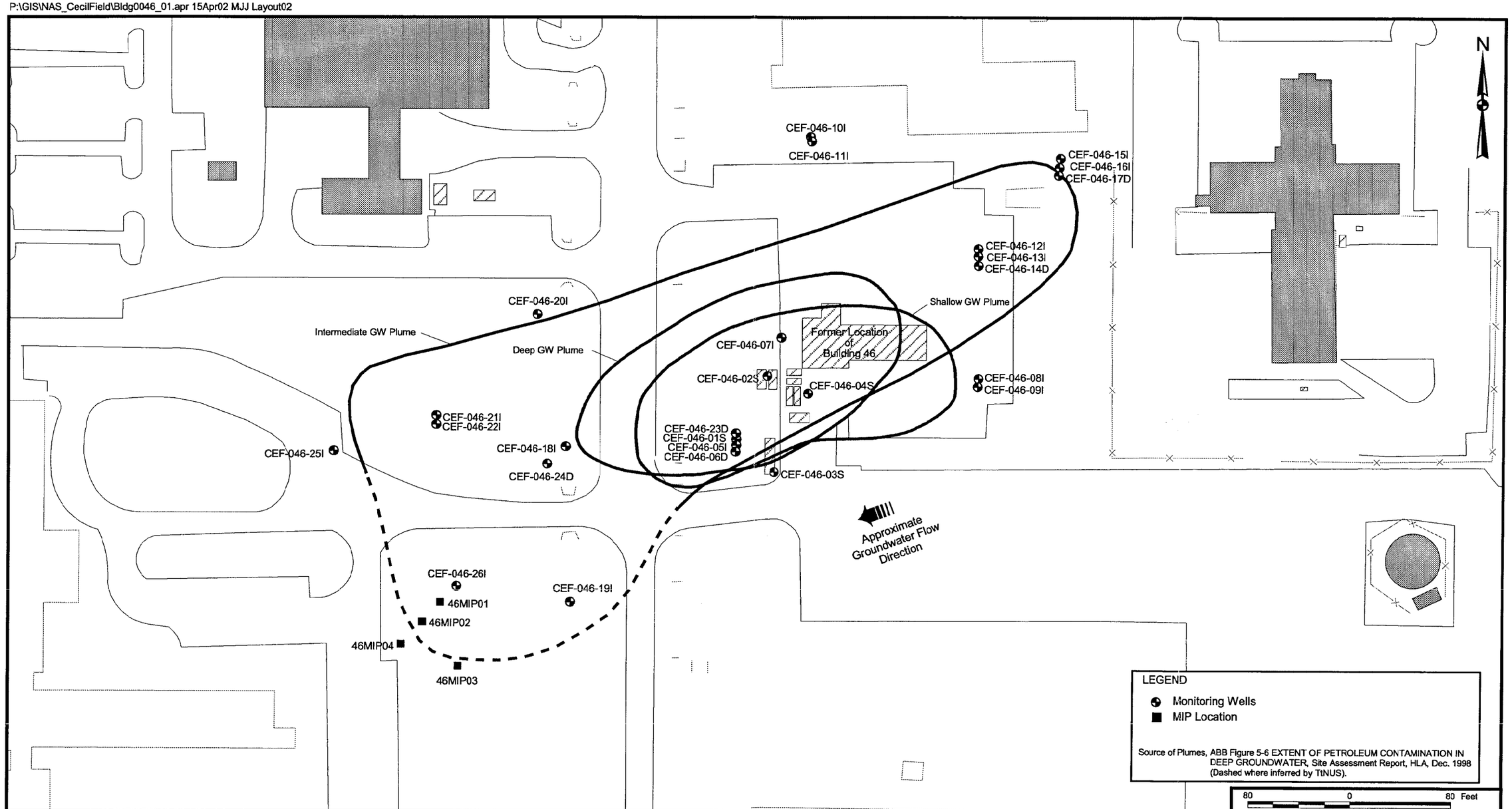
FIGURES



DRAWN BY MJJ	DATE 28May02	TOPOGRAPHIC MAP BUILDING 46 SUPPLEMENTAL ASSESSMENT LETTER REPORT 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\Bldg0046_01.apr 15Apr02 MJJ Layout01

P:\GIS\NAS_CecilField\Bldg0046_01.apr 15Apr02 MJJ Layout02



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY MJJ	DATE 28May02
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	

MIP LOCATION MAP
BUILDING 46
SUPPLEMENTAL ASSESSMENT LETTER REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO. 4248	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2	REV. 0

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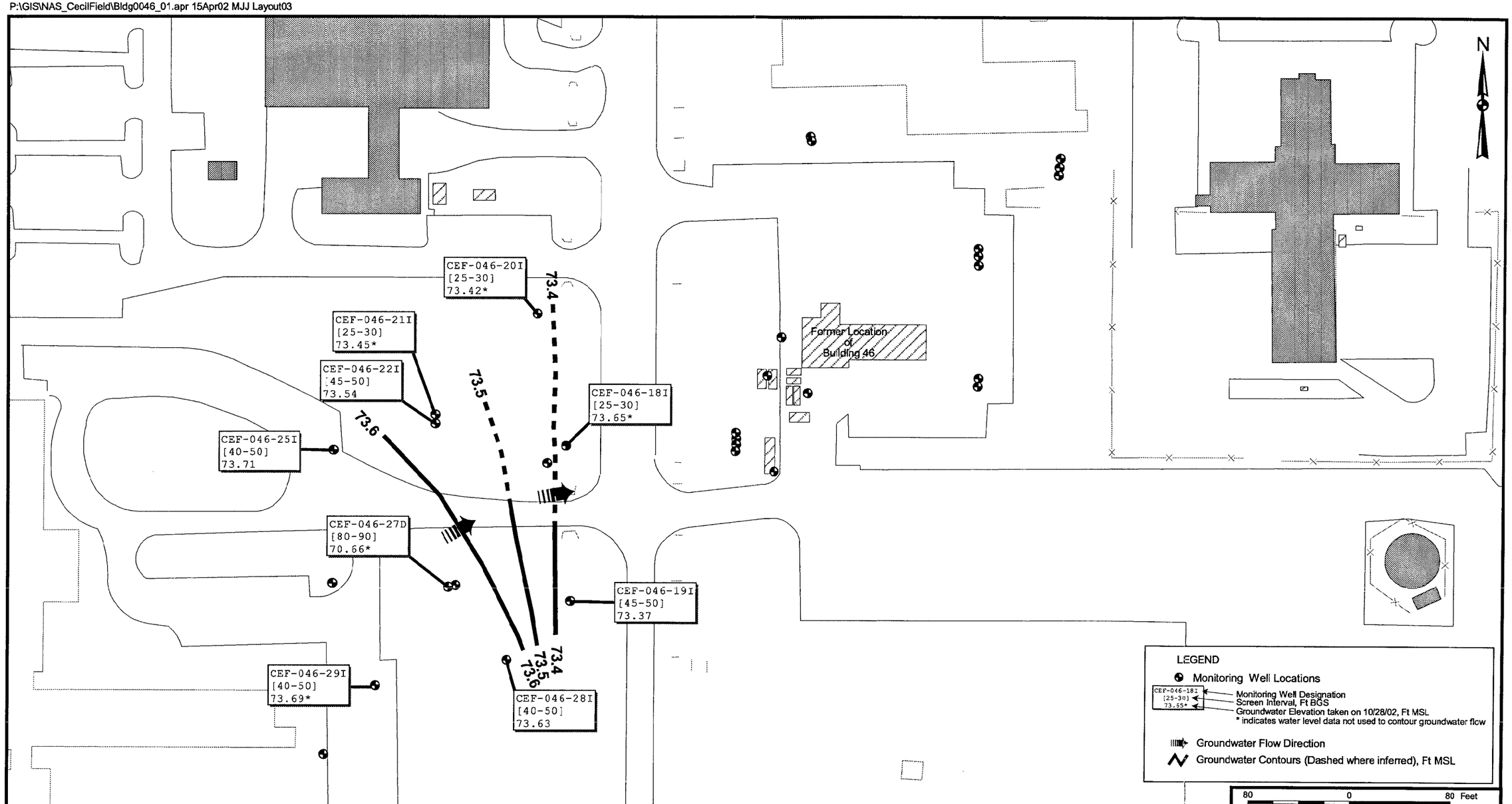

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY MJJ	DATE 15Apr03
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	

GROUNDWATER FLOW MAP (10/28/02)
BUILDING 46
SUPPLEMENTAL ASSESSMENT LETTER REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

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

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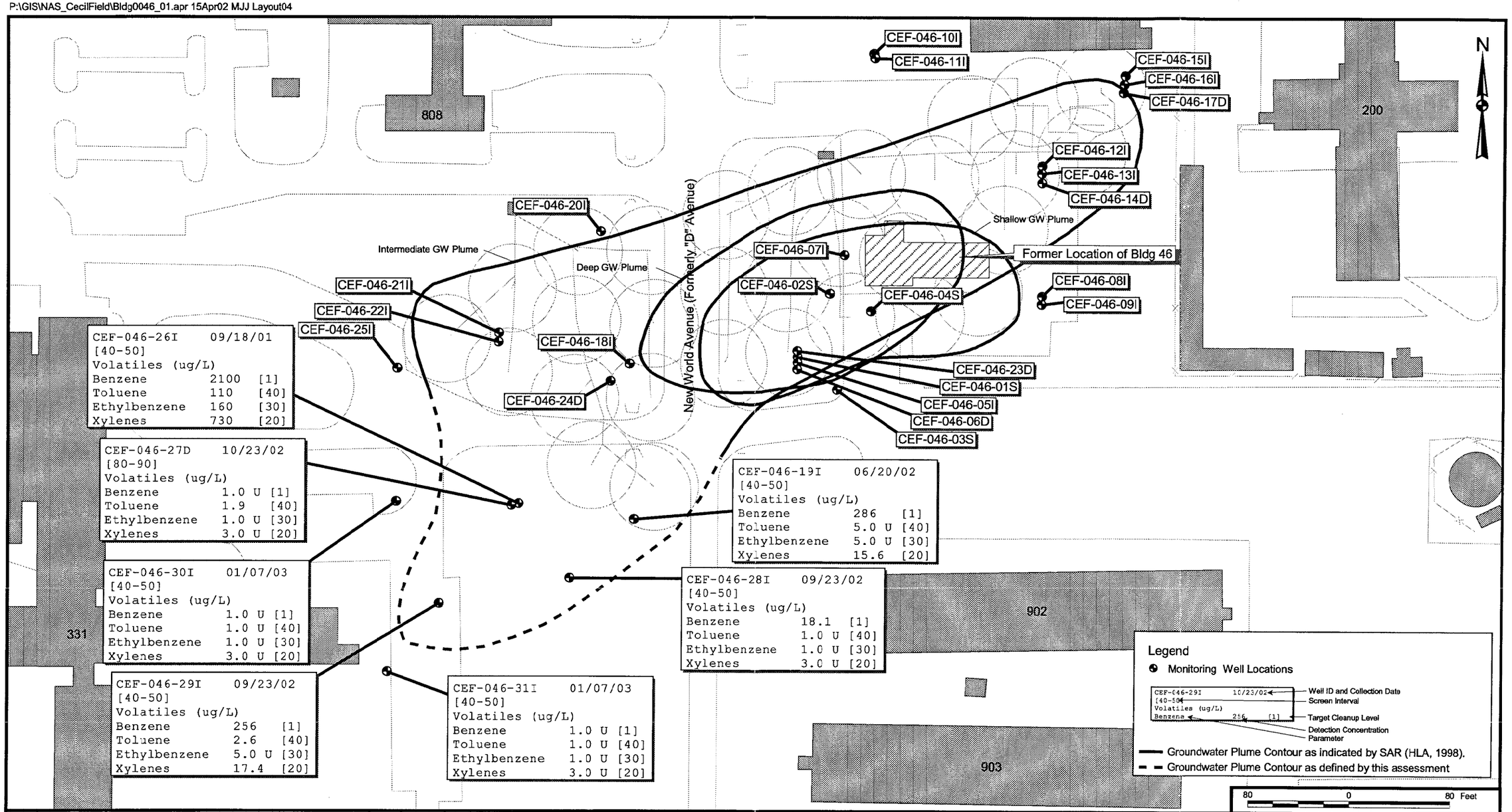

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY MJJ	DATE 13Mar03
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	

SELECT VOLATILES CONCENTRATION MAP
BUILDING 46
SUPPLEMENTAL ASSESSMENT LETTER REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO. 4248	
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DRAWING NO. FIGURE 4	REV. 0

ATTACHMENT A

THIRD QUARTER O&M REPORT
BUILDING 46

Third Quarter 2001
Operations and Maintenance
Status Report

Nutrient Injection System

Building 46, Former Tanks 46R, 46D, 46SUL, and 46UL

July 1, 2001 – September 30, 2001

Naval Air Station Cecil Field
Jacksonville, Florida

Contract No. N62467-98-D-0995
Contract Task Order No. 0002

Submitted to:

U.S. Naval Facilities
Engineering Command
Southern Division

Prepared by:

CH2MHILL
Constructors, Inc.

115 Perimeter Center Place, N.E.

Suite 700

Atlanta, GA 30346

December 2001

TABLE 3-3
Groundwater Analytical Results

	Date	Benzene	Ethyl Benzene	Toluene	Xylene	BETX	Methyl tert-butyl ether	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1, 2, 3-cd) pyrene	Dibenzo (a,h) anthracene	Benzo (g,h,i) perylene	Nitrate (mg/L)	Nitrite (mg/L)	Phosphate (mg/L)	TRPH (mg/L)
CEF-46-25I	12/20/2000	<1.0	<1.0	<1.0	<1.0	<4.0	NA	<1.1	N/A	N/A	<1.1	<1.1	<1.1	<1.1	<1.1	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.6	<0.4	<1.0	<560
	01/25/2001	0.25	<1.0	<1.0	0.42	0.67	<1.0	<1.0	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.60	<0.40	<1.0	320
	02/02/2001	0.27	<1.0	<1.0	<1.0	0.27	<1.0	<1.0	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.60	<0.40	<1.0	<500
	02/08/2001	0.21	0.15	<1.0	0.43	0.79	<1.0	<1.1	N/A	N/A	<1.1	<1.1	<1.1	<1.1	<1.1	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.60	<0.40	<1.0	390
	02/15/2001	0.22	<1.0	0.58	0.46	1.26	<1.0	<1.0	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.60	<0.40	<1.0	1000
	02/22/2001	0.46	<1.0	<1.0	<1.0	0.46	<1.0	<1.0	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.60	<0.40	<1.0	610
	03/21/2001	0.42	<1.0	<1.0	<1.0	0.42	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.60	<0.40	<1.0	<500
	04/03/2001	0.28	<1.0	<1.0	<1.0	0.28	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.60	<0.4	<1.0	380
	04/18/2001	0.32	<1.0	0.29	<1.0	0.61	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.60	<0.4	<1.0	<530
	05/02/2001	0.19	<1.0	<1.0	<1.0	0.19	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.60	<0.4	<1.0	1000
	06/29/2001	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<0.21	0.33	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	NS	NS	NS	<530
	07/25/2001	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.61	<0.40	<1.0	<520
	08/21/2001	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.60	<0.4	<1.0	<520
	09/18/2001	<1.0	<1.0	1.3	0.81	2.11	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	NA	NA	NA	<510
CEF-46-26I	12/20/2000	1300	76	43	810	1729	NA	<1.1	N/A	N/A	<1.1	<1.1	<1.1	<1.1	<1.1	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.6	<0.4	<1.0	<530
	01/25/2001	2400	270	100	820	3590	<5.0	<1.0	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.60	<0.40	<1.0	890
	02/02/2001	2000	150	77	600	2827	<1.0	<1.0	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.60	<0.40	<1.0	590
	02/08/2001	2100	120	83	450	2763	18	<1.0	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.60	<0.40	<1.0	730
	02/16/2001	2300	150	94	600	3144	10	<1.1	N/A	N/A	<1.1	<1.1	<1.1	<1.1	<1.1	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.60	<0.40	<1.0	960
	02/22/2001	1600	140	240	620	2800	<100	<1.1	N/A	N/A	<1.1	<1.1	<1.1	<1.1	<1.1	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.60	<0.40	<1.0	610
	03/08/2001	2100	150	85	620	2965	<50	<1.0	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.60	<0.40	<1.0	1000
	03/21/2001	2400	130	110	750	3450	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.60	<0.40	<1.0	630
	04/03/2001	2400	160	99	810	3499	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.6	<0.4	<1.0	1200
	04/18/2001	2300	190	110	750	3350	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.6	<0.4	<1.0	810
	05/02/2001	1100	100	46	390	1636	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<30	<20	<50	410
	06/29/2001	3400	260	180	1200	5040	<50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	NS	NS	NS	1200
	07/25/2001	2100	180	67	730	3157	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.61	<0.40	<1.0	850
	08/21/2001	2000	160	49	700	2909	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.6	<0.4	<1.0	930
	09/18/2001	2100	180	110	730	3120	<20	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	NA	NA	NA	720
Groundwater Criteria [1]		1	30	40	20	n/a	50	20	20	20	210	20	280	210	2100	280	210	0.2	4.8	0.2	0.5	0.2	0.2	0.2	210	10,000	1000	n/a	5000
Natural Attenuation Default Source [1]		100	300	400	200	n/a	500	200	200	200	2100	200	2800	2100	21000	2800	2100	20	480	20	50	20	20	20	2100	100000	10000	n/a	50000

All values reported in ug/L
1 = Ch 62-777 F.A.C Groundwater Cleanup Target Levels (GCTLs) reported in ug/L
Shaded values indicate the compounds that exceed the GCTLs

NS = Not Sampled
NA = Not Analyzed

ATTACHMENT B

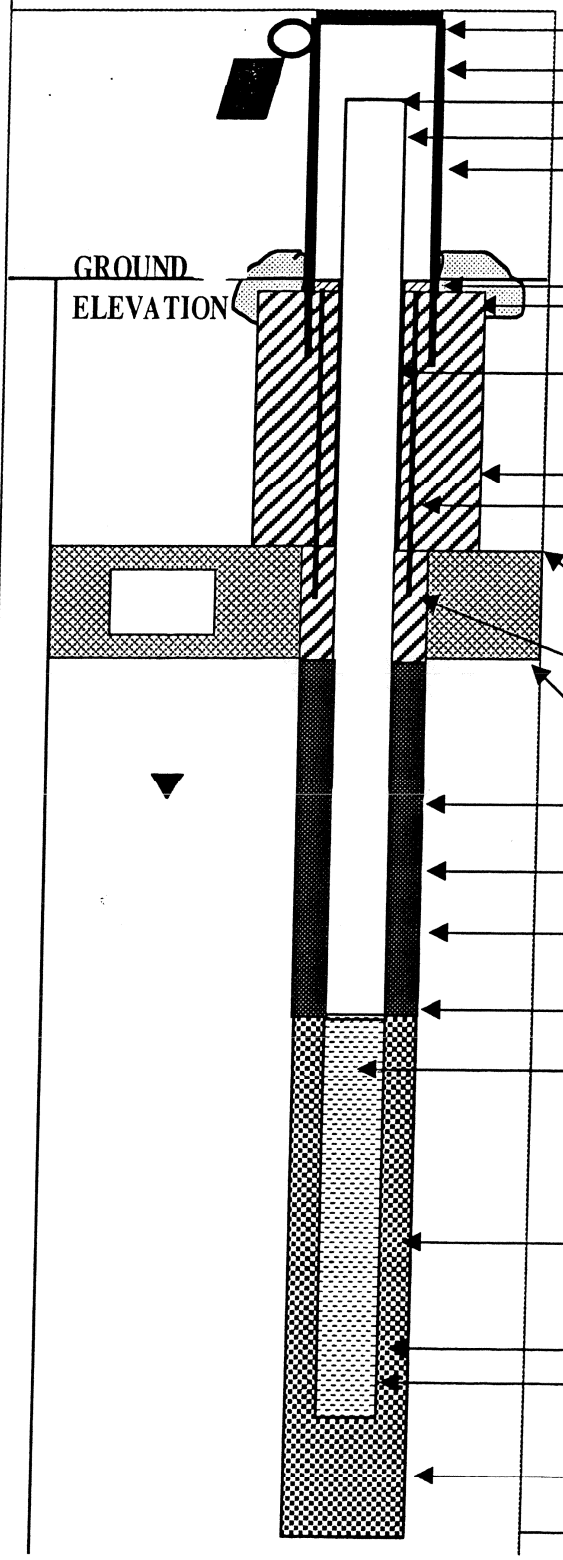
BORING LOGS AND WELL CONSTRUCTION DIAGRAMS

BORING NO.: SB-01

Tetra Tech NUS, Inc. **DOUBLE-CASED MONITORING WELL SHEET**

PERMIT No. Not Req'd

PROJECT:	NAS Cecil Field	DRILLING Co.:	Partridge	BORING No.:	CEF-96-270
PROJECT No.:	N4248	DRILLER:	Jeff Weatherford	DATE COMPLETED:	9/6/02
SITE:	Bldg 46	DRILLING METHOD:	Mud Rot.	NORTHING:	
GEOLOGIST:	M./Dale / C Gleaton	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF SURFACE CASING: Ø

STICK -UP TOP OF SURFACE CASING: FLUSH

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: NONE

I.D. OF SURFACE CASING: 6 in

TYPE OF SURFACE CASING: STEEL, BOLTDOWN

GROUND ELEVATION: N/A

TYPE OF SURFACE SEAL: Concrete

2 X 2 X 6" CONC. PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 10 inch

PERM. CASING I.D. : 6"

TYPE OF CASING & BACKFILL: PVC, SCHEDULE

TYPE I PORTLAND CEMENT

ELEVATION / DEPTH TOP CONFINING LAYER N/A

ELEVATION / DEPTH BOTTOM OF CASING 170 ft

ELEVATION / DEPTH BOT. CONFINING LAYER N/A

ELEVATION / DEPTH OF SEAL: 175 ft

TYPE OF SEAL: MEDIUM SAND (30/65)

ELEVATION / DEPTH TOP OF FILTER PACK: 178 ft

ELEVATION / DEPTH TOP OF SCREEN: 180 ft

TYPE OF SCREEN: PVC SCHEDULE 40

SLOT SIZE X LENGTH: 0.010" X 5'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: COARSE SAND (20/30)

BOREHOLE DIAMETER BELOW CASING: 6 inch

ELEVATION / DEPTH BOTTOM OF SCREEN: 190 ft

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 191 ft

TYPE OF BACKFILL BELOW WELL: 20/30 Sand

ELEVATION / DEPTH OF BOREHOLE: 191 ft

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-96-27D
Site Name: Bldg 46
Date Installed: 9/6/02
Project Name: Cecil Field

Site Geologist: M. Dale C Gleason
Drilling Company: Partridge
Driller: Jeff Weatherford
Project Number: N4298MW0050120

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch 40 PVC 2 inch Dia	Atlantic Drilling Supply Jax Fl	No
Well Screen	Sch 40 PVC 2 inch 0.010 slots	ADS Jax Fl	No
End Cap	Sch 40 PVC 2 inch 6 in long	ADS Jax Fl	No
Drilling Fluid	Quikgel	Baroid Drilling Fluids Houston TX	No
Drilling Fluid Additives	None		
Backfill Material	None		
Annular Filter Pack	Standard 20/30 Grade Sand	Standard Sand Jax Fl	No
Bentonite Seal	Standard 30/65 Grade Sand	Standard Sand Jax Fl	No
Annular Grout	Portland Cement Type I-II	Lehigh Cement Allentown PA	No
Surface Cement	Quikrete	Quikrete Company Atlanta GA	No
Protective Casing	10 inch Steel manhole	ADS Jax Fl	No
Paint	None		
Rod Lubricant	None		
Compressor Oil	None		

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: C. Gleason

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: SFF, Truck Stand, Site 46, NSAP, DT1
BORING NUMBER: CEF-46-SB02
PROJECT NUMBER: N4248MW0050/120
DATE: 9/5/02
DRILLING COMPANY: Portridge Well Co.
GEOLOGIST: M Davis / C Gleaton
DRILLING RIG: Drilmaster 400
DRILLER: Jeff 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					Bk	Organic Sand	SP	Dry				
	1-5					Lt Br	Fine Sand	SP	Dry				
	5-8					Dr Br	Clayey Sand	SP	Dry				
	8-14					Dr Br	Clayey Sand	SP	Moist Δ 10ft				
	14-20					Br	Clayey Sand	SP	Wet				
	20-30					Br	Silty Clayey Sand	SP	Wet				
	30-50					Br	Silty Clayey Sand	SP	Wet				

* When rock coring, enter rock brokeness.

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

Remarks: Δ 10ft

Drilling Area Background (ppm): 1.4

Converted to Well: Yes ✓ No _____ Well I.D. #: CEF-46-28I

Tetra Tech NUS, Inc.

WELL No.: CEF-46-28I

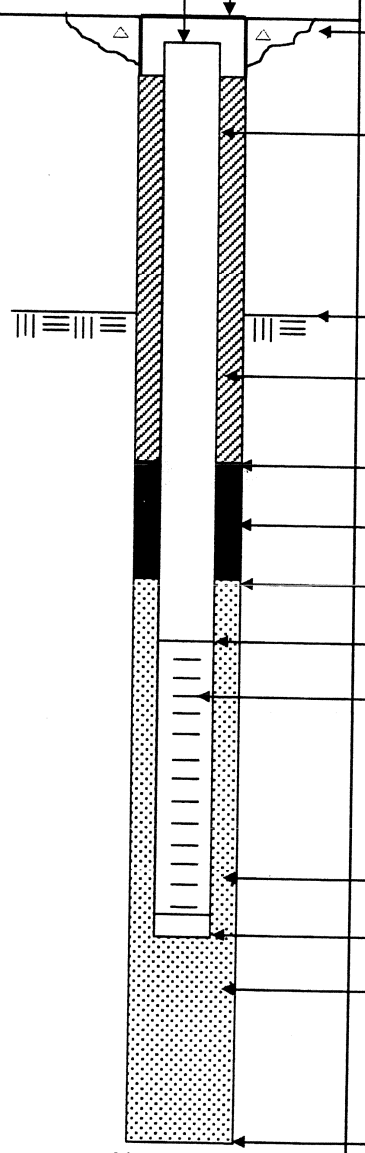
MONITORING WELL SHEET

PROJECT: NAS CECIL FIELD
PROJECT No.: 0039
SITE: Bly 46
GEOLOGIST: M. Dale/C Gloster

DRILLING Co.: Partridge
DRILLER: Jeff Weatherford
DRILLING METHOD: Hollow Stem
DEV. METHOD:

BORING No.: 02
DATE COMPLETED: 9/5/02
NORTHING:
EASTING:

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: /
Elevation / Height of Top of Surface Casing: 1 Ø ft
I.D. of Surface Casing: 8 inch
Type of Surface Casing: Steel boltdown
Type of Surface Seal: 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-II Portland Cement
Elevation / Depth of Seal: 130 ft
Type of Seal: 30/65 fine grain Sand
Elevation / Depth of Top of Filter Pack: 138 ft
Elevation / Depth of Top of Screen: 140 ft
Type of Screen: Sch 40 PVC
Slot Size x Length: 0.010in X 10ft
I.D. of Screen: 2 inch
Type of Filter Pack: 20/30 Sand
Elevation / Depth of Bottom of Screen: 150 ft
Elevation / Depth of Bottom of Filter Pack: 150 ft
Type of Backfill Below Well: 20/30 grade Sand
Elevation / Total Depth of Borehole: 150 ft

Rev. 0
March 27, 1997

Tetra Tech NUS. Inc.
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-46-28I
Site Name: Bldg 46 Cecil Field
Date Installed: 9/5/02
Project Name: Cecil Field

Site Geologist: Marvin Dale
Drilling Company: Partridge
Driller: Jeff Weatherford
Project Number: N9248MW0050120

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC 2in Dia.	Atlantic Drilling Supply, Jax	No
Well Screen	Sch. 40 PVC 2in .010" Slots	ADS Jacksonville Fl	No
End Cap	Sch. 40 PVC 2in 6in long	ADS Jacksonville Fl	No
Drilling Fluid	None		
Drilling Fluid Additives	None		
Backfill Material	None		
Annular Filter Pack	Standard 20/30 grade Sand	Standard Sand, Jax Fl	No
~~Bentonite~~ Fine Sand Seal	Standard 30/65 grade Sand	Standard Sand, Jax Fl	No
Annular Grout	Portland Cement type I-II	Lehigh Cement Allentown, PA	No
Surface Cement	Quikrete	Quikrete Co., Atlanta, GA	No
Protective Casing	8in steel manhole	ADS Jacksonville Fl	No
Paint	None		
Rod Lubricant	None		
Compressor Oil	None		

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: M.W. Dale

UN 4248.4.4.14

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: SFF, Truck Stand, Site 46, NSAP, DT1
BORING NUMBER: CEF-46-SB03
PROJECT NUMBER: N4248MW0050 120
DATE: 9/6/02
DRILLING COMPANY: Partridge
GEOLOGIST: M Dale / C. Gleaton
DRILLING RIG: Dilmaster 400
DRILLER: Jeff 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"-1.5'					Bk	Asphalt		Dry				
	1.5'-4'					Pale YW	lime rock road Base		Dry				
	4'-3'					Dr Bn	Fine Silty Sand		Dry				
	3'-6					Dr Bn	Fine Silty Sand		Dry			1.7	2.8
	6-10				Very	Dr Bn	Fine Silty Sand		Moist			2.2	3.1
	10-16				Very	Dr Bn	Fine Silty Sand		Moist @ 15'				
	16-30					Bn	Fine Silty Sand		Wet			1.7	2.6
	30-40					Bn	Fine Silty Sand		Wet				
	40-50					Gr	Fine Silty Sand		Wet				

* 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-46-29I

Tetra Tech NUS, Inc.

WELL No.: CEF-46-29I

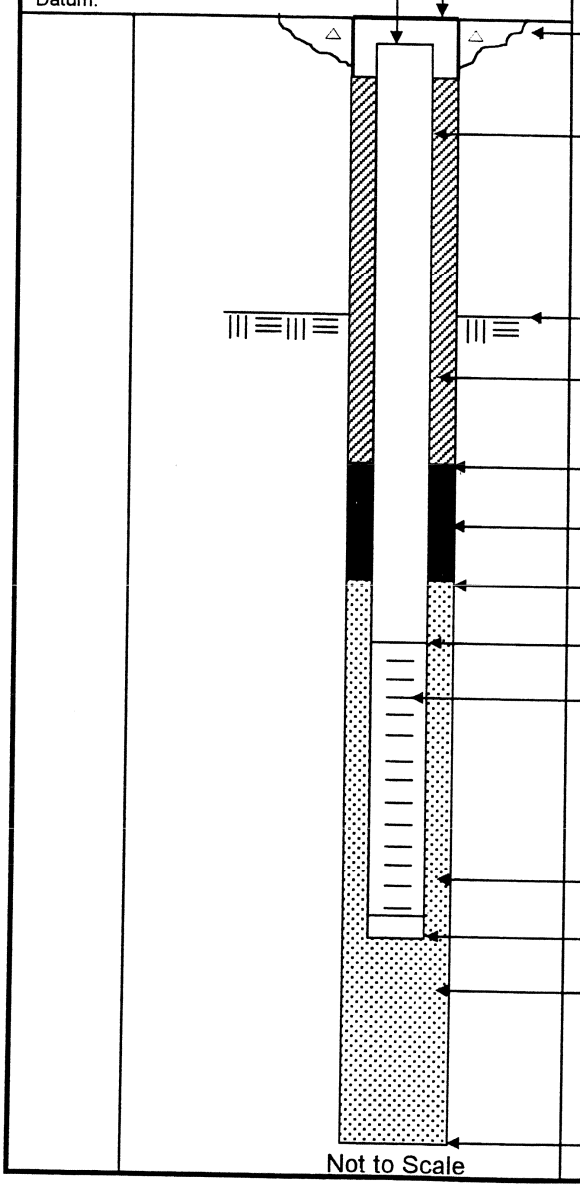
MONITORING WELL SHEET

PROJECT: NAS CECIL FIELD
PROJECT No.: 0039
SITE: Bldg 46
GEOLOGIST: M. Dale / C Gleaton

DRILLING Co.: Partridge
DRILLER: Jeff Weatherford
DRILLING METHOD: HSA
DEV. METHOD:

BORING No.: 03
DATE COMPLETED: 9/6/02
NORTHING:
EASTING:

Ground Elevation =
Datum:



Elevation / Depth of Top of Riser: 1

Elevation / Height of Top of Surface Casing: 1 Ø ft

I.D. of Surface Casing: 8 inch

Type of Surface Casing: Steel boltdown

Type of Surface Seal: 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-II Portland Cement

Elevation / Depth of Seal: 135 ft

Type of Seal: 30/65 fine sand

Elevation / Depth of Top of Filter Pack: 138 ft

Elevation / Depth of Top of Screen: 140 ft

Type of Screen: Sch 40 PVC

Slot Size x Length: 0.010 in. x 10 ft

I.D. of Screen: 2 in

Type of Filter Pack: 20/30 Sand

Elevation / Depth of Bottom of Screen: 150 ft

Elevation / Depth of Bottom of Filter Pack: 150 ft

Type of Backfill Below Well: 20/30 grade Sand

Elevation / Total Depth of Borehole: 150 ft

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-46-29I
Site Name: Blg 46
Date Installed: 9/6/02
Project Name: Cecil Field

Site Geologist: Merv. Dale
Drilling Company: Partridge
Driller: Jeff Weatherford
Project Number: N9248MW0050120

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC 2in. Dia	Atlantic Drilling Supply, Jax	No
Well Screen	Sch 40 PVC 2in Dia 0.010 slots	ADS Jax, Fl	No
End Cap	Sch 40 PVC 2in 6in long	ADS Jax, Fl	No
Drilling Fluid	None		
Drilling Fluid Additives	None		
Backfill Material	None		
Annular Filter Pack	Standard 20/30 Grade Sand	Standard Sand Jax Fl	No
~~Bentonite~~ Fine Sand Seal	Standard 30/65 Grade Sand	Standard Sand Jax Fl	No
Annular Grout	Portland Cement Type I-II	Lehigh Cement Allentown, PA	No
Surface Cement	Quikrete Concrete	Quikrete Company Atlanta GA	No
Protective Casing	8in Steel manhole	ADS Jax, Fl	No
Paint	None		
Rod Lubricant	None		
Compressor Oil	None		

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Merwin Dale

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: SFF, Truck Stand, Site 46, NSAP, DT1
BORING NUMBER: CEF-046-30I
PROJECT NUMBER: N4248MW0050
DATE: 12/17/02
DRILLING COMPANY: TransAmerican
GEOLOGIST: C Gleaton
DRILLING RIG: D-120
DRILLER: Louis Johnson

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'-1.5		Bk	Silty Sand	SM		–	–	–	–
				1.5-4.5		Lt Gr	Silty Sand	SM		–	–	–	–
				4.5-6.7		Bn	Silty Sand	SM		–	0.0	0.0	0.0
				7.2-8.5		Bk	Silty Sand	SM	Δ 8.5	–	–	–	–
				8.5-25		Bn	Silty Sand	SM	Wet	–	–	–	–
				25-50		Bn	Silty Sand	SM	Wet	–	–	–	–

* When rock coring, enter rock brokeness.

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

Drilling Area Background (ppm): 0.0

Remarks: Lt = Light Bk = Black Gr = Gray Bn = Brown

Converted to Well: Yes X No _____ Well I.D. #: CEF-046-30I

Tetra Tech NUS, Inc.

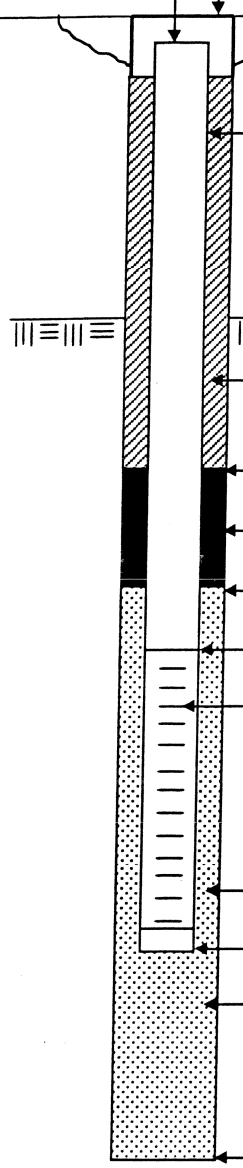
WELL No.: CEF-046-30I

MONITORING WELL SHEET (SINGLE-CASED)

PROJECT:	Cecil Field	DRILLING Co.:	TransAmerican	BORING No.:	CEF-046-30I
PROJECT No.:	N4248	DRILLER:	L Johnson	DATE COMPLETED:	12/17/02
SITE:	Site 46	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	C Gleaton	DEV. METHOD:		EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser:	/
Elevation / Height of Top of Surface Casing:	/
I.D. of Surface Casing:	8"
Type of Surface Casing:	Steel
Type of Surface Seal:	Concrete
I.D. of Riser:	2 inch
Type of Riser:	PVC
Borehole Diameter:	6 inch
Elevation / Depth Top of Rock:	/ NA
Type of Backfill:	Portland Cement
Elevation / Depth of Seal:	134.5 ft
Type of Seal:	30/65 Sand
Elevation / Depth of Top of Filter Pack:	137.5 ft
Elevation / Depth of Top of Screen:	139.5 ft
Type of Screen:	PVC
Slot Size x Length:	0.010 inch x 10 ft
I.D. of Screen:	2 inch
Type of Filter Pack:	20/30 Sand
Elevation / Depth of Bottom of Screen:	149.5 ft
Elevation / Depth of Bottom of Filter Pack:	149.5 ft
Type of Backfill Below Well:	20/30 Sand
Elevation / Total Depth of Borehole:	150 ft

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-046-30T
Site Name: BUILDING 46, NAS CECIL FIELD
Date Installed: 12/17/02
Project Name: SUPPLEMENTAL ASSESMENT

Site Geologist: Chris Gleaton
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N4248 MWO 050/20

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex, sch 40 2x10	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex, sch 40 2x5 0.010 Screen	Atlantic Drilling Supply / Jax	
End Cap / Well Point	Locking Cap / PVC	Atlantic Drilling Supply / Jax	
Drilling Fluid	NONE		
Drilling Fluid Additives	NONE		
Backfill Material	None		
Annular Filter Pack	20/30 Standard Sand	Standard Sand / Jax	
Bentonite Seal	30/65 Fine Grain Sand	Standard Sand / Jax	
Annular Grout	Portland Cement	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete Co, Atlanta, GA	
Protective Casing	8in Steel Manhole	ADS, JAX, FL	
Paint			
Rod Lubricant			
Compressor Oil			

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: C. Gleaton

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: SFF, Truck Stand, Site 46, NSAP, DT1
PROJECT NUMBER: N4248MW0050
DRILLING COMPANY: Trans American
DRILLING RIG: D-120
BORING NUMBER: CEF-046-31I
DATE: 12/17/02
GEOLOGIST: C Gleaton
DRILLER: Louis Johnson

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		Dr Bn	Silty Sand	SM	Organic	–	–	–	–
				2-5.5		Lt Gr	Silty Sand	SM		–	0.0	0.0	0.0
				5.5-8		Gr	Silty Sand	SM	Δ 8'	–	–	–	–
				8-50		Bn	Silty Sand	SM	Wet	–	–	–	–

* When rock coring, enter rock brokeness.

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

Drilling Area Background (ppm):

Remarks: Dr = Dark Lt = Light
Bn = Brown Gr = Gray

Converted to Well: Yes X No

Well I.D. #: CEF-046-31I

Tetra Tech NUS, Inc.

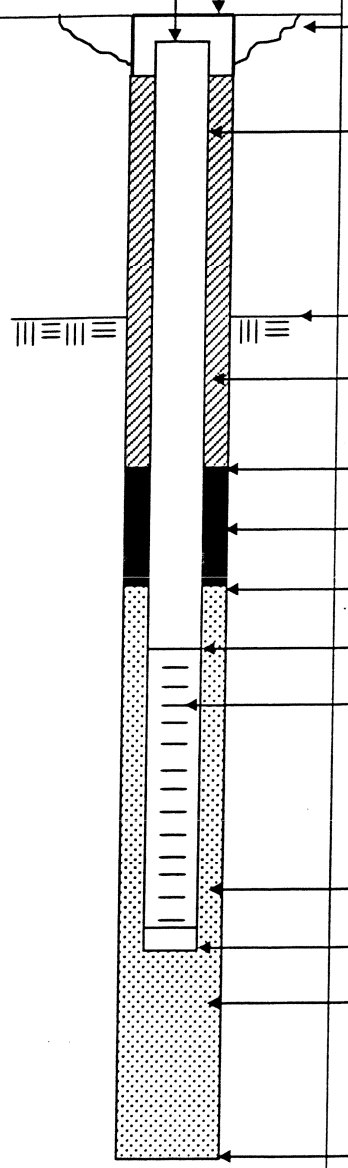
WELL No.: CEF-046-31I

MONITORING WELL SHEET (SINGLE-CASED)

PROJECT:	Cecil Field	DRILLING Co.:	Trans American	BORING No.:	CEF-046-31I
PROJECT No.:	N4248	DRILLER:	L. Johnson	DATE COMPLETED:	12/17/02
SITE:	Site 46	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	C Gleaton	DEV. METHOD:		EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser:	/
Elevation / Height of Top of Surface Casing:	/
I.D. of Surface Casing:	8"
Type of Surface Casing:	Steel
Type of Surface Seal:	Concrete
I.D. of Riser:	2 inch
Type of Riser:	PVC
Borehole Diameter:	6 inch
Elevation / Depth Top of Rock:	/ NA
Type of Backfill:	Portland Cement
Elevation / Depth of Seal:	134.5 ft
Type of Seal:	30/65 Sand
Elevation / Depth of Top of Filter Pack:	137.5 ft
Elevation / Depth of Top of Screen:	139.5 ft
Type of Screen:	PVC
Slot Size x Length:	0.010 inch x 10 ft
I.D. of Screen:	2 inch
Type of Filter Pack:	20/30 Sand
Elevation / Depth of Bottom of Screen:	149.5 ft
Elevation / Depth of Bottom of Filter Pack:	149.5 ft
Type of Backfill Below Well:	20/30 Sand
Elevation / Total Depth of Borehole:	150 ft

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-046-31I
Site Name: BUILDING 46, NAS CECIL FIELD
Date Installed: 12/17/02
Project Name: SUPPLEMENTAL ASSESSMENT

Site Geologist: Chris Gleaton
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N4248 MNO 050/20

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex, sch 40 2x10	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex, sch 40 2x5 0.010 Screen	Atlantic Drilling Supply / Jax	
End Cap / Well Point	Locking Cap / PVC	Atlantic Drilling Supply / Jax	
Drilling Fluid	NONE		
Drilling Fluid Additives	NONE		
Backfill Material	None		
Annular Filter Pack	20130 Standard Sand	Standard Sand / Jax	
Bentonite Seal	30165 Fine Grain Sand	Standard Sand / Jax	
Annular Grout	Portland Cement	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete Co, Atlanta, GA	
Protective Casing	8in Steel Manhole	ADS, JAX, FL	
Paint			
Rod Lubricant			
Compressor Oil			

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: C. Gleaton

ATTACHMENT C

GROUNDWATER ANALYTICAL REPORT

Accutest Laboratories

Sample Summary

Tetra Tech, NUS

Job No: F13637

NAS Cecil Field-CTO-248
Project No: N4248

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F13637-1	06/20/02	13:25 RS	06/21/02	AQ	Ground Water	CEF-46-191-01

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-19I-01		
Lab Sample ID:	F13637-1	**Date Sampled:**	06/20/02
Matrix:	AQ - Ground Water	**Date Received:**	06/21/02
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	B0010369.D	5	06/26/02	JG	n/a	n/a	VB454
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	286	5.0	ug/l	
108-88-3	Toluene	ND	5.0	ug/l	
100-41-4	Ethylbenzene	ND	5.0	ug/l	
1330-20-7	Xylene (total)	15.6	15	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	103%		80-120%
2037-26-5	Toluene-D8	88%		80-120%
460-00-4	4-Bromofluorobenzene	97%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-19I-01		
Lab Sample ID:	F13637-1	**Date Sampled:**	06/20/02
Matrix:	AQ - Ground Water	**Date Received:**	06/21/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE008847.D	1	07/02/02	MRE	06/25/02	OP5366	GEE413
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
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	ND	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	50%		33-141%
92-94-4	p-Terphenyl	82%		31-122%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-19I-01		
Lab Sample ID:	F13637-1	**Date Sampled:**	06/20/02
Matrix:	AQ - Ground Water	**Date Received:**	06/21/02
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP21547.D	1	06/28/02	SKW	06/26/02	OP5380	GOP798
Run #2							

	Initial Volume	Final Volume
Run #1	860 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	ND	0.29	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%		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. NAS CECIL FIELD

CHAIN OF CUSTODY | NUMBER CF46-062002 | PAGE 1 OF 1

PROJECT NO: N4248	SITE NAME: Site Bldg 46	PROJECT MANAGER AND PHONE NUMBER: PAUL CALLIGAN 813 806 0202	LABORATORY NAME AND CONTACT: ACCUTEST SUE BELL
SAMPLERS (SIGNATURE): RDSC		FIELD OPERATIONS LEADER AND PHONE NUMBER: MERVIN DALE 904 281 0400	ADDRESS: 4405 Vineland Rd. C-15
		CARRIER/WAYBILL NUMBER: Fedex 8329 0239 8013	CITY, STATE: ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G G G

PRESERVATIVE USED: HCL None H_2SO_4

DATE YEAR 2002	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	BTEX SW846 8260B	PAH * SW846 8310	TRPH FL-PRO						COMMENTS
6/20	1325	CEF-46-19I-01	GW	G	7	3	2	2						Cool to 4°C
														Reference CTO 248
														N4248MW0060100
														* Include 1- and 2-methylnaphthalene

1. RELINQUISHED BY: DAVID SIEFKEN	DATE 6/20/02	TIME 1600	1. RECEIVED BY: Miranda Jaquet	DATE 6-21-02	TIME 930
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

Tetra Tech NUS, Inc. **Internal Correspondence**

TO:	**Mr. Paul Calligan**	**DATE:**	**October 23, 2002**
FROM:	**Michael T. Akers**	**CC:**	**File**
SUBJECT:	**Organic Data Validation – VOCs, PAHs, and TPH CTO248 – NAS Cecil Field SDG F14718**		
SAMPLES:	**3/Aqueous**		

CEF-46-28I-01 **CEF-46-29I-01** **CEF-46-DU01-01**

OVERVIEW

The sample set for CTO248 SDG F14718; Naval Air Station Cecil Field, Jacksonville, Florida consists of two (2) aqueous environmental samples and one (1) field duplicate sample. The environmental samples were analyzed for Volatile Organic compounds (VOCs), Polycylic Aromatic Hydrocarbons (PAHs), and Total Recoverable Petroleum Hydrocarbons (TRPH). The duplicate pair analyzed with this SDG was CEF-46-28I-01 / CEF-46-DU01-01.

The sample was collected by Tetra Tech NUS on September 23rd, 2002 and analyzed by Accutest Laboratories. All analyses were performed in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria and analyzed according to SW-846 Method 8260B (VOCs), SW-846 Method 8310 (PAHs), and FDEP FL-PRO (TPH) analytical and reporting protocols. The data in this SDG was validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
* • Laboratory method/field quality control blank results
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter.

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Volatiles Fraction

All quality control criteria were met for this fraction.

Polycylic Aromatic Hydrocarbon Fraction

All quality control criteria were met for this fraction.

Total Petroleum Hydrocarbon Fraction

All quality control criteria were met for this fraction.

Field Duplicate Analysis

Parameter	CEF-46-28I-01	CEF-46-DU01-01	%RPD
Benzene	18.1	17.8	1.7%

No data qualifications were made based on field duplicate data.

Executive Summary

Laboratory performance: None.

Other factors affecting data quality: No other factors affected data quality.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (February, 1996), and the NFESC guidelines "Navy Installation Restoration Chemical Data Quality Manual" (September, 1999). The text of the report has been formulated to address only those problems affecting data quality.

"I attest that the data referenced herein was validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Michael T. Akers
Project Chemist
Tetra Tech NUS, Inc.

PROJ_NO: 4248

SDG: F14718 MEDIA: WATER DATA FRACTION: OV

nsample CEF-46-28I-01
samp_date 9/23/2002
lab_id F14718-1
qc_type NM
units UG/L
Pct_Solids 0
DUP_OF: CEF-46-DU01-01

Parameter	Result	Val Qual	Qual Code
BENZENE	18.1		
ETHYLBENZENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	3	U	

nsample CEF-46-29I-01
samp_date 9/23/2002
lab_id F14718-3
qc_type NM
units UG/L
Pct_Solids 0
DUP_OF:

Parameter	Result	Val Qual	Qual Code
BENZENE	256		
ETHYLBENZENE	5	U	
TOLUENE	2.6	J	P
TOTAL XYLENES	17.4		

nsample CEF-46-DU01-01
samp_date 9/23/2002
lab_id F14718-2
qc_type NM
units UG/L
Pct_Solids 0
DUP_OF: CEF-46-28I-01

Parameter	Result	Val Qual	Qual Code
BENZENE	17.8		
ETHYLBENZENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	3	U	

PROJ_NO: 4248

SDG: F14718 MEDIA: WATER DATA FRACTION: PAH

nsample	CEF-46-28I-01
samp_date	9/23/2002
lab_id	F14718-1
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	CEF-46-DU01-01

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	2.2	U	
2-METHYLNAPHTHALENE	2.2	U	
ACENAPHTHENE	4.3	U	
ACENAPHTHYLENE	4.3	U	
ANTHRACENE	2.2	U	
BENZO(A)ANTHRACENE	0.22	U	
BENZO(A)PYRENE	0.22	U	
BENZO(B)FLUORANTHENE	0.22	U	
BENZO(G,H,I)PERYLENE	0.22	U	
BENZO(K)FLUORANTHENE	0.22	U	
CHRYSENE	2.2	U	
DIBENZO(A,H)ANTHRACENE	0.22	U	
FLUORANTHENE	2.2	U	
FLUORENE	2.2	U	
INDENO(1,2,3-CD)PYRENE	0.22	U	
NAPHTHALENE	2.2	U	
PHENANTHRENE	2.2	U	
PYRENE	2.2	U	

nsample	CEF-46-29I-01
samp_date	9/23/2002
lab_id	F14718-3
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	2.1	U	
2-METHYLNAPHTHALENE	2.1	U	
ACENAPHTHENE	4.3	U	
ACENAPHTHYLENE	4.3	U	
ANTHRACENE	2.1	U	
BENZO(A)ANTHRACENE	0.21	U	
BENZO(A)PYRENE	0.21	U	
BENZO(B)FLUORANTHENE	0.21	U	
BENZO(G,H,I)PERYLENE	0.21	U	
BENZO(K)FLUORANTHENE	0.21	U	
CHRYSENE	2.1	U	
DIBENZO(A,H)ANTHRACENE	0.21	U	
FLUORANTHENE	2.1	U	
FLUORENE	2.1	U	
INDENO(1,2,3-CD)PYRENE	0.21	U	
NAPHTHALENE	2.1	U	
PHENANTHRENE	2.1	U	
PYRENE	2.1	U	

nsample	CEF-46-DU01-01
samp_date	9/23/2002
lab_id	F14718-2
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	CEF-46-28I-01

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	2.2	U	
2-METHYLNAPHTHALENE	2.2	U	
ACENAPHTHENE	4.3	U	
ACENAPHTHYLENE	4.3	U	
ANTHRACENE	2.2	U	
BENZO(A)ANTHRACENE	0.22	U	
BENZO(A)PYRENE	0.22	U	
BENZO(B)FLUORANTHENE	0.22	U	
BENZO(G,H,I)PERYLENE	0.22	U	
BENZO(K)FLUORANTHENE	0.22	U	
CHRYSENE	2.2	U	
DIBENZO(A,H)ANTHRACENE	0.22	U	
FLUORANTHENE	2.2	U	
FLUORENE	2.2	U	
INDENO(1,2,3-CD)PYRENE	0.22	U	
NAPHTHALENE	2.2	U	
PHENANTHRENE	2.2	U	
PYRENE	2.2	U	

PROJ_NO: 4248

SDG: F14718 MEDIA: WATER DATA FRACTION: PET

nsample	CEF-46-28I-01
samp_date	9/23/2002
lab_id	F14718-1
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	CEF-46-DU01-01

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	0.27	U	

nsample	CEF-46-29I-01
samp_date	9/23/2002
lab_id	F14718-3
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	

Parameter	Resut	Val Qual	Qual Code
TOTAL PETFOLEUM HYDROCARBONS	0.26	U	

nsample	CEF-46-DU01-01
samp_date	9/23/2002
lab_id	F14718-2
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	CEF-46-28I-01

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	0.27	U	

F14718

HOLDING TIME
10/21/02

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	CEF-46-28I-01	F14718-1	NORMAL	F14718	OV	09/23/02	/ /	10/04/02	0	0	11
%	CEF-46-29I-01	F14718-3	NORMAL	F14718	OV	09/23/02	/ /	10/04/02	0	0	11
%	CEF-46-DU01-01	F14718-2	NORMAL	F14718	OV	09/23/02	/ /	10/04/02	0	0	11
%	F14731-1MS	F14731-1MS	MS	F14718	OV	10/04/02	/ /	10/04/02	0	0	0
%	F14731-1MSD	F14731-1MSD	MSD	F14718	OV	10/04/02	/ /	10/04/02	0	0	0
%	VB522-BS	VB522-BS	BSP	F14718	OV	10/04/02	/ /	10/04/02	0	0	0
UG/L	VBLK1	VB522-MB	M_BLANK	F14718	OV	10/04/02	/ /	10/04/02	0	0	0
%	CEF-46-28I-01	F14718-1	NORMAL	F14718	PAH	09/23/02	09/30/02	10/02/02	7	2	9
%	CEF-46-29I-01	OP5986-MSD	MS	F14718	PAH	09/23/02	09/30/02	10/02/02	7	2	9
%	CEF-46-DU01-01	F14718-2	NORMAL	F14718	PAH	09/23/02	09/30/02	10/02/02	7	2	9
%	OP5986-BS	OP5986-BS	BSP	F14718	PAH	09/30/02	09/30/02	10/02/02	0	2	2
UG/L	PBL2	OP5986-MB	M_BLANK	F14718	PAH	09/27/02	09/30/02	10/02/02	3	2	5
UG/L	PBLK1	OP5986-MB	M_BLANK	F14718	PAH	09/27/02	09/30/02	10/01/02	3	1	4
%	CEF-46-28I-01	F14718-1	NORMAL	F14718	TPH	09/23/02	09/27/02	09/28/02	4	1	5
%	CEF-46-29I-01	OP5970-MSD	MS	F14718	TPH	09/23/02	09/27/02	09/28/02	4	1	5
%	CEF-46-DU01-01	F14718-2	NORMAL	F14718	TPH	09/23/02	09/27/02	09/28/02	4	1	5
%	OP5970-BS	OP5970-BS	BSP	F14718	TPH	09/27/02	09/27/02	09/28/02	0	1	1
MG/L	PBL2	OP5970-MB	M_BLANK	F14718	TPH	09/30/02	09/27/02	09/30/02	-3	3	0
MG/L	PBLK1	OP5970-MB	M_BLANK	F14718	TPH	09/27/02	09/27/02	09/28/02	0	1	1

Accutest Laboratories

Sample Summary

Tetra Tech, NUS

Job No: F14718

NAS Cecil Field-CTO-248
Project No: N4248 WR#46

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F14718-1	09/23/02	13:30 AP	09/24/02	AQ	Ground Water	CEF-46-28I-01
F14718-2	09/23/02	00:00 AP	09/24/02	AQ	Ground Water	CEF-46-DU01-01
F14718-3	09/23/02	14:10 AP	09/24/02	AQ	Ground Water	CEF-46-29I-01

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-28I-01		
Lab Sample ID:	F14718-1	**Date Sampled:**	09/23/02
Matrix:	AQ - Ground Water	**Date Received:**	09/24/02
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	B0011871.D	1	10/04/02	JG	n/a	n/a	VB522
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	18.1	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	103%		86-115%
17060-07-0	1,2-Dichloroethane-D4	107%		78-125%
2037-26-5	Toluene-D8	94%		87-113%
460-00-4	4-Bromofluorobenzene	101%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-28I-01		
Lab Sample ID:	F14718-1	**Date Sampled:**	09/23/02
Matrix:	AQ - Ground Water	**Date Received:**	09/24/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE010465.D	1	10/02/02	MRE	09/30/02	OP5986	GEE474
Run #2							

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

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.3	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.3	1.1	ug/l	
120-12-7	Anthracene	ND	2.2	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	0.11	ug/l	
218-01-9	Chrysene	ND	2.2	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.2	0.54	ug/l	
86-73-7	Fluorene	ND	2.2	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	0.11	ug/l	
91-20-3	Naphthalene	ND	2.2	0.54	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	0.54	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	0.54	ug/l	
85-01-8	Phenanthrene	ND	2.2	1.1	ug/l	
129-00-0	Pyrene	ND	2.2	0.54	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	62%		32-142%
92-94-4	p-Terphenyl	78%		30-128%

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

0012

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-28I-01		
Lab Sample ID:	F14718-1	**Date Sampled:**	09/23/02
Matrix:	AQ - Ground Water	**Date Received:**	09/24/02
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP23972.D	1	09/28/02	SKW	09/27/02	OP5970	GOP853
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.27	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	84%		51-125%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-DU01-01		
Lab Sample ID:	F14718-2	**Date Sampled:**	09/23/02
Matrix:	AQ - Ground Water	**Date Received:**	09/24/02
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	B0011872.D	1	10/04/02	JG	n/a	n/a	VB522
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	17.8	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	103%		86-115%
17060-07-0	1,2-Dichloroethane-D4	107%		78-125%
2037-26-5	Toluene-D8	94%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-DU01-01		
Lab Sample ID:	F14718-2	**Date Sampled:**	09/23/02
Matrix:	AQ - Ground Water	**Date Received:**	09/24/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE010466.D	1	10/02/02	MRE	09/30/02	OP5986	GEE474
Run #2							

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

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.3	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.3	1.1	ug/l	
120-12-7	Anthracene	ND	2.2	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	0.11	ug/l	
218-01-9	Chrysene	ND	2.2	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.2	0.54	ug/l	
86-73-7	Fluorene	ND	2.2	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	0.11	ug/l	
91-20-3	Naphthalene	ND	2.2	0.54	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	0.54	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	0.54	ug/l	
85-01-8	Phenanthrene	ND	2.2	1.1	ug/l	
129-00-0	Pyrene	ND	2.2	0.54	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	58%		32-142%
92-94-4	p-Terphenyl	84%		30-128%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-DU01-01		
Lab Sample ID:	F14718-2	**Date Sampled:**	09/23/02
Matrix:	AQ - Ground Water	**Date Received:**	09/24/02
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP23973.D	1	09/28/02	SKW	09/27/02	OP5970	GOP853
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.27	0.19	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	79%		51-125%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-29I-01		
Lab Sample ID:	F14718-3	**Date Sampled:**	09/23/02
Matrix:	AQ - Ground Water	**Date Received:**	09/24/02
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	B0011873.D	5	10/04/02	JG	n/a	n/a	VB522
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	256	5.0	2.5	ug/l	
108-88-3	Toluene	2.6	5.0	2.5	ug/l	J
100-41-4	Ethylbenzene	ND	5.0	3.5	ug/l	
1330-20-7	Xylene (total)	17.4	15	5.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		86-115%
17060-07-0	1,2-Dichloroethane-D4	107%		78-125%
2037-26-5	Toluene-D8	94%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-29I-01		
Lab Sample ID:	F14718-3	**Date Sampled:**	09/23/02
Matrix:	AQ - Ground Water	**Date Received:**	09/24/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE010467.D	1	10/02/02	MRE	09/30/02	OP5986	GEE474
Run #2							

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

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.3	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.3	1.1	ug/l	
120-12-7	Anthracene	ND	2.1	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.21	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.21	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.21	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.21	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.21	0.11	ug/l	
218-01-9	Chrysene	ND	2.1	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.21	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.1	0.53	ug/l	
86-73-7	Fluorene	ND	2.1	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.21	0.11	ug/l	
91-20-3	Naphthalene	ND	2.1	0.53	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.1	0.53	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.1	0.53	ug/l	
85-01-8	Phenanthrene	ND	2.1	1.1	ug/l	
129-00-0	Pyrene	ND	2.1	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	61%		32-142%
92-94-4	p-Terphenyl	35%		30-128%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-29I-01		
Lab Sample ID:	F14718-3	**Date Sampled:**	09/23/02
Matrix:	AQ - Ground Water	**Date Received:**	09/24/02
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP23974.D	1	09/28/02	SKW	09/27/02	OP5970	GOP853
Run #2							

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.26	0.17	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	71%		51-125%

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

TETRA TECH NUS, INC.

CHAIN OF CUSTODY | NUMBER 0295 | F14718

PAGE 1 OF ____

PROJECT NO: N4248	FACILITY: SITE 46, NASCF	PROJECT MANAGER: P. Calligan	PHONE NUMBER: 813 806 0292
SAMPLERS (SIGNATURE): [signature]		FIELD OPERATIONS LEADER: M. DALE	PHONE NUMBER: 904 636 6165
		CARRIER/WAYBILL NUMBER: Fedex	

LABORATORY NAME AND CONTACT: ACCUTEST

ADDRESS: 4405 Vineland Rd Suite C-15

CITY, STATE: ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

	DATE YEAR 2002	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	BTEX (8260B)	PAH (8310)	TEPH (FL-PRO)						COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)										G	G	G						
PRESERVATIVE USED										HCL	–	H_2SO_4						
1	9/23	1330	CEF-46-28I-01	CEF-46-28I	0	50	GW	G	7	3	2	2						Cool to 4°C
2	9/23	0000	CEF-46-DU01-01		0	50	GW	G	7	3	2	2						
3	9/23	1410	CEF-46-29I-01	CEF-46-29I	0	50	GW	G	21	9	6	6						N4248 WR46

1. RELINQUISHED BY [signature]	DATE 9/23/02	TIME 1630	1. RECEIVED BY Muna Mohammed	DATE 9-24-02	TIME 0900
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

Tetra Tech NUS, Inc.

Internal Correspondence

TO: Mr. Paul Calligan

DATE: November 25, 2002

FROM: Michael T. Akers

CC: File

SUBJECT: Organic Data Validation – VOCs, PAHs, TPH
CTO248 – NAS Cecil Field
SDG F15160

SAMPLES: 1/Aqueous

CEF-46-27D-01

OVERVIEW

The sample set for CTO248 SDG F15160; Naval Air Station Cecil Field, Jacksonville, Florida consists of one (1) aqueous environmental sample. The environmental sample was analyzed for Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), and Total Petroleum Hydrocarbons (TPH).

The sample was collected by Tetra Tech NUS on October 23, 2002 and analyzed by Accutest Laboratories. All analyses were performed in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria and analyzed according to SW-846 Method 8260B (VOCs), SW-846 Method 8310 (PAHs), and FDEP FL-PRO (TPH) analytical and reporting protocol. The data in this SDG was validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
* • Laboratory method/field quality control blank results
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter.

Volatiles Fraction

All quality control criteria were met for this fraction.

Polycyclic Aromatic Hydrocarbon Fraction

All quality control criteria were met for this fraction.

Total Petroleum Hydrocarbon Fraction

All quality control criteria were met for this fraction.

Executive Summary

Laboratory performance: None.

Other factors affecting data quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (February, 1996), and the NFESC guidelines "Navy Installation Restoration Chemical Data Quality Manual" (September, 1999). The text of the report has been formulated to address only those problems affecting data quality.

"I attest that the data referenced herein was validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Michael T. Akers
Project Chemist
Tetra Tech NUS, Inc.

PROJ_NO: 4248

SDG: F15160 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-46-27D-01
samp_date	10/23/2002
lab_id	F15160-1
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZENE	0.5	U	
ETHYLBENZENE	0.7	U	
TOLUENE	1.9		
TOTAL XYLENES	1	U	

PROJ_NO: 4248

SDG: F15160 MEDIA: WATER DATA FRACTION: PAH

nsample	CEF-46-27D-01
samp_date	10/23/2002
lab_id	F15160-1
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	0.52	U	
2-METHYLNAPHTHALENE	0.52	U	
ACENAPHTHENE	1	U	
ACENAPHTHYLENE	1	U	
ANTHRACENE	1	U	
BENZO(A)ANTHRACENE	0.1	U	
BENZO(A)PYRENE	0.1	U	
BENZO(B)FLUORANTHENE	0.1	U	
BENZO(G,H,I)PERYLENE	0.1	U	
BENZO(K)FLUORANTHENE	0.1	U	
CHRYSENE	1	U	
DIBENZO(A,H)ANTHRACENE	0.1	U	
FLUORANTHENE	0.52	U	
FLUORENE	1	U	
INDENO(1,2,3-CD)PYRENE	0.1	U	
NAPHTHALENE	0.52	U	
PHENANTHRENE	1	U	
PYRENE	0.52	U	

PROJ_NO: 4248

SDG: F15160 MEDIA: WATER DATA FRACTION: PET

nsample	CEF-46-27D-01
samp_date	10/23/2002
lab_id	F15160-1
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	0.18	U	

F15160

HOLDING TIME
11/21/02

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	CEF-46-27D-01	F15160-1	NORMAL	F15160	OV	10/23/02	/ /	11/05/02	0	0	13
%	F15161-4MS	F15161-4MS	MS	F15160	OV	11/05/02	/ /	11/05/02	0	0	0
%	F15161-4MSD	F15161-4MSD	MSD	F15160	OV	11/05/02	/ /	11/05/02	0	0	0
UG/L	VBLK1	VC573-MB	M_BLANK	F15160	OV	11/05/02	/ /	11/05/02	0	0	0
%	VC573-BS	VC573-BS	BSP	F15160	OV	11/05/02	/ /	11/05/02	0	0	0
%	CEF-46-27D-01	F15160-1	NORMAL	F15160	PAH	10/23/02	10/28/02	10/30/02	5	2	7
%	OP6197-BS	OP6197-BS	BSP	F15160	PAH	10/28/02	10/28/02	10/30/02	0	2	2
%	OP6197-MS	OP6197-MS	MS	F15160	PAH	10/28/02	10/28/02	10/30/02	0	2	2
%	OP6197-MSD	OP6197-MSD	MSD	F15160	PAH	10/28/02	10/28/02	10/30/02	0	2	2
UG/L	PBL2	OP6197-MB	M_BLANK	F15160	PAH	10/28/02	10/28/02	10/30/02	0	2	2
UG/L	PBLK1	OP6197-MB	M_BLANK	F15160	PAH	10/28/02	10/28/02	10/31/02	0	3	3
%	CEF-46-27D-01	F15160-1	NORMAL	F15160	TPH	10/23/02	10/28/02	10/31/02	5	3	8
%	OP6204-BS	OP6204-BS	BSP	F15160	TPH	10/28/02	10/28/02	10/31/02	0	3	3
%	OP6204-MS	OP6204-MS	MS	F15160	TPH	10/28/02	10/28/02	10/31/02	0	3	3
%	OP6204-MSD	OP6204-MSD	MSD	F15160	TPH	10/28/02	10/28/02	10/31/02	0	3	3
MG/L	PBLK1	OP6204-MB	M_BLANK	F15160	TPH	10/28/02	10/28/02	10/31/02	0	3	3

Accutest Laboratories

Sample Summary

Tetra Tech, NUS

NAS Cecil Field-CTO-248
Project No: N4248-WR46

Job No: F15160

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F15160-1	10/23/02	18:50 MD	10/25/02	AQ	Ground Water	CEF-46-27D-01

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-27D-01		
Lab Sample ID:	F15160-1	**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	C0013024.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	ND	1.0	0.50	ug/l	
108-88-3	Toluene	1.9	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	108%		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	101%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-27D-01		
Lab Sample ID:	F15160-1	**Date Sampled:**	10/23/02
Matrix:	AQ - Ground Water	**Date Received:**	10/25/02
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA012692.D	1	10/30/02	MRE	10/28/02	OP6197	GAA594
Run #2							

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

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.2	1.0	ug/l	
208-96-8	Acenaphthylene	ND	4.2	1.0	ug/l	
120-12-7	Anthracene	ND	2.1	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.21	0.10	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.21	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.21	0.10	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.21	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.21	0.10	ug/l	
218-01-9	Chrysene	ND	2.1	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.21	0.10	ug/l	
206-44-0	Fluoranthene	ND	2.1	0.52	ug/l	
86-73-7	Fluorene	ND	2.1	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.21	0.10	ug/l	
91-20-3	Naphthalene	ND	2.1	0.52	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.1	0.52	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.1	0.52	ug/l	
85-01-8	Phenanthrene	ND	2.1	1.0	ug/l	
129-00-0	Pyrene	ND	2.1	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	68%		32-142%
92-94-4	p-Terphenyl	50%		30-128%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46-27D-01		
Lab Sample ID:	F15160-1	**Date Sampled:**	10/23/02
Matrix:	AQ - Ground Water	**Date Received:**	10/25/02
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP25181.D	1	10/31/02	SKW	10/28/02	OP6204	GOP879
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.27	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	93%		51-125%

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

TETRA TECH NUS, INC. CECIL FIELD

CHAIN OF CUSTODY

NUMBER 0354

PD100

PAGE 1 OF 1

PROJECT NO: N428	FACILITY: SITE 46	PROJECT MANAGER: PAUL CALLIGAN	PHONE NUMBER: 813 806 0202
SAMPLERS (SIGNATURE): M. W. Dale For C. METZ/ P. Leverette		FIELD OPERATIONS LEADER: MERV DALE	PHONE NUMBER: 904 636 6125
		CARRIER/WAYBILL NUMBER: Fedex 8371 1005 7620	

LABORATORY NAME AND CONTACT: ACCUTEST Sue Bell

ADDRESS: 4405 Vineland Rd C-15

CITY, STATE: ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2002	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	BTEX SW846 8260B	PAH SW846 8310	TRPH FL-PRO					COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)									G	G	G					
PRESERVATIVE USED									HCL	None	H_2SO_4					
1) 10/23	1850	CEF-46-27D-01				GW	G	7	3	2	2					Cool to 4°C
																N428-WR46

1. RELINQUISHED BY: M. W. Dale	DATE: 10/24/02	TIME: 1900	1. RECEIVED BY: Fedex	DATE: 10/25/02	TIME: 10/25/02
2. RELINQUISHED BY: FED EX	DATE: 10/25/02	TIME: 0915	2. RECEIVED BY:	DATE: 10/25/02	TIME: 0915
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					

4.0° 2.4° 10/25/02

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

Southeast ACCUTEST Laboratories

01/22/03

Technical Report for

Tetra Tech, NUS

NAS Cecil Field-CTO-248

WORK RELEASE#N4248 WR105

Accutest Job Number: F16141

Report to:

Total number of pages in report: 80

Accredited in accordance with nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK

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Southeast • 4405 Vineland Road • Suite C-15 • Orlando, FL 32811 • tel: 407-425-6700 • fax: 407-425-0707 • http://www.accutest.com

Sample Summary

Tetra Tech, NUS

Job No: F16141

NAS Cecil Field-CTO-248
Project No: WORK RELEASE#N4248 WR105

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F16141-1	01/07/03	10:50 RM	01/10/03	AQ	Ground Water	CEF-46GW31I-01
F16141-2	01/07/03	11:00 RM	01/10/03	AQ	Ground Water	CEF-46GW30I-01
F16141-3	01/07/03	00:00 RM	01/10/03	AQ	Ground Water	CEF-46GWDU02-01

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46GW31I-01		
Lab Sample ID:	F16141-1	Date Sampled:	01/07/03
Matrix:	AQ - Ground Water	Date Received:	01/10/03
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	C0014167.D	1	01/14/03	KW	n/a	n/a	VC622
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	ND	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	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	90%		78-125%
2037-26-5	Toluene-D8	95%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46GW31I-01		
Lab Sample ID:	F16141-1	Date Sampled:	01/07/03
Matrix:	AQ - Ground Water	Date Received:	01/10/03
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	AA013898.D	1	01/16/03	SM	01/13/03	OP6731	GAA660
Run #2 [b]	EE012580.D	1	01/16/03	SM	01/16/03	OP6758	GEE548

	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2	870 ml	1.0 ml

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.1	1.0	ug/l	
208-96-8	Acenaphthylene	ND	4.1	1.0	ug/l	
120-12-7	Anthracene	ND	2.1	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.21	0.10	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.21	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.21	0.10	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.21	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.21	0.10	ug/l	
218-01-9	Chrysene	ND	2.1	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.21	0.10	ug/l	
206-44-0	Fluoranthene	ND	2.1	0.52	ug/l	
86-73-7	Fluorene	ND	2.1	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.21	0.10	ug/l	
91-20-3	Naphthalene	ND	2.1	0.52	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.1	0.52	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.1	0.52	ug/l	
85-01-8	Phenanthrene	ND	2.1	1.0	ug/l	
129-00-0	Pyrene	ND	2.1	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	60%	64%	32-142%
92-94-4	p-Terphenyl	25% [c]	30%	30-128%

(a) Confirmed ND by re-extraction and reanalysis beyond holdtime.
(b) Confirmation run.
(c) Surrogates outside of control limits, all values should be considered estimated.

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46GW31I-01		
Lab Sample ID:	F16141-1	Date Sampled:	01/07/03
Matrix:	AQ - Ground Water	Date Received:	01/10/03
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP26560.D	1	01/13/03	SKW	01/13/03	OP6733	GOP914
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.28	0.19	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%		51-125%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46GW30I-01		
Lab Sample ID:	F16141-2	Date Sampled:	01/07/03
Matrix:	AQ - Ground Water	Date Received:	01/10/03
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	C0014170.D	1	01/14/03	KW	n/a	n/a	VC622
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	ND	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	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	91%		78-125%
2037-26-5	Toluene-D8	96%		87-113%
460-00-4	4-Bromofluorobenzene	95%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46GW30I-01		
Lab Sample ID:	F16141-2	Date Sampled:	01/07/03
Matrix:	AQ - Ground Water	Date Received:	01/10/03
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA013899.D	1	01/16/03	SM	01/13/03	OP6731	GAA660
Run #2							

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

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.3	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.3	1.1	ug/l	
120-12-7	Anthracene	ND	2.2	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	0.11	ug/l	
218-01-9	Chrysene	ND	2.2	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.2	0.54	ug/l	
86-73-7	Fluorene	ND	2.2	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	0.11	ug/l	
91-20-3	Naphthalene	ND	2.2	0.54	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	0.54	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	0.54	ug/l	
85-01-8	Phenanthrene	ND	2.2	1.1	ug/l	
129-00-0	Pyrene	ND	2.2	0.54	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%		32-142%
92-94-4	p-Terphenyl	67%		30-128%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46GW30I-01		
Lab Sample ID:	F16141-2	Date Sampled:	01/07/03
Matrix:	AQ - Ground Water	Date Received:	01/10/03
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP26563.D	1	01/13/03	SKW	01/13/03	OP6733	GOP914
Run #2							

	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.26	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	82%		51-125%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46GWDU02-01		
Lab Sample ID:	F16141-3	Date Sampled:	01/07/03
Matrix:	AQ - Ground Water	Date Received:	01/10/03
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	C0014171.D	1	01/14/03	KW	n/a	n/a	VC622
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	ND	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	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	90%		78-125%
2037-26-5	Toluene-D8	95%		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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46GWDU02-01		
Lab Sample ID:	F16141-3	Date Sampled:	01/07/03
Matrix:	AQ - Ground Water	Date Received:	01/10/03
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA013900.D	1	01/16/03	SM	01/13/03	OP6731	GAA660
Run #2							

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

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.2	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.2	1.1	ug/l	
120-12-7	Anthracene	ND	2.1	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.21	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.21	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.21	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.21	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.21	0.11	ug/l	
218-01-9	Chrysene	ND	2.1	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.21	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.1	0.53	ug/l	
86-73-7	Fluorene	ND	2.1	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.21	0.11	ug/l	
91-20-3	Naphthalene	ND	2.1	0.53	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.1	0.53	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.1	0.53	ug/l	
85-01-8	Phenanthrene	ND	2.1	1.1	ug/l	
129-00-0	Pyrene	ND	2.1	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	77%		32-142%
92-94-4	p-Terphenyl	61%		30-128%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-46GWDU02-01		
Lab Sample ID:	F16141-3	Date Sampled:	01/07/03
Matrix:	AQ - Ground Water	Date Received:	01/10/03
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP26564.D	1	01/13/03	SKW	01/13/03	OP6733	GOP914
Run #2							

	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.26	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%		51-125%

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

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Blank Spike Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC622-BS	C0014163.D	1	01/14/03	KW	n/a	n/a	VC622

The QC reported here applies to the following samples: Method: SW846 8260B

F16141-1, F16141-2, F16141-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	28.4	114	76-123
100-41-4	Ethylbenzene	25	25.5	102	76-117
108-88-3	Toluene	25	25.6	102	76-118
1330-20-7	Xylene (total)	75	76.2	102	78-120

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	86-115%
17060-07-0	1,2-Dichloroethane-D4	92%	78-125%
2037-26-5	Toluene-D8	94%	87-113%
460-00-4	4-Bromofluorobenzene	93%	84-117%

Method Blank Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC622-MB	C0014164.D	1	01/14/03	KW	n/a	n/a	VC622

The QC reported here applies to the following samples: Method: SW846 8260B

F16141-1, F16141-2, F16141-3

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	86-115%
17060-07-0	1,2-Dichloroethane-D4	92%	78-125%
2037-26-5	Toluene-D8	94%	87-113%
460-00-4	4-Bromofluorobenzene	97%	84-117%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F16141-1MS	C0014168.D	1	01/14/03	KW	n/a	n/a	VC622
F16141-1MSD	C0014169.D	1	01/14/03	KW	n/a	n/a	VC622
F16141-1	C0014167.D	1	01/14/03	KW	n/a	n/a	VC622

The QC reported here applies to the following samples: Method: SW846 8260B

F16141-1, F16141-2, F16141-3

CAS No.	Compound	F16141-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		25	28.9	116	28.5	114	1	71-127/8
100-41-4	Ethylbenzene	ND		25	25.2	101	25.0	100	1	72-119/7
108-88-3	Toluene	ND		25	25.2	101	24.9	100	1	73-119/10
1330-20-7	Xylene (total)	ND		75	75.4	101	74.5	99	1	73-123/8

CAS No.	Surrogate Recoveries	MS	MSD	F16141-1	Limits
1868-53-7	Dibromofluoromethane	101%	100%	99%	86-115%
17060-07-0	1,2-Dichloroethane-D4	89%	89%	90%	78-125%
2037-26-5	Toluene-D8	93%	94%	95%	87-113%
460-00-4	4-Bromofluorobenzene	91%	90%	97%	84-117%

Instrument Performance Check (BFB)

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample:	VC622-BFB	Injection Date:	01/14/03
Lab File ID:	C0014161.D	Injection Time:	09:19
Instrument ID:	GCMSC		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	13782	35.2		Pass
75	30.0 - 60.0% of mass 95	16675	42.6		Pass
95	Base peak, 100% relative abundance	39112	100.0		Pass
96	5.0 - 9.0% of mass 95	2513	6.4		Pass
173	Less than 2.0% of mass 174	78	0.2	(0.2) [a]	Pass
174	50.0 - 100.0% of mass 95	38192	97.6		Pass
175	5.0 - 9.0% of mass 174	2571	6.6	(6.7) [a]	Pass
176	95.0 - 101.0% of mass 174	36642	93.7	(95.9) [a]	Pass
177	5.0 - 9.0% of mass 176	2333	6.0	(6.4) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VC622-CC617	C0014162.D	01/14/03	09:45	00:26	Continuing cal 40
VC622-BS	C0014163.D	01/14/03	10:12	00:53	Blank Spike
VC622-MB	C0014164.D	01/14/03	10:39	01:20	Method Blank
ZZZZZZ	C0014165.D	01/14/03	11:06	01:47	(unrelated sample)
ZZZZZZ	C0014166.D	01/14/03	11:33	02:14	(unrelated sample)
F16141-1	C0014167.D	01/14/03	11:59	02:40	CEF-46GW31I-01
F16141-1MS	C0014168.D	01/14/03	12:26	03:07	Matrix Spike
F16141-1MSD	C0014169.D	01/14/03	12:53	03:34	Matrix Spike Duplicate
F16141-2	C0014170.D	01/14/03	13:20	04:01	CEF-46GW30I-01
F16141-3	C0014171.D	01/14/03	13:47	04:28	CEF-46GWDU02-01
ZZZZZZ	C0014172.D	01/14/03	14:14	04:55	(unrelated sample)
ZZZZZZ	C0014173.D	01/14/03	14:41	05:22	(unrelated sample)
ZZZZZZ	C0014174.D	01/14/03	15:08	05:49	(unrelated sample)
ZZZZZZ	C0014175.D	01/14/03	15:35	06:16	(unrelated sample)
ZZZZZZ	C0014176.D	01/14/03	16:02	06:43	(unrelated sample)
ZZZZZZ	C0014177.D	01/14/03	16:29	07:10	(unrelated sample)
ZZZZZZ	C0014178.D	01/14/03	16:56	07:37	(unrelated sample)
ZZZZZZ	C0014179.D	01/14/03	17:22	08:03	(unrelated sample)
ZZZZZZ	C0014180.D	01/14/03	17:49	08:30	(unrelated sample)
ZZZZZZ	C0014181.D	01/14/03	18:16	08:57	(unrelated sample)
ZZZZZZ	C0014182.D	01/14/03	18:42	09:23	(unrelated sample)
ZZZZZZ	C0014183.D	01/14/03	19:09	09:50	(unrelated sample)
ZZZZZZ	C0014184.D	01/14/03	19:36	10:17	(unrelated sample)
ZZZZZZ	C0014185.D	01/14/03	20:02	10:43	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample:	VC622-BFB	Injection Date:	01/14/03
Lab File ID:	C0014161.D	Injection Time:	09:19
Instrument ID:	GCMSC		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	C0014186.D	01/14/03	20:29	11:10	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample:	VC617-BFB	Injection Date:	01/03/03
Lab File ID:	C0014063.D	Injection Time:	13:18
Instrument ID:	GCMSC		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	16317	37.5		Pass
75	30.0 - 60.0% of mass 95	19976	45.9		Pass
95	Base peak, 100% relative abundance	43528	100.0		Pass
96	5.0 - 9.0% of mass 95	3350	7.7		Pass
173	Less than 2.0% of mass 174	152	0.35	(0.37) [a]	Pass
174	50.0 - 100.0% of mass 95	41416	95.1		Pass
175	5.0 - 9.0% of mass 174	3273	7.5	(7.9) [a]	Pass
176	95.0 - 101.0% of mass 174	40938	94.0	(98.8) [a]	Pass
177	5.0 - 9.0% of mass 176	2616	6.0	(6.4) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VC617-IC617	C0014064.D	01/03/03	13:44	00:26	Initial cal 1
VC617-IC617	C0014065.D	01/03/03	14:10	00:52	Initial cal 5
VC617-IC617	C0014066.D	01/03/03	14:37	01:19	Initial cal 20
VC617-ICC617	C0014067.D	01/03/03	15:03	01:45	Initial cal 40
VC617-IC617	C0014068.D	01/03/03	15:30	02:12	Initial cal 70
VC617-IC617	C0014069.D	01/03/03	15:56	02:38	Initial cal 100

Volatile Internal Standard Area Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Check Std:	VC622-CC617	Injection Date:	01/14/03
Lab File ID:	C0014162.D	Injection Time:	09:45
Instrument ID:	GCMSC	Method:	SW846 8260B

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	1021048	10.27	938959	13.51	571752	16.05	77341	7.49
Upper Limit [a]	2042096	10.77	1877918	14.01	1143504	16.55	154682	7.99
Lower Limit [b]	510524	9.77	469480	13.01	285876	15.55	38671	6.99

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
VC622-BS	1103436	10.27	986973	13.51	575528	16.05	91388	7.50
VC622-MB	1069580	10.27	930368	13.51	501548	16.05	86424	7.51
ZZZZZZ	981763	10.27	858917	13.51	462231	16.05	72151	7.50
ZZZZZZ	943961	10.27	824499	13.51	442789	16.06	70108	7.50
F16141-1	944302	10.27	827677	13.51	437771	16.05	68940	7.50
F16141-1MS	976161	10.27	888828	13.51	542003	16.05	73135	7.50
F16141-1MSD	1036854	10.27	937604	13.51	566129	16.06	81027	7.50
F16141-2	998357	10.27	867199	13.51	467833	16.06	78477	7.50
F16141-3	938752	10.27	820686	13.51	437845	16.05	71209	7.50
ZZZZZZ	912569	10.27	799523	13.51	429163	16.05	64651	7.50
ZZZZZZ	932377	10.27	805960	13.51	430045	16.05	68509	7.50
ZZZZZZ	902551	10.27	787481	13.51	424997	16.06	66588	7.50
ZZZZZZ	874881	10.27	771861	13.51	407651	16.05	66039	7.50
ZZZZZZ	950159	10.28	910459	13.51	569033	16.06	62706	7.50
ZZZZZZ	1121456	10.27	953008	13.51	516400	16.05	89328	7.51
ZZZZZZ	1026877	10.27	901113	13.51	480451	16.06	79092	7.50
ZZZZZZ	954264	10.27	837193	13.51	452259	16.06	68738	7.51
ZZZZZZ	914537	10.27	798908	13.51	426566	16.06	65756	7.50
ZZZZZZ	882216	10.28	774031	13.51	417139	16.05	65629	7.50
ZZZZZZ	875837	10.27	761985	13.51	408089	16.05	68303	7.50
ZZZZZZ	862475	10.27	758266	13.51	407757	16.06	63479	7.50
ZZZZZZ	843619	10.28	741469	13.51	399428	16.05	62478	7.50
ZZZZZZ	833035	10.27	726519	13.51	393179	16.05	61402	7.50
ZZZZZZ	822607	10.27	716441	13.51	392230	16.05	66640	7.50

IS 1 = Fluorobenzene
IS 2 = Chlorobenzene-D5
IS 3 = 1,4-Dichlorobenzene-d4
IS 4 = Tert Butyl Alcohol-D10

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Method: SW846 8260B Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
F16141 1	C0014167.D	99.0	90.0	95.0	97.0
F16141-2	C0014170.D	100.0	91.0	96.0	95.0
F16141-3	C0014171.D	99.0	90.0	95.0	97.0
F16141-1MS	C0014168.D	101.0	89.0	93.0	91.0
F16141-1MSD	C0014169.D	100.0	89.0	94.0	90.0
VC622-BS	C0014163.D	102.0	92.0	94.0	93.0
VC622-MB	C0014164.D	102.0	92.0	94.0	97.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	86-115%
S2 = 1,2-Dichloroethane-D4	78-125%
S3 = Toluene-D8	87-113%
S4 = 4-Bromofluorobenzene	84-117%

Initial Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: VC617-ICC617
Lab FileID: C0014067.D

Response Factor Report MSVOA5

Method : C:\MSDCHEM\2\METHODS\826045.M (RTE Integrator)
Title : EPA 624 & SWA 5030B/8260B
Last Update : Fri Jan 03 16:30:41 2003
Response via : Initial Calibration

Calibration Files
1 =C0014064.D 2 =C0014065.D 3 =C0014066.D
4 =C0014067.D 5 =C0014068.D 6 =C0014069.D

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	Fluorobenzene	----------	----------	----------	ISTD	----------	----------	----------	
2)		Dichlorodifluoromet	0.248	0.287	0.265	0.265	0.252	0.258	0.263	5.19
3)	P	Chloromethane	0.766	0.750	0.645	0.647	0.628	0.640	0.680	9.07
4)	C	Vinyl Chloride	0.452	0.487	0.435	0.434	0.413	0.418	0.440	6.13
5)		Bromomethane		0.191	0.173	0.173	0.167	0.159	0.172	6.69
6)		Chloroethane	0.211	0.226	0.202	0.202	0.201	0.199	0.207	5.03
7)		Trichlorofluorometh	0.314	0.327	0.299	0.314	0.310	0.321	0.314	3.14
8)		Ethyl ether	0.233	0.286	0.281	0.288	0.288	0.291	0.278	7.96
9)	C	1,1-Dichloroethene	0.435	0.416	0.456	0.485	0.485	0.502	0.463	7.25
10)		Freon 113	0.248	0.190	0.206	0.220	0.218	0.227	0.218	9.05
11)		Acetone		0.138	0.109	0.109	0.108	0.109	0.115	11.30
12)		Iodomethane	0.337	0.356	0.374	0.384	0.394	0.403	0.375	6.60
13)		Methyl Acetate	0.264	0.295	0.284	0.288	0.297	0.300	0.288	4.60
14)		Carbon Disulfide	0.752	0.634	0.660	0.706	0.703	0.725	0.697	6.21
15)		Hexane		0.389	0.412	0.452	0.451	0.469	0.434	7.59
16)		Methylene Chloride		0.631	0.623	0.628	0.627	0.636	0.629	0.79
17)		trans-1,2-Dichloroe	0.450	0.446	0.457	0.476	0.487	0.496	0.469	4.35
18)		Acrylonitrile	0.116	0.106	0.120	0.126	0.130	0.132	0.121	7.99
19)		Methyl Tert Butyl E		0.564	0.563	0.582	0.594	0.606	0.582	3.21
20)	P	1,1-Dichloroethane	0.538	0.530	0.544	0.561	0.570	0.579	0.554	3.50
21)		Vinyl acetate		1.231	1.234	1.316	1.345	1.327	1.291	4.21
22)		Di-isopropyl ether	1.386	1.638	1.649	1.679	1.700	1.699	1.625	7.39
23)		ETBE		1.025	1.092	1.130	1.167	1.184	1.120	5.68
24)		2,2-Dichloropropane	0.165	0.172	0.193	0.199	0.195	0.196	0.187	7.61
25)		cis-1,2-Dichloroeth	0.214	0.219	0.227	0.227	0.233	0.237	0.226	3.74
26)		2-Butanone	0.159	0.178	0.175	0.182	0.186	0.187	0.178	5.66
27)		Bromochloromethane	0.109	0.119	0.117	0.122	0.125	0.126	0.120	5.11
28)	C	Chloroform	0.320	0.355	0.344	0.356	0.358	0.365	0.350	4.57
29)		Tetrahydrofuran		0.121	0.114	0.118	0.123	0.122	0.119	3.02
30)		1,1,1-Trichloroetha	0.233	0.257	0.276	0.287	0.294	0.299	0.274	9.14
31)		Cyclohexane	0.652	0.543	0.605	0.657	0.671	0.691	0.636	8.44
32)	S	Dibromofluoromethan	0.256	0.258	0.255	0.252	0.257	0.255	0.255	0.80
33)		1,1-Dichloropropene	0.261	0.237	0.253	0.268	0.272	0.276	0.261	5.58
34)		Carbon Tetrachlorid	0.248	0.243	0.272	0.290	0.300	0.310	0.277	9.89
35)	S	1,2-Dichloroethane-	0.341	0.345	0.344	0.331	0.332	0.325	0.336	2.34
36)		Benzene	0.834	0.837	0.833	0.857	0.875	0.881	0.853	2.51
37)		TAME	0.492	0.587	0.594	0.617	0.636	0.647	0.596	9.33
38)		1,2-Dichloroethane	0.548	0.449	0.432	0.437	0.440	0.444	0.459	9.68
39)		Trichloroethene	0.212	0.195	0.202	0.211	0.216	0.221	0.209	4.51
40)		Methylcyclohexane		0.245	0.274	0.300	0.307	0.319	0.289	10.32
41)	C	1,2-Dichloropropane	0.289	0.328	0.327	0.338	0.346	0.348	0.330	6.52
42)		Dibromomethane	0.114	0.129	0.131	0.135	0.137	0.138	0.131	6.88
43)		Bromodichloromethan	0.230	0.265	0.267	0.272	0.279	0.285	0.266	7.30
44)		2-Nitropropane	0.100	0.108	0.110	0.116	0.118	0.118	0.112	6.25
45)		2-Chloroethyl vinyl		0.192	0.204	0.211	0.218	0.215	0.208	5.16
46)		4-Methyl-2-pentanon	0.356	0.414	0.419	0.426	0.438	0.439	0.415	7.35

Initial Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: VC617-ICC617
Lab FileID: C0014067.D

47)		cis-1,3-Dichloropro	0.303	0.341	0.348	0.360	0.368	0.375	0.349	7.41
48)	I	Chlorobenzene-d5	----------ISTD----------							
49)	S	Toluene-d8	1.192	1.190	1.185	1.165	1.173	1.163	1.178	1.08
50)	C	Toluene	1.169	1.086	1.111	1.150	1.173	1.192	1.147	3.52
51)		trans-1,3-Dichlorop	0.319	0.369	0.378	0.404	0.410	0.416	0.383	9.49
52)		1,1,2-Trichloroetha	0.194	0.195	0.192	0.195	0.196	0.199	0.195	1.18
53)		Tetrachloroethene	0.303	0.267	0.282	0.295	0.302	0.317	0.294	5.95
54)		2-hexanone	0.316	0.335	0.349	0.362	0.370	0.370	0.350	6.14
55)		1,3-Dichloropropane	0.394	0.429	0.415	0.422	0.422	0.424	0.418	2.98
56)		Dibromochloromethan	0.231	0.253	0.270	0.283	0.291	0.302	0.272	9.62
57)		1,2-Dibromoethane	0.223	0.236	0.244	0.249	0.255	0.261	0.245	5.55
58)		1-Chlorohexane	0.346	0.268	0.319	0.348	0.361	0.374	0.336	11.33
59)	P	Chlorobenzene	0.781	0.753	0.755	0.776	0.792	0.814	0.778	2.96
60)		1,1,1,2-Tetrachloro	0.252	0.280	0.289	0.303	0.310	0.316	0.292	8.07
61)	C	Ethylbenzene	1.249	1.165	1.226	1.291	1.324	1.356	1.268	5.48
62)		m,p-Xylene	0.952	0.909	0.961	1.008	1.041	1.055	0.988	5.74
63)		o-Xylene	0.934	0.942	1.006	1.053	1.088	1.100	1.021	7.05
64)		Styrene		0.747	0.819	0.882	0.915	0.935	0.860	8.94
65)	P	Bromoform		0.183	0.197	0.207	0.221	0.230	0.207	8.85
66)	I	1,4-Dichlorobenzene-d	----------ISTD----------							
67)		Isopropylbenzene	1.910	1.765	1.978	2.066	2.167	2.209	2.016	8.26
68)	S	4-Bromofluorobenzen	0.873	0.853	0.843	0.832	0.832	0.836	0.845	1.89
69)		Bromobenzene	0.678	0.665	0.674	0.674	0.707	0.708	0.684	2.69
70)	P	1,1,2,2-Tetrachloro	0.572	0.551	0.533	0.525	0.536	0.531	0.541	3.25
71)		trans-1,4-Dichloro-	0.197	0.173	0.222	0.256	0.276	0.289	0.236	19.36
		----- Linear regression ----- Coefficient = 0.9974								
		Response Ratio = -0.01627 + 0.29159 *A								
72)		1,2,3-Trichloroprop	0.147	0.152	0.156	0.153	0.157	0.156	0.154	2.38
73)		n-Propylbenzene	2.789	2.355	2.522	2.633	2.730	2.790	2.636	6.52
74)		2-Chlorotoluene	1.989	1.715	1.772	1.810	1.910	1.913	1.851	5.54
75)		4-Chlorotoluene	1.662	1.584	1.622	1.651	1.719	1.755	1.665	3.77
76)		1,3,5-Trimethylbenz	1.808	1.639	1.746	1.827	1.935	1.940	1.816	6.32
77)		Benzyl chloride		0.877	0.981	1.011	1.058	1.060	0.998	7.54
78)		sec-Butylbenzene	2.326	1.738	1.987	2.063	2.153	2.205	2.079	9.80
79)		1,3-Dichlorobenzene	1.364	1.161	1.165	1.191	1.236	1.265	1.230	6.28
80)		4-Isopropyltoluene	1.889	1.482	1.677	1.787	1.847	1.895	1.763	9.05
81)		1,4-Dichlorobenzene	1.439	1.249	1.221	1.251	1.286	1.318	1.294	6.07
82)		tert-Butylbenzene	1.046	0.861	0.940	0.986	1.024	1.036	0.982	7.21
83)		n-Butylbenzene		1.348	1.502	1.589	1.622	1.667	1.546	8.15
84)		1,2-Dichlorobenzene	1.285	1.113	1.145	1.153	1.198	1.216	1.185	5.20
85)		1,2,4-Trimethylbenz	1.938	1.746	1.851	1.919	1.998	2.025	1.913	5.33
86)		1,2-Dibromo-3-Chlor		0.083	0.078	0.082	0.083	0.087	0.083	3.82
87)		1,2,4-Trichlorobenz		0.646	0.672	0.700	0.720	0.745	0.697	5.60
88)		Hexachlorobutadiene		0.259	0.245	0.268	0.265	0.275	0.262	4.26
89)		Naphthalene		1.344	1.381	1.450	1.520	1.570	1.453	6.46
90)		1,2,3-Trichlorobenz		0.585	0.606	0.617	0.645	0.661	0.623	4.86
91)	I	Tert Butyl alcohol-d1	----------ISTD----------							
92)		Acrolein	3.271	2.721	2.811	3.095	2.938	3.122	2.993	6.91
93)		Tert-Butyl Alcohol	1.890	2.133	2.042	2.161	2.156	2.202	2.097	5.46
94)		1,4-Dioxane	0.171	0.149	0.140	0.158	0.148	0.149	0.153	7.03
95)		Cyclohexanone		0.831	0.778	0.850	0.878	0.869	0.841	4.72

(#) = Out of Range

826045.M Tue Jan 07 09:16:32 2003 RPT1

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: VC622-CC617
Lab FileID: C0014162.D

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\011403\C0014162.D Vial: 1
Acq On : 14 Jan 2003 9:45 am Operator: KarenW
Sample : CC617-40 Inst : MSVOA5
Misc : ms2025,vc622,,,,, Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\826045.M (RTE Integrator)
Title : EPA 624 & SWA 5030B/8260B
Last Update : Tue Jan 07 13:05:57 2003
Response via : Multiple Level Calibration

Min. RRF : 0.001 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	80	0.00
2		Dichlorodifluoromethane	0.263	0.256	2.7	77	0.01
3	P	Chloromethane	0.680	0.628	7.6	78	0.00
4	C	Vinyl Chloride	0.440	0.406	7.7	75	0.02
5		Bromomethane	0.172	0.211	-22.7#	98	0.00
6		Chloroethane	0.207	0.204	1.4	81	0.00
7		Trichlorofluoromethane	0.314	0.420	-33.8#	107	0.00
8		Ethyl ether	0.278	0.267	4.0	74	0.00
9	C	1,1-Dichloroethene	0.463	0.440	5.0	72	0.00
10		Freon 113	0.218	0.225	-3.2	82	-0.01
11		Acetone	0.115	0.114	0.9	84	-0.01
12		Iodomethane	0.375	0.380	-1.3	79	0.00
13		Methyl Acetate	0.288	0.310	-7.6	86	0.00
14		Carbon Disulfide	0.697	0.731	-4.9	83	0.00
15		Hexane	0.434	0.424	2.3	75	0.00
16		Methylene Chloride	0.629	0.627	0.3	80	0.00
17		trans-1,2-Dichloroethene	0.469	0.443	5.5	74	0.00
18		Acrylonitrile	0.121	0.147	-21.5#	94	0.00
19		Methyl Tert Butyl Ether	0.582	0.596	-2.4	82	0.00
20	P	1,1-Dichloroethane	0.554	0.540	2.5	77	0.00
21		Vinyl acetate	1.291	1.322	-2.4	80	0.00
22		Di-isopropyl ether	1.625	1.650	-1.5	78	0.00
23		ETBE	1.120	1.054	5.9	74	0.00
24		2,2-Dichloropropane	0.187	0.182	2.7	73	0.00
25		cis-1,2-Dichloroethene	0.226	0.246	-8.8	87	0.00
26		2-Butanone	0.178	0.195	-9.6	86	0.00
27		Bromochloromethane	0.120	0.132	-10.0	86	0.00
28	C	Chloroform	0.350	0.360	-2.9	81	0.00
29		Tetrahydrofuran	0.119	0.122	-2.5	83	0.00
30		1,1,1-Trichloroethane	0.274	0.266	2.9	74	0.00
31		Cyclohexane	0.636	0.599	5.8	73	0.00
32	S	Dibromofluoromethane	0.255	0.256	-0.4	81	0.00
33		1,1-Dichloropropene	0.261	0.261	0.0	78	0.00
34		Carbon Tetrachloride	0.277	0.284	-2.5	78	0.00
35	S	1,2-Dichloroethane-d4	0.336	0.290	13.7	70	0.00
36		Benzene	0.853	0.904	-6.0	84	0.00
37		TAME	0.596	0.637	-6.9	82	0.00
38		1,2-Dichloroethane	0.459	0.391	14.8	71	0.00
39		Trichloroethene	0.209	0.220	-5.3	83	0.00
40		Methylcyclohexane	0.289	0.307	-6.2	82	0.00
41	C	1,2-Dichloropropane	0.330	0.336	-1.8	79	0.00
42		Dibromomethane	0.131	0.148	-13.0	87	0.00

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: VC622-CC617
Lab FileID: C0014162.D

43		Bromodichloromethane	0.266	0.280	-5.3	82	0.00
44		2-Nitropropane	0.112	0.120	-7.1	83	0.00
45		2-Chloroethyl vinyl ether	0.208	0.204	1.9	77	0.00
46		4-Methyl-2-pentanone	0.415	0.469	-13.0	88	0.00
47		cis-1,3-Dichloropropene	0.349	0.377	-8.0	84	0.00
48	I	Chlorobenzene-d5	1.000	1.000	0.0	91	0.00
49	S	Toluene-d8	1.178	1.084	8.0	85	0.00
50	C	Toluene	1.147	1.088	5.1	86	0.00
51		trans-1,3-Dichloropropene	0.383	0.373	2.6	84	0.00
52		1,1,2-Trichloroethane	0.195	0.201	-3.1	94	0.00
53		Tetrachloroethene	0.294	0.287	2.4	88	0.00
54		2-hexanone	0.350	0.360	-2.9	90	0.00
55		1,3-Dichloropropane	0.418	0.414	1.0	89	0.00
56		Dibromochloromethane	0.272	0.276	-1.5	89	0.00
57		1,2-Dibromoethane	0.245	0.255	-4.1	93	0.00
58		1-Chlorohexane	0.336	0.327	2.7	85	0.00
59	P	Chlorobenzene	0.778	0.765	1.7	89	0.00
60		1,1,1,2-Tetrachloroethane	0.292	0.295	-1.0	88	0.00
61	C	Ethylbenzene	1.268	1.225	3.4	86	0.00
62		m,p-Xylene	0.988	0.951	3.7	86	0.00
63		o-Xylene	1.021	1.017	0.4	88	0.00
64		Styrene	0.860	0.840	2.3	87	0.00
65	P	Bromoform	0.207	0.216	-4.3	95	0.00
66	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	99	0.00
67		Isopropylbenzene	2.016	1.851	8.2	88	0.00
68	S	4-Bromofluorobenzene	0.845	0.756	10.5	90	0.00
69		Bromobenzene	0.684	0.655	4.2	96	0.00
70	P	1,1,2,2-Tetrachloroethane	0.541	0.546	-0.9	103	0.00
71		trans-1,4-Dichloro-2-butene	0.236	0.200	15.3	77	0.00
72		1,2,3-Trichloropropane	0.154	0.151	1.9	97	0.00
73		n-Propylbenzene	2.636	2.408	8.6	90	0.00
74		2-Chlorotoluene	1.851	1.661	10.3	90	0.00
75		4-Chlorotoluene	1.665	1.526	8.3	91	0.00
76		1,3,5-Trimethylbenzene	1.816	1.681	7.4	91	0.00
77		Benzyl chloride	0.998	1.109	-11.1	108	0.00
78		sec-Butylbenzene	2.079	1.920	7.6	92	0.00
79		1,3-Dichlorobenzene	1.230	1.179	4.1	98	0.00
80		4-Isopropyltoluene	1.763	1.670	5.3	92	0.00
81		1,4-Dichlorobenzene	1.294	1.242	4.0	98	0.00
82		tert-Butylbenzene	0.982	0.890	9.4	89	0.00
83		n-Butylbenzene	1.546	1.513	2.1	94	0.00
84		1,2-Dichlorobenzene	1.185	1.166	1.6	100	0.00
85		1,2,4-Trimethylbenzene	1.913	1.789	6.5	92	0.00
86		1,2-Dibromo-3-Chloropropane	0.083	0.080	3.6	96	0.00
87		1,2,4-Trichlorobenzene	0.697	0.691	0.9	97	0.00
88		Hexachlorobutadiene	0.262	0.265	-1.1	98	0.00
89		Naphthalene	1.453	1.571	-8.1	107	0.00
90		1,2,3-Trichlorobenzene	0.623	0.638	-2.4	102	0.00
91	I	Tert Butyl alcohol-d10	1.000	1.000	0.0	90	0.00
92		Acrolein	2.993	1.987	33.6#	58	0.00
93		Tert-Butyl Alcohol	2.097	1.960	6.5	82	0.00
94		1,4-Dioxane	0.153	0.161	-5.2	92	0.00
95		Cyclohexanone	0.841	0.834	0.8	88	0.00

Average % D = 5.9

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: VC622-CC617
Lab FileID: C0014162.D

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(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 C0014067.D 826045.M          Wed Jan 15 08:49:55 2003   RPT1
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GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries

Blank Spike Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6731-BS	AA013866.D	1	01/15/03	SM	01/13/03	OP6731	GAA659

The QC reported here applies to the following samples: Method: EPA 8310

F16141-1, F16141-2, F16141-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	20	16.7	84	52-104
208-96-8	Acenaphthylene	20	15.4	77	51-103
120-12-7	Anthracene	20	16.4	82	60-112
56-55-3	Benzo(a)anthracene	10	8.3	83	64-111
50-32-8	Benzo(a)pyrene	10	9.9	99	56-118
205-99-2	Benzo(b)fluoranthene	10	8.3	83	63-117
191-24-2	Benzo(g,h,i)perylene	10	9.2	92	45-118
207-08-9	Benzo(k)fluoranthene	10	8.5	85	56-118
218-01-9	Chrysene	10	8.3	83	67-112
53-70-3	Dibenzo(a,h)anthracene	10	8.5	85	41-119
206-44-0	Fluoranthene	20	16.3	82	61-111
86-73-7	Fluorene	20	15.7	79	54-105
193-39-5	Indeno(1,2,3-cd)pyrene	10	8.5	85	46-118
91-20-3	Naphthalene	20	14.2	71	44-105
90-12-0	1-Methylnaphthalene	20	15.1	76	47-102
91-57-6	2-Methylnaphthalene	20	15.3	77	47-101
85-01-8	Phenanthrene	20	15.8	79	55-109
129-00-0	Pyrene	20	16.2	81	61-109

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	82%	32-142%
92-94-4	p-Terphenyl	89%	30-128%

Blank Spike Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6731-BS	AA013895.D	1	01/16/03	SM	01/13/03	OP6731	GAA660

The QC reported here applies to the following samples: Method: EPA 8310

F16141-1, F16141-2, F16141-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	20	16.8	84	52-104
208-96-8	Acenaphthylene	20	15.9	80	51-103
120-12-7	Anthracene	20	16.3	82	60-112
56-55-3	Benzo(a)anthracene	10	8.3	83	64-111
50-32-8	Benzo(a)pyrene	10	10.1	101	56-118
205-99-2	Benzo(b)fluoranthene	10	8.2	82	63-117
191-24-2	Benzo(g,h,i)perylene	10	9.2	92	45-118
207-08-9	Benzo(k)fluoranthene	10	8.5	85	56-118
218-01-9	Chrysene	10	8.3	83	67-112
53-70-3	Dibenzo(a,h)anthracene	10	8.4	84	41-119
206-44-0	Fluoranthene	20	16.4	82	61-111
86-73-7	Fluorene	20	15.8	79	54-105
193-39-5	Indeno(1,2,3-cd)pyrene	10	8.5	85	46-118
91-20-3	Naphthalene	20	14.5	73	44-105
90-12-0	1-Methylnaphthalene	20	15.5	78	47-102
91-57-6	2-Methylnaphthalene	20	15.7	79	47-101
85-01-8	Phenanthrene	20	15.9	80	55-109
129-00-0	Pyrene	20	16.1	81	61-109

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	82%	32-142%
92-94-4	p-Terphenyl	89%	30-128%

Blank Spike Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6733-BS	OP26558.D	1	01/13/03	SKW	01/13/03	OP6733	GOP914

The QC reported here applies to the following samples: Method: FLORIDA-PRO

F16141-1, F16141-2, F16141-3

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH (C8-C40)	0.85	0.755	89	59-109

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	94%	51-125%

Blank Spike Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6758-BS	EE012576.D	1	01/16/03	SM	01/16/03	OP6758	GEE548

The QC reported here applies to the following samples: Method: EPA 8310

F16141-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	74%	32-142%
92-94-4	p-Terphenyl	79%	30-128%

Method Blank Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6731-MB	AA013867.D	1	01/15/03	SM	01/13/03	OP6731	GAA659

The QC reported here applies to the following samples: Method: EPA 8310

F16141-1, F16141-2, F16141-3

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	ND	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		Limits
84-15-1	o-Terphenyl	79%	32-142%
92-94-4	p-Terphenyl	76%	30-128%

Method Blank Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6731-MB	AA013896.D	1	01/16/03	SM	01/13/03	OP6731	GAA660

The QC reported here applies to the following samples: Method: EPA 8310

F16141-1, F16141-2, F16141-3

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	ND	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		Limits
84-15-1	o-Terphenyl	80%	32-142%
92-94-4	p-Terphenyl	76%	30-128%

Method Blank Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6733-MB	OP26559.D	1	01/13/03	SKW	01/13/03	OP6733	GOP914

The QC reported here applies to the following samples: Method: FLORIDA-PRO

F16141-1, F16141-2, F16141-3

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	ND	0.25	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	87%	51-125%

Method Blank Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6733-MB	OP26593.D	1	01/14/03	SKW	01/13/03	OP6733	GOP915

The QC reported here applies to the following samples: Method: FLORIDA-PRO

F16141-1, F16141-2, F16141-3

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	ND	0.25	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	95%	51-125%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6731-MS	AA013885.D	1	01/15/03	SM	01/13/03	OP6731	GAA659
OP6731-MSD	AA013886.D	1	01/15/03	SM	01/13/03	OP6731	GAA659
F16141-1 [a]	AA013898.D	1	01/16/03	SM	01/13/03	OP6731	GAA660

The QC reported here applies to the following samples: Method: EPA 8310

F16141-1, F16141-2, F16141-3

CAS No.	Compound	F16141-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		47.6	39.3	83	37.6	79	4	20-140/45
208-96-8	Acenaphthylene	ND		47.6	37.1	78	35.6	75	4	17-141/46
120-12-7	Anthracene	ND		47.6	38.6	81	38.7	81	0	48-123/23
56-55-3	Benzo(a)anthracene	ND		23.8	18.4	77	18.4	77	0	42-134/22
50-32-8	Benzo(a)pyrene	ND		23.8	22.7	95	22.5	95	1	55-119/23
205-99-2	Benzo(b)fluoranthene	ND		23.8	18.9	79	18.7	79	1	58-118/22
191-24-2	Benzo(g,h,i)perylene	ND		23.8	20.7	87	20.5	86	1	57-118/23
207-08-9	Benzo(k)fluoranthene	ND		23.8	19.6	82	19.3	81	2	58-120/22
218-01-9	Chrysene	ND		23.8	24.2	102	23.8	100	2	49-137/23
53-70-3	Dibenzo(a,h)anthracene	ND		23.8	19.2	81	18.9	79	2	57-120/23
206-44-0	Fluoranthene	ND		47.6	38.7	81	38.8	81	0	55-117/22
86-73-7	Fluorene	ND		47.6	37.2	78	35.7	75	4	25-135/38
193-39-5	Indeno(1,2,3-cd)pyrene	ND		23.8	19.1	80	18.8	79	2	57-118/22
91-20-3	Naphthalene	ND		47.6	33.3	70	31.8	67	5	18-129/45
90-12-0	1-Methylnaphthalene	ND		47.6	35.7	75	34.3	72	4	18-131/46
91-57-6	2-Methylnaphthalene	ND		47.6	36.0	76	34.5	72	4	12-135/48
85-01-8	Phenanthrene	ND		47.6	37.6	79	37.1	78	1	39-129/27
129-00-0	Pyrene	ND		47.6	39.1	82	39.2	82	0	57-116/21

CAS No.	Surrogate Recoveries	MS	MSD	F16141-1	Limits
84-15-1	o-Terphenyl	79%	79%	60%	32-142%
92-94-4	p-Terphenyl	78%	79%	25%* [b]	30-128%

(a) Confirmed ND by re-extraction and reanalysis beyond holdtime.
(b) Surrogates outside of control limits, all values should be considered estimated.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6733-MS	OP26561.D	1	01/13/03	SKW	01/13/03	OP6733	GOP914
OP6733-MSD	OP26562.D	1	01/13/03	SKW	01/13/03	OP6733	GOP914
F16141-1	OP26560.D	1	01/13/03	SKW	01/13/03	OP6733	GOP914

The QC reported here applies to the following samples: Method: FLORIDA-PRO

F16141-1, F16141-2, F16141-3

CAS No.	Compound	F16141-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (C8-C40)	ND		1.93	1.48	77	1.85	96	22	38-133/23

CAS No.	Surrogate Recoveries	MS	MSD	F16141-1	Limits
84-15-1	o-Terphenyl	72%	96%	78%	51-125%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6758-MS	EE012612.D	10	01/17/03	SM	01/16/03	OP6758	GEE549
OP6758-MSD	EE012613.D	10	01/17/03	SM	01/16/03	OP6758	GEE549
F16176-5	EE012586.D	1	01/16/03	SM	01/16/03	OP6758	GEE548
F16176-5 [a]	EE012610.D	10	01/17/03	SM	01/16/03	OP6758	GEE549

The QC reported here applies to the following samples: Method: EPA 8310

F16141-1

CAS No.	Compound	F16176-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD

CAS No.	Surrogate Recoveries	MS	MSD	F16176-5	F16176-5	Limits
84-15-1	o-Terphenyl	108%	104%	94%	106%	32-142%
92-94-4	p-Terphenyl	86%	84%	68%	74%	30-128%

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

Method Blank Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6758-MB	EE012577.D	1	01/16/03	SM	01/16/03	OP6758	GEE548

The QC reported here applies to the following samples: Method: EPA 8310

OP6758-BS, OP6758-MS, OP6758-MSD

CAS No.	Compound	Result	RL	Units	Q

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	68%	32-142%
92-94-4	p-Terphenyl	65%	30-128%

Method Blank Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6758-MB	EE012605.D	1	01/17/03	SM	01/16/03	OP6758	GEE549

The QC reported here applies to the following samples: Method: EPA 8310

OP6758-BS, OP6758-MS, OP6758-MSD

CAS No.	Compound	Result	RL	Units	Q

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	68%	32-142%
92-94-4	p-Terphenyl	66%	30-128%

Semivolatile Surrogate Recovery Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Method: EPA 8310 Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S2 [a]
F16141-1	EE012580.D	64.0	30.0
F16141-1	AA013898.D	60.0	25.0* [b]
F16141-2	AA013899.D	78.0	67.0
F16141-3	AA013900.D	77.0	61.0
OP6731-BS	AA013866.D	82.0	89.0
OP6731-BS	AA013895.D	82.0	89.0
OP6731-MB	AA013867.D	79.0	76.0
OP6731-MB	AA013896.D	80.0	76.0
OP6731-MS	AA013885.D	79.0	78.0
OP6731-MSD	AA013886.D	79.0	79.0
OP6758-BS	EE012576.D	74.0	79.0
OP6758-MS	EE012612.D	108.0	86.0
OP6758-MSD	EE012613.D	104.0	84.0
OP6758-MB	EE012577.D	68.0	65.0
OP6758-MB	EE012605.D	68.0	66.0

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	32-142%
S2 = p-Terphenyl	30-128%

(a) Recovery from GC signal #1
(b) Surrogates outside of control limits, all values should be considered estimated.

Semivolatile Surrogate Recovery Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Method: FLORIDA-PRO Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
F16141-1	OP26560.D	78.0
F16141-2	OP26563.D	82.0
F16141-3	OP26564.D	81.0
OP6733-BS	OP26558.D	94.0
OP6733-MB	OP26559.D	87.0
OP6733-MB	OP26593.D	95.0
OP6733-MS	OP26561.D	72.0
OP6733-MSD	OP26562.D	96.0

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	51-125%

(a) Recovery from GC signal #1

GC Surrogate Retention Time Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Check Std:	GOP914-CC894	Injection Date:	01/13/03
Lab File ID:	OP26557.D	Injection Time:	17:10
Instrument ID:	GCOP	Method:	FLORIDA-PRO

	S1 [a] RT
Check Std	5.16

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
OP6733-BS	OP26558.D	01/13/03	17:31	5.16
OP6733-MB	OP26559.D	01/13/03	17:51	5.16
F16141-1	OP26560.D	01/13/03	18:12	5.16
OP6733-MS	OP26561.D	01/13/03	18:32	5.16
OP6733-MSD	OP26562.D	01/13/03	18:53	5.16
F16141-2	OP26563.D	01/13/03	19:13	5.16
F16141-3	OP26564.D	01/13/03	19:34	5.16

Surrogate Compounds

S1 = o-Terphenyl

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Check Std:	GAA660-CC629	Injection Date:	01/16/03
Lab File ID:	AA013894.D	Injection Time:	10:13
Instrument ID:	GCAA	Method:	EPA 8310

	S1 [a] RT	S1 [b] RT	S2 [a] RT	S2 [b] RT
Check Std	9.13	9.13	11.30	11.30

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT	S2 [a] RT	S2 [b] RT
OP6731-BS	AA013895.D	01/16/03	10:37	9.14		11.31	
OP6731-MB	AA013896.D	01/16/03	11:01	9.12		11.30	
ZZZZZZ	AA013897.D	01/16/03	11:25	9.20		11.34	
F16141-1	AA013898.D	01/16/03	11:49	9.23		11.36	
F16141-2	AA013899.D	01/16/03	12:12	9.15		11.31	
F16141-3	AA013900.D	01/16/03	12:36	9.16		11.31	
ZZZZZZ	AA013901.D	01/16/03	13:00	9.17		11.32	
ZZZZZZ	AA013902.D	01/16/03	13:24	9.17		11.32	
GAA660-ECC629	AA013903.D	01/16/03	13:47	9.15	9.15	11.32	11.32

Surrogate
Compounds

S1 = o-Terphenyl
S2 = p-Terphenyl

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

GC Surrogate Retention Time Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Check Std:	GEE548-CC541	Injection Date:	01/16/03
Lab File ID:	EE012575.D	Injection Time:	15:03
Instrument ID:	GCEE	Method:	EPA 8310

	S1 [a] RT	S2 [a] RT
Check Std	8.81	10.92

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S2 [a] RT
OP6758-BS	EE012576.D	01/16/03	15:27	8.82	10.92
OP6758-MB	EE012577.D	01/16/03	15:52	8.81	10.92
ZZZZZZ	EE012578.D	01/16/03	16:16	8.82	10.92
ZZZZZZ	EE012579.D	01/16/03	16:40	8.82	10.93
F16141-1	EE012580.D	01/16/03	17:04	8.82	10.93
ZZZZZZ	EE012581.D	01/16/03	17:28	8.82	10.93
ZZZZZZ	EE012582.D	01/16/03	17:52	8.81	10.92
ZZZZZZ	EE012583.D	01/16/03	18:17	8.82	10.92

Surrogate Compounds

S1 = o-Terphenyl
S2 = p-Terphenyl

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Check Std:	GOP915-CC894	Injection Date:	01/14/03
Lab File ID:	OP26590.D	Injection Time:	10:47
Instrument ID:	GCOP	Method:	FLORIDA-PRO

	S1 [a] RT
Check Std	5.16

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT
OP6733-MB	OP26593.D	01/14/03	12:29	5.16
ZZZZZZ	OP26594.D	01/14/03	12:50	5.15
ZZZZZZ	OP26595.D	01/14/03	13:10	5.16
ZZZZZZ	OP26596.D	01/14/03	13:31	5.15
ZZZZZZ	OP26597.D	01/14/03	13:52	5.15
ZZZZZZ	OP26598.D	01/14/03	14:12	5.15
ZZZZZZ	OP26599.D	01/14/03	14:33	5.16
ZZZZZZ	OP26600.D	01/14/03	14:54	5.16

Surrogate Compounds

S1 = o-Terphenyl

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Check Std:	GAA659-CC629	Injection Date:	01/15/03
Lab File ID:	AA013865.D	Injection Time:	11:29
Instrument ID:	GCAA	Method:	EPA 8310

	S1 [a] RT	S2 [a] RT
Check Std	8.97	11.23

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S2 [a] RT
OP6731-BS	AA013866.D	01/15/03	11:53	8.96	11.22
OP6731-MB	AA013867.D	01/15/03	12:16	8.98	11.23
ZZZZZZ	AA013868.D	01/15/03	12:40	8.99	11.23
ZZZZZZ	AA013869.D	01/15/03	13:04	9.01	11.23
ZZZZZZ	AA013870.D	01/15/03	13:28	9.03	11.24
ZZZZZZ	AA013871.D	01/15/03	13:52	9.01	11.24
ZZZZZZ	AA013872.D	01/15/03	14:15	9.02	11.24

Surrogate Compounds

S1 = o-Terphenyl
S2 = p-Terphenyl

(a) Retention time from GC signal #1

GC Surrogate Retention Time Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Check Std:	GAA659-CC629	Injection Date:	01/15/03
Lab File ID:	AA013883.D	Injection Time:	18:37
Instrument ID:	GCAA	Method:	EPA 8310

	S1 [a] RT	S1 [b] RT	S2 [a] RT	S2 [b] RT
Check Std	9.00	9.00	11.25	11.25

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT	S2 [a] RT	S2 [b] RT
OP6731-MS	AA013885.D	01/15/03	19:25	9.00		11.23	
OP6731-MSD	AA013886.D	01/15/03	19:49	8.98		11.24	
ZZZZZZ	AA013890.D	01/15/03	21:24	8.98		11.25	
GAA659-ECC629	AA013892.D	01/15/03	22:11	8.99	8.99	11.25	11.25

Surrogate Compounds

S1 = o-Terphenyl
S2 = p-Terphenyl

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

GC Surrogate Retention Time Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Check Std:	GEE549-CC541	Injection Date:	01/17/03
Lab File ID:	EE012611.D	Injection Time:	12:40
Instrument ID:	GCEE	Method:	EPA 8310

	S1 [a] RT	S1 [b] RT	S2 [a] RT	S2 [b] RT
Check Std	8.83	8.83	10.93	10.93

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S1 [b] RT	S2 [a] RT	S2 [b] RT
OP6758-MS	EE012612.D	01/17/03	13:04	8.83		10.93	
OP6758-MSD	EE012613.D	01/17/03	13:28	8.83		10.93	
ZZZZZZ	EE012614.D	01/17/03	13:53	8.83		10.94	
ZZZZZZ	EE012615.D	01/17/03	14:17	8.82		10.93	
ZZZZZZ	EE012616.D	01/17/03	14:41	8.83		10.93	
ZZZZZZ	EE012617.D	01/17/03	15:05	8.83		10.94	
ZZZZZZ	EE012618.D	01/17/03	15:29	8.84		10.94	
ZZZZZZ	EE012619.D	01/17/03	15:53	8.83		10.94	
ZZZZZZ	EE012620.D	01/17/03	16:18	8.83		10.93	
GEE549-ECC541	EE012621.D	01/17/03	16:42	8.84	8.84	10.94	10.94

Surrogate Compounds

S1 = o-Terphenyl
S2 = p-Terphenyl

(a) Retention time from GC signal #1
(b) Retention time from GC signal #2

GC Surrogate Retention Time Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Check Std:	GEE549-CC541	Injection Date:	01/17/03
Lab File ID:	EE012604.D	Injection Time:	09:51
Instrument ID:	GCEE	Method:	EPA 8310

	S1 [a] RT	S2 [a] RT
Check Std	8.83	10.93

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 [a] RT	S2 [a] RT
OP6758-MB	EE012605.D	01/17/03	10:15	8.83	10.94
ZZZZZZ	EE012606.D	01/17/03	10:39	8.82	10.93
ZZZZZZ	EE012607.D	01/17/03	11:03	8.82	10.94
ZZZZZZ	EE012608.D	01/17/03	11:28	8.83	10.94
ZZZZZZ	EE012609.D	01/17/03	11:52	8.83	10.94
F16176-5	EE012610.D	01/17/03	12:16	8.83	10.94

Surrogate Compounds

S1 = o-Terphenyl
S2 = p-Terphenyl

(a) Retention time from GC signal #1

Initial Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GOP894-ICC894
Lab FileID: OP25896.D

Response Factor Report FID 2

Method : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title : TPH by FL_PRO
Last Update : Tue Dec 03 15:25:44 2002
Response via : Initial Calibration

Calibration Files
1 =OP25894.D 2 =OP25895.D 3 =OP25896.D
4 =OP25897.D 5 =OP25898.D 6 =OP25899.D 7 =OP25900.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1)S O-TERPHENYL	3.601	3.702	3.759	3.751	3.803			3.723 E4	2.07
2)H TPH (C8-C40)	3.420	3.482	3.499	3.475	3.454	3.097	3.084	3.359 E4	5.51

Average % RSD = 3.8

(#) = Out of Range

FL_PRO_F.M Wed Dec 04 08:35:27 2002

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GOP914-CC894
Lab FileID: OP26557.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\2\DATA\0113PRO\OP26557.D          Vial: 22
Acq On    : 13 Jan 2003   5:10 pm                   Operator: stephw
Sample    : CC894-1020                              Inst    : FID 2
Misc      : op6713,gop914,30.8,,,1,10,soil          Multiplr: 1.00
IntFile   : events.e

Method       : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title        : TPH by FL_PRO
Last Update  : Mon Jan 13 13:23:16 2003
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  25%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 S	O-TERPHENYL	60.000	60.347	-0.6	100	0.00
2 H	TPH (C8-C40)	1020.000	997.545	2.2	94	0.00

Average % D = 1.4

(#) = Out of Range SPCC's out = 0 CCC's out = 0
OP25896.D FL_PRO_F.M Tue Jan 14 14:47:30 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GOP914-CC894
Lab FileID: OP26568.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\2\DATA\0113PRO\OP26568.D          Vial: 22
Acq On    : 13 Jan 2003   8:56 pm                    Operator: stephw
Sample    : CC894-1020                               Inst    : FID 2
Misc      : op6733,gop914,920,,,1,1,water            Multiplr: 1.00
IntFile   : events.e

Method       : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title        : TPH by FL_PRO
Last Update  : Mon Jan 13 13:23:16 2003
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  25%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 S	O-TERPHENYL	60.000	61.278	-2.1	101	0.00
2 H	TPH (C8-C40)	1020.000	1032.921	-1.3	97	0.00

Average % D = 1.7

(#) = Out of Range SPCC's out = 0 CCC's out = 0
OP25896.D FL_PRO_F.M Tue Jan 14 14:47:31 2003

Initial Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA629-ICC629
Lab FileID: AA013276.D

Response Factor Report DAD

Method : C:\HPCHEM\1\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Thu Dec 05 08:19:44 2002
Response via : Initial Calibration

Calibration Files
L1 =AA013280.D L2 =AA013274.D L3 =AA013275.D
L4 =AA013276.D L5 =AA013277.D L6 =AA013278.D L7 =AA013279.D

	Compound	L1	L2	L3	L4	L5	L6	L7	Avg	%RSD
1)	Naphthalene	4.658	5.393	4.608	4.390	4.127	4.274		4.575 E5	9.79
2)	Acenaphthylene	1.977	2.129	1.813	1.719	1.632	1.686		1.826 E5	10.49
3)	1-Methyl Naphthal	4.023	4.337	3.888	3.681	3.425	3.550		3.817 E5	8.78
4)	2-Methyl Naphthal	3.441	4.252	3.891	3.691	3.427	3.558		3.710 E5	8.55
5)	Acenaphthene	2.435	3.416	3.177	3.032	2.828	2.927		2.969 E5	11.20
6)	Fluorene	1.263	1.271	1.175	1.108	1.023	1.054		1.149 E6	9.16
7)	Phenanthrene	1.100	1.100	1.027	0.972	0.895	0.924		1.003 E6	8.75
8)S	O-Terphenyl	3.897	4.268	4.040	3.805	3.512	3.639		3.860 E5	7.07
9)	Anthracene	1.160	1.314	1.159	1.091	0.997	1.020		1.123 E5	10.28
10)	Fluoranthene	1.005	0.964	0.884	0.846	0.776	0.803		0.880 E6	10.22
11)	Pyrene	1.529	1.450	1.327	1.253	1.139	1.159		1.310 E6	11.98
12)S	P-Terphenyl	1.671	1.584	1.427	1.343	1.235	1.278		1.423 E6	12.18
13)	Benzo(a)Anthracen	2.860	2.685	2.393	2.279	2.083	2.147		2.408 E6	12.74
14)	Chrysene	3.533	3.568	3.131	2.896	2.600	2.596		3.054 E6	14.19
15)	Benzo(b)Fluoranth	1.624	1.396	1.276	1.230	1.131	1.173		1.305 E6	13.88
16)	Benzo(k)Fluoranth	8.509	8.255	7.539	7.365	6.744	7.002		7.569 E5	9.15
17)	Benzo(a) Pyrene	1.243	1.181	1.147	1.162	1.097	1.181	1.415	1.204 E6	8.53
18)	Dibenzo(a,h)anthr	1.401	1.220	1.129	1.095	1.010	1.052		1.151 E6	12.32
19)	Benzo(g,h,i) Pery	7.617	7.729	7.406	7.343	6.813	7.197		7.351 E5	4.43
20)	Indeno(1,2,3-cd)p	7.333	7.679	6.382	6.250	5.770	6.049		6.577 E5	11.50

Signal #2

1)	Naphthalene	3.066	3.061	2.828	2.675	2.563	2.652		2.808 E5	7.70
2)	Acenaphthylene	1.984	1.921	1.812	1.721	1.624	1.675		1.790 E5	7.94
3)	1-Methyl Naphthal	1.986	1.728	1.672	1.597	1.492	1.542		1.670 E5	10.59
4)	2-Methyl Naphthal	2.479	2.606	2.387	2.277	2.115	2.191		2.343 E5	7.85
5)	Acenaphthene	1.020	1.010	1.064	1.039	0.978	1.013		1.021 E5	2.83
6)	Fluorene	1.465	1.436	1.314	1.264	1.169	1.212		1.310 E6	9.13
7)	Phenanthrene	3.950	3.768	3.354	3.167	2.884	2.938		3.343 E6	13.07
8)S	O-Terphenyl	6.320	7.188	6.554	6.325	5.817	6.038		6.374 E5	7.44
9)	Anthracene	8.103	7.774	6.254	5.211	4.358		7.770	6.578 E6	23.63

----- Quadratic regression ----- Coefficient = 0.9998
Response Ratio = 864484.84652 + 6997554.26038 *A + -89299.77338 *A^2

10)	Fluoranthene	0.938	1.005	0.919	0.904	0.832	0.863		0.910 E6	6.63
11)	Pyrene	9.059	8.788	8.073	8.062	7.446	7.728		8.192 E5	7.54
12)S	P-Terphenyl	8.435	7.872	7.294	6.837	6.302	6.526		7.211 E5	11.40
13)	Benzo(a)Anthracen	2.149	1.989	1.830	1.741	1.600	1.656		1.828 E6	11.43
14)	Chrysene	2.870	2.914	2.674	2.545	2.335	2.409		2.624 E6	9.06
15)	Benzo(b)Fluoranth	1.325	1.266	1.142	1.092	0.999	1.036		1.143 E6	11.27
16)	Benzo(k)Fluoranth	2.115	1.982	1.787	1.719	1.575	1.636		1.802 E6	11.55
17)	Benzo(a) Pyrene	1.006	0.968	0.899	0.895	0.841	0.889	0.985	0.926 E6	6.53
18)	Dibenzo(a,h)anthr	3.250	3.292	2.920	2.747	2.498	2.533		2.873 E6	11.97
19)	Benzo(g,h,i) Pery	1.275	1.292	1.219	1.191	1.107	1.158		1.207 E6	5.83
20)	Indeno(1,2,3-cd)p	0.991	1.124	0.911	0.877	0.811	0.844		0.926 E6	12.40

(#) = Out of Range

Initial Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA629-ICC629
Lab FileID: AA013276.D

8310_32.M Thu Dec 05 09:27:36 2002

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA660-CC629
Lab FileID: AA013894.D

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\0116PAH\AA013894.D\DAD1B.CH Vial: 2
Signal #2 : F:\HPCHEM\1\DATA\0116PAH\AA013894.D\DAD1A.CH
Acq On : 16-Jan-2003, 10:13:58 Operator: SARAHM
Sample : CC629-10 Inst : DAD
Misc : op6731,gaa660,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e

Method : C:\HPCHEM\1\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Thu Jan 16 14:48:17 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	10.000	9.760	2.4	97	0.00
2		Acenaphthylene	10.000	9.879	1.2	99	0.00
3		1-Methyl Naphthalene	10.000	10.092	-0.9	99	0.00
4		2-Methyl Naphthalene	10.000	10.311	-3.1	98	0.00
5		Acenaphthene	10.000	10.543	-5.4	99	0.00
6		Fluorene	10.000	9.841	1.6	96	0.00
7		Phenanthrene	10.000	10.056	-0.6	98	-0.05
8	S	O-Terphenyl	10.000	9.818	1.8	94	-0.02
9		Anthracene	10.000	10.489	-4.9	102	-0.03
10		Fluoranthene	10.000	9.814	1.9	98	-0.02
11		Pyrene	10.000	9.724	2.8	96	-0.02
12	S	P-Terphenyl	10.000	10.177	-1.8	101	0.00
13		Benzo(a)Anthracene	5.000	4.872	2.6	98	0.00
14		Chrysene	5.000	4.944	1.1	96	0.00
15		Benzo(b)Fluoranthene	5.000	4.780	4.4	98	0.00
16		Benzo(k)Fluoranthene	5.000	4.932	1.4	99	0.00
17		Benzo(a) Pyrene	5.000	5.735	-14.7	120	0.00
18		Dibenzo(a,h)anthracene	5.000	4.883	2.3	100	0.00
19		Benzo(g,h,i) Perylene	5.000	5.312	-6.2	105	0.00
20		Indeno(1,2,3-cd)pyrene	5.000	4.890	2.2	101	0.00

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	10.000	9.689	3.1	96	0.00
2		Acenaphthylene	10.000	10.108	-1.1	100	0.00
3		1-Methyl Naphthalene	10.000	9.973	0.3	100	0.00
4		2-Methyl Naphthalene	10.000	9.903	1.0	97	0.00
5		Acenaphthene	10.000	10.210	-2.1	98	0.00
6		Fluorene	10.000	9.690	3.1	97	0.00
7		Phenanthrene	10.000	9.806	1.9	98	-0.05
8	S	O-Terphenyl	10.000	9.589	4.1	93	-0.02
9		Anthracene	10.000	10.394	-3.9	97	-0.03
10		Fluoranthene	10.000	10.603	-6.0	105	-0.02
11		Pyrene	10.000	9.678	3.2	98	-0.02
12	S	P-Terphenyl	10.000	10.172	-1.7	101	0.00
13		Benzo(a)Anthracene	5.000	4.809	3.8	96	0.00
14		Chrysene	5.000	4.969	0.6	98	0.00
15		Benzo(b)Fluoranthene	5.000	4.816	3.7	96	0.00

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA660-CC629
Lab FileID: AA013894.D

16	Benzo(k)Fluoranthene	5.000	4.829	3.4	97	0.00
17	Benzo(a) Pyrene	5.000	5.750	-15.0	118	0.00
18	Dibenzo(a,h)anthracene	5.000	4.959	0.8	98	0.00
19	Benzo(g,h,i) Perylene	5.000	5.187	-3.7	103	0.00
20	Indeno(1,2,3-cd)pyrene	5.000	4.778	4.4	97	0.00

Average % D = 3.3

(#) = Out of Range SPCC's out = 0 CCC's out = 0
AA013275.D 8310_32.M Thu Jan 16 15:01:02 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA660-ECC629
Lab FileID: AA013903.D

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\0116PAH\AA013903.D\DAD1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\0116PAH\AA013903.D\DAD1A.CH
Acq On : 16-Jan-2003, 13:47:59 Operator: SARAHM
Sample : ECC629-20 Inst : DAD
Misc : op6731,gaa660,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e

Method : C:\HPCHEM\1\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Thu Jan 16 14:32:27 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.154	9.2	95	0.00
2		Acenaphthylene	20.000	18.744	6.3	100	0.00
3		1-Methyl Naphthalene	20.000	18.594	7.0	96	0.00
4		2-Methyl Naphthalene	20.000	18.841	5.8	95	0.00
5		Acenaphthene	20.000	19.631	1.8	96	0.00
6		Fluorene	20.000	18.091	9.5	94	0.00
7		Phenanthrene	20.000	18.406	8.0	95	0.00
8	S	O-Terphenyl	20.000	18.037	9.8	91	0.00
9		Anthracene	20.000	18.877	5.6	97	0.00
10		Fluoranthene	20.000	17.920	10.4	93	0.00
11		Pyrene	20.000	17.602	12.0	92	0.00
12	S	P-Terphenyl	20.000	18.597	7.0	99	0.03
13		Benzo(a)Anthracene	10.000	8.877	11.2	94	0.03
14		Chrysene	10.000	8.775	12.3	93	0.03
15		Benzo(b)Fluoranthene	10.000	8.709	12.9	92	0.03
16		Benzo(k)Fluoranthene	10.000	8.979	10.2	92	0.03
17		Benzo(a) Pyrene	10.000	10.463	-4.6	108	0.03
18		Dibenzo(a,h)anthracene	10.000	8.865	11.4	93	0.04
19		Benzo(g,h,i) Perylene	10.000	9.669	3.3	97	0.03
20		Indeno(1,2,3-cd)pyrene	10.000	8.831	11.7	93	0.04

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	17.914	10.4	94	0.00
2		Acenaphthylene	20.000	18.701	6.5	97	0.00
3		1-Methyl Naphthalene	20.000	18.435	7.8	96	0.00
4		2-Methyl Naphthalene	20.000	18.318	8.4	94	0.00
5		Acenaphthene	20.000	20.034	-0.2	98	0.00
6		Fluorene	20.000	18.085	9.6	94	0.00
7		Phenanthrene	20.000	17.776	11.1	94	0.00
8	S	O-Terphenyl	20.000	17.740	11.3	89	0.00
9		Anthracene	20.000	18.252	8.7	92	0.00
10		Fluoranthene	20.000	19.798	1.0	100	0.00
11		Pyrene	20.000	17.960	10.2	91	0.00
12	S	P-Terphenyl	20.000	18.505	7.5	98	0.03
13		Benzo(a)Anthracene	10.000	8.845	11.5	93	0.03
14		Chrysene	10.000	9.073	9.3	94	0.03
15		Benzo(b)Fluoranthene	10.000	8.777	12.2	92	0.03

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA660-ECC629
Lab FileID: AA013903.D

16	Benzo(k)Fluoranthene	10.000	8.795	12.1	92	0.03
17	Benzo(a) Pyrene	10.000	10.438	-4.4	108	0.03
18	Dibenzo(a,h)anthracene	10.000	8.794	12.1	92	0.04
19	Benzo(g,h,i) Perylene	10.000	9.464	5.4	96	0.03
20	Indeno(1,2,3-cd)pyrene	10.000	8.695	13.1	92	0.04

Average % D = 8.6

(#) = Out of Range SPCC's out = 0 CCC's out = 0
AA013276.D 8310_32.M Thu Jan 16 14:46:32 2003

Initial Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE541-ICC541
Lab FileID: EE012442.D

Response Factor Report G1315A

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Tue Jan 07 13:07:18 2003
Response via : Initial Calibration

Calibration Files
L1 =EE012439.D L2 =EE012440.D L3 =EE012441.D
L4 =EE012442.D L5 =EE012443.D L6 =EE012444.D

		Compound	L1	L2	L3	L4	L5	L6	Avg		%RSD
1)		Naphthalene	8.860	8.020	7.867	7.379	7.251	7.288	7.777	E5	7.96
2)		Acenaphthylene	3.460	2.985	3.101	2.942	2.878	2.907	3.045	E5	7.14
3)		1-Methyl Naphthalen	7.371	6.555	6.511	6.115	6.008	6.060	6.437	E5	7.99
4)		2-Methyl Naphthalen	7.450	6.678	6.622	6.216	6.105	6.161	6.539	E5	7.77
5)		Acenaphthene	5.858	5.286	5.301	4.981	4.888	4.935	5.208	E5	7.01
6)		Fluorene	2.182	1.964	1.955	1.842	1.805	1.820	1.928	E6	7.35
7)		Phenanthrene	1.917	1.695	1.675	1.573	1.540	1.551	1.658	E6	8.60
8)	S	O-Terphenyl	7.042	6.655	6.628	6.270	6.150	6.209	6.492	E5	5.31
9)		Anthracene	2.532	2.291	2.173	2.084	1.961	1.932	2.162	E5	10.39
10)		Fluoranthene	1.603	1.493	1.449	1.374	1.343	1.356	1.437	E6	6.99
11)		Pyrene	2.568	2.377	2.292	2.169	2.100	2.092	2.267	E6	8.17
12)	S	P-Terphenyl	2.918	2.565	2.539	2.399	2.346	2.365	2.522	E6	8.50
13)		Benzo(a)Anthracene	4.645	4.234	4.147	3.890	3.804	3.835	4.093	E6	7.87
14)		Chrysene	6.320	5.804	5.701	5.299	5.146	5.127	5.566	E6	8.37
15)		Benzo(b)Fluoranthen	2.336	2.216	2.120	1.998	2.002	1.993	2.111	E6	6.71
16)		Benzo(k)Fluoranthen	1.361	1.323	1.280	1.237	1.168	1.182	1.259	E6	6.11
17)		Benzo(a) Pyrene	2.709	2.572	2.571	2.425	2.390	2.419	2.514	E6	4.94
18)		Dibenzo(a,h)anthrac	2.067	1.945	2.064	1.958	1.932	1.878	1.974	E6	3.85
19)		Benzo(g,h,i) Peryle	1.449	1.385	1.396	1.330	1.317	1.314	1.365	E6	3.96
20)		Indeno(1,2,3-cd)pyr	1.128	1.078	1.151	1.090	1.078	1.091	1.103	E6	2.71

Signal #2

1)		Naphthalene	5.288	4.682	4.568	4.283	4.290	4.309	4.570	E5	8.51
2)		Acenaphthylene	3.485	3.124	3.034	2.850	2.900	2.923	3.053	E5	7.67
3)		1-Methyl Naphthalen	3.243	2.821	2.801	2.635	2.651	2.671	2.804	E5	8.18
4)		2-Methyl Naphthalen	4.541	3.996	3.995	3.754	3.738	3.771	3.966	E5	7.71
5)		Acenaphthene	1.814	1.730	1.851	1.741	1.738	1.749	1.770	E5	2.80
6)		Fluorene	2.367	2.149	2.149	2.029	2.001	2.019	2.119	E6	6.51
7)		Phenanthrene	6.517	5.788	5.587	5.203	5.071	5.059	5.538	E6	10.16
8)	S	O-Terphenyl	1.161	1.167	1.161	1.093	1.079	1.089	1.125	E6	3.73
9)		Anthracene	1.429	1.294	1.169	0.995	0.868	0.775	1.088	E7	23.26

----- Quadratic regression ----- Coefficient = 0.9994
Response Ratio = 2824171.07000 + 12023621.84282 *A + -109952.33392 *A^2

10)		Fluoranthene	1.449	1.642	1.640	1.568	1.543	1.558	1.567	E6	4.54
11)		Pyrene	1.428	1.339	1.359	1.320	1.299	1.309	1.342	E6	3.52
12)	S	P-Terphenyl	1.416	1.256	1.220	1.177	1.154	1.165	1.232	E6	7.98
13)		Benzo(a)Anthracene	3.412	3.140	2.980	2.858	2.806	2.838	3.005	E6	7.78
14)		Chrysene	5.262	4.743	4.475	4.329	4.243	4.270	4.554	E6	8.63
15)		Benzo(b)Fluoranthen	2.155	2.009	1.973	1.849	1.854	1.835	1.946	E6	6.44
16)		Benzo(k)Fluoranthen	3.270	3.130	3.063	2.882	2.835	2.865	3.007	E6	5.81
17)		Benzo(a) Pyrene	2.259	2.080	2.072	1.951	1.917	1.933	2.035	E6	6.40
18)		Dibenzo(a,h)anthrac	5.645	5.352	5.319	4.994	4.883	4.898	5.182	E6	5.90
19)		Benzo(g,h,i) Peryle	2.440	2.271	2.277	2.165	2.140	2.171	2.244	E6	4.98
20)		Indeno(1,2,3-cd)pyr	1.599	1.498	1.549	1.449	1.442	1.460	1.499	E6	4.20

(#) = Out of Range

Initial Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE541-ICC541
Lab FileID: EE012442.D

8310_32.M Tue Jan 07 13:11:03 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE548-CC541
Lab FileID: EE012575.D

Evaluate Continuing Calibration Report

Signal #1 : E:\HPCHEM\1\DATA\0116PAH\EE012575.D\DAD1B.CH Vial: 2
Signal #2 : E:\HPCHEM\1\DATA\0116PAH\EE012575.D\DAD1A.CH
Acq On : 16-Jan-2003, 15:03:47 Operator: SARAHM
Sample : CC541-10 Inst : G1315A
Misc : op6758,gee548,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Tue Jan 07 13:07:18 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	10.000	9.743	2.6	96	-0.03
2		Acenaphthylene	10.000	9.783	2.2	96	-0.03
3		1-Methyl Naphthalene	10.000	9.690	3.1	96	-0.03
4		2-Methyl Naphthalene	10.000	9.711	2.9	96	-0.03
5		Acenaphthene	10.000	9.871	1.3	97	-0.03
6		Fluorene	10.000	9.771	2.3	96	-0.03
7		Phenanthrene	10.000	9.711	2.9	96	-0.03
8	S	O-Terphenyl	10.000	9.825	1.8	96	-0.03
9		Anthracene	10.000	9.552	4.5	95	-0.02
10		Fluoranthene	10.000	9.719	2.8	96	-0.02
11		Pyrene	10.000	9.769	2.3	97	-0.01
12	S	P-Terphenyl	10.000	9.738	2.6	97	0.00
13		Benzo(a)Anthracene	5.000	4.887	2.3	96	0.00
14		Chrysene	5.000	4.929	1.4	96	0.00
15		Benzo(b)Fluoranthene	5.000	4.854	2.9	97	0.01
16		Benzo(k)Fluoranthene	5.000	4.832	3.4	95	0.02
17		Benzo(a) Pyrene	5.000	4.814	3.7	94	0.02
18		Dibenzo(a,h)anthracene	5.000	5.058	-1.2	97	0.03
19		Benzo(g,h,i) Perylene	5.000	4.944	1.1	97	0.03
20		Indeno(1,2,3-cd)pyrene	5.000	5.025	-0.5	96	0.04

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	10.000	9.626	3.7	96	-0.03
2		Acenaphthylene	10.000	9.493	5.1	96	-0.03
3		1-Methyl Naphthalene	10.000	9.516	4.8	95	-0.03
4		2-Methyl Naphthalene	10.000	9.613	3.9	95	-0.03
5		Acenaphthene	10.000	10.098	-1.0	97	-0.03
6		Fluorene	10.000	9.760	2.4	96	-0.03
7		Phenanthrene	10.000	9.709	2.9	96	-0.03
8	S	O-Terphenyl	10.000	9.902	1.0	96	-0.03
9		Anthracene	10.000	10.089	-0.9	97	-0.02
10		Fluoranthene	10.000	10.060	-0.6	96	-0.02
11		Pyrene	10.000	9.681	3.2	96	-0.02
12	S	P-Terphenyl	10.000	9.664	3.4	98	0.00
13		Benzo(a)Anthracene	5.000	4.870	2.6	98	0.00
14		Chrysene	5.000	4.888	2.2	99	0.00
15		Benzo(b)Fluoranthene	5.000	4.914	1.7	97	0.01

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE548-CC541
Lab FileID: EE012575.D

16	Benzo(k)Fluoranthene	5.000	4.932	1.4	97	0.02
17	Benzo(a) Pyrene	5.000	4.903	1.9	96	0.02
18	Dibenzo(a,h)anthracene	5.000	4.982	0.4	97	0.03
19	Benzo(g,h,i) Perylene	5.000	4.916	1.7	97	0.03
20	Indeno(1,2,3-cd)pyrene	5.000	5.042	-0.8	98	0.04

Average % D = 2.3

(#) = Out of Range SPCC's out = 0 CCC's out = 0
EE012441.D 8310_32.M Fri Jan 17 11:00:02 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE548-CC541
Lab FileID: EE012584.D

Evaluate Continuing Calibration Report

Signal #1 : E:\HPCHEM\1\DATA\0116PAH\EE012584.D\DAD1B.CH Vial: 11
Signal #2 : E:\HPCHEM\1\DATA\0116PAH\EE012584.D\DAD1A.CH
Acq On : 16-Jan-2003, 18:41:18 Operator: SARAHM
Sample : CC541-20 Inst : G1315A
Misc : op6758,gee548,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Tue Jan 07 13:07:18 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	19.222	3.9	101	-0.02
2		Acenaphthylene	20.000	19.484	2.6	101	-0.02
3		1-Methyl Naphthalene	20.000	19.223	3.9	101	-0.02
4		2-Methyl Naphthalene	20.000	19.239	3.8	101	-0.02
5		Acenaphthene	20.000	19.364	3.2	101	-0.02
6		Fluorene	20.000	19.261	3.7	101	-0.02
7		Phenanthrene	20.000	19.152	4.2	101	-0.02
8	S	O-Terphenyl	20.000	19.421	2.9	101	-0.02
9		Anthracene	20.000	18.873	5.6	98	-0.01
10		Fluoranthene	20.000	19.271	3.6	101	-0.01
11		Pyrene	20.000	19.234	3.8	101	0.00
12	S	P-Terphenyl	20.000	19.194	4.0	101	0.00
13		Benzo(a)Anthracene	10.000	9.602	4.0	101	0.00
14		Chrysene	10.000	9.583	4.2	101	0.00
15		Benzo(b)Fluoranthene	10.000	9.723	2.8	103	0.01
16		Benzo(k)Fluoranthene	10.000	9.561	4.4	97	0.02
17		Benzo(a) Pyrene	10.000	9.714	2.9	101	0.02
18		Dibenzo(a,h)anthracene	10.000	9.561	4.4	96	0.02
19		Benzo(g,h,i) Perylene	10.000	9.546	4.5	98	0.02
20		Indeno(1,2,3-cd)pyrene	10.000	9.987	0.1	101	0.02

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	19.069	4.7	102	-0.02
2		Acenaphthylene	20.000	18.945	5.3	101	-0.02
3		1-Methyl Naphthalene	20.000	19.066	4.7	101	-0.02
4		2-Methyl Naphthalene	20.000	19.181	4.1	101	-0.02
5		Acenaphthene	20.000	19.992	0.0	102	-0.02
6		Fluorene	20.000	19.343	3.3	101	-0.02
7		Phenanthrene	20.000	19.017	4.9	101	-0.02
8	S	O-Terphenyl	20.000	19.601	2.0	101	-0.01
9		Anthracene	20.000	20.046	-0.2	100	-0.01
10		Fluoranthene	20.000	20.027	-0.1	100	-0.01
11		Pyrene	20.000	19.679	1.6	100	0.00
12	S	P-Terphenyl	20.000	19.248	3.8	101	0.00
13		Benzo(a)Anthracene	10.000	9.608	3.9	101	0.00
14		Chrysene	10.000	9.608	3.9	101	0.00
15		Benzo(b)Fluoranthene	10.000	9.647	3.5	102	0.01

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE548-CC541
Lab FileID: EE012584.D

16	Benzo(k)Fluoranthene	10.000	9.727	2.7	101	0.02
17	Benzo(a) Pyrene	10.000	9.662	3.4	101	0.02
18	Dibenzo(a,h)anthracene	10.000	9.743	2.6	101	0.02
19	Benzo(g,h,i) Perylene	10.000	9.733	2.7	101	0.02
20	Indeno(1,2,3-cd)pyrene	10.000	9.988	0.1	103	0.02

Average % D = 3.3

(#) = Out of Range SPCC's out = 0 CCC's out = 0
EE012442.D 8310_32.M Fri Jan 17 11:00:35 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GOP915-CC894
Lab FileID: OP26590.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\2\DATA\0114PRO\OP26590.D          Vial: 1
Acq On    : 14 Jan 2003  10:47 am                    Operator: stephw
Sample    : CC894-1020                               Inst    : FID 2
Misc      : op6732,gop915,30.0,,,1,1,soil            Multiplr: 1.00
IntFile   : events.e

Method       : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title        : TPH by FL_PRO
Last Update  : Mon Jan 13 13:23:16 2003
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  25%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 S	O-TERPHENYL	60.000	62.887	-4.8	104	0.00
2 H	TPH (C8-C40)	1020.000	1114.997	-9.3	105	0.00

Average % D = 7.1

(#) = Out of Range SPCC's out = 0 CCC's out = 0
OP25896.D FL_PRO_F.M Wed Jan 15 09:44:41 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GOP915-CC894
Lab FileID: OP26601.D

Evaluate Continuing Calibration Report

```
Data File : C:\HPCHEM\2\DATA\0114PRO\OP26601.D          Vial: 12
Acq On    : 14 Jan 2003   3:14 pm                    Operator: stephw
Sample    : CC894-1020                               Inst    : FID 2
Misc      : op6733,gop915,1010,,,1,1,water           Multiplr: 1.00
IntFile   : events.e

Method       : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title        : TPH by FL_PRO
Last Update  : Mon Jan 13 13:23:16 2003
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  25%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 S	O-TERPHENYL	60.000	63.458	-5.8	105	0.00
2 H	TPH (C8-C40)	1020.000	1135.416	-11.3	107	0.00

Average % D = 8.5

(#) = Out of Range SPCC's out = 0 CCC's out = 0
OP25896.D FL_PRO_F.M Wed Jan 15 09:44:42 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA659-CC629
Lab FileID: AA013865.D

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\0115PAH\AA013865.D\DAD1B.CH Vial: 2
Signal #2 : F:\HPCHEM\1\DATA\0115PAH\AA013865.D\DAD1A.CH
Acq On : 15-Jan-2003, 11:29:22 Operator: SARAHM
Sample : CC629-10 Inst : DAD
Misc : op6731,gaa659,1000,,,1,,WATER Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e

Method : C:\HPCHEM\1\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Thu Jan 16 10:19:24 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	10.000	9.665	3.4	96	0.00
2		Acenaphthylene	10.000	9.673	3.3	97	0.00
3		1-Methyl Naphthalene	10.000	9.862	1.4	97	0.00
4		2-Methyl Naphthalene	10.000	10.042	-0.4	96	0.00
5		Acenaphthene	10.000	10.584	-5.8	99	0.00
6		Fluorene	10.000	9.845	1.5	96	-0.05
7		Phenanthrene	10.000	9.998	0.0	98	-0.04
8	S	O-Terphenyl	10.000	9.778	2.2	93	-0.03
9		Anthracene	10.000	10.430	-4.3	101	-0.03
10		Fluoranthene	10.000	9.775	2.2	97	-0.01
11		Pyrene	10.000	9.774	2.3	96	-0.01
12	S	P-Terphenyl	10.000	10.191	-1.9	102	0.00
13		Benzo(a)Anthracene	5.000	4.884	2.3	98	0.00
14		Chrysene	5.000	4.937	1.3	96	-0.05
15		Benzo(b)Fluoranthene	5.000	4.786	4.3	98	-0.03
16		Benzo(k)Fluoranthene	5.000	4.927	1.5	99	-0.03
17		Benzo(a) Pyrene	5.000	5.726	-14.5	120	-0.03
18		Dibenzo(a,h)anthracene	5.000	4.911	1.8	100	-0.03
19		Benzo(g,h,i) Perylene	5.000	5.313	-6.3	105	-0.03
20		Indeno(1,2,3-cd)pyrene	5.000	4.868	2.6	100	-0.03

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	10.000	9.582	4.2	95	0.00
2		Acenaphthylene	10.000	9.860	1.4	97	0.00
3		1-Methyl Naphthalene	10.000	9.617	3.8	96	0.00
4		2-Methyl Naphthalene	10.000	9.589	4.1	94	0.00
5		Acenaphthene	10.000	10.409	-4.1	100	0.00
6		Fluorene	10.000	9.689	3.1	97	-0.05
7		Phenanthrene	10.000	9.778	2.2	97	-0.04
8	S	O-Terphenyl	10.000	9.600	4.0	93	-0.03
9		Anthracene	10.000	10.488	-4.9	97	-0.03
10		Fluoranthene	10.000	10.554	-5.5	105	-0.01
11		Pyrene	10.000	9.727	2.7	99	-0.01
12	S	P-Terphenyl	10.000	10.147	-1.5	100	0.00
13		Benzo(a)Anthracene	5.000	4.831	3.4	96	0.00
14		Chrysene	5.000	4.946	1.1	97	-0.05
15		Benzo(b)Fluoranthene	5.000	4.820	3.6	96	-0.03

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA659-CC629
Lab FileID: AA013865.D

16	Benzo(k)Fluoranthene	5.000	4.813	3.7	97	-0.03
17	Benzo(a) Pyrene	5.000	5.746	-14.9	118	-0.03
18	Dibenzo(a,h)anthracene	5.000	4.941	1.2	97	-0.03
19	Benzo(g,h,i) Perylene	5.000	5.204	-4.1	103	-0.03
20	Indeno(1,2,3-cd)pyrene	5.000	4.765	4.7	97	-0.03

Average % D = 3.5

(#) = Out of Range SPCC's out = 0 CCC's out = 0
AA013275.D 8310_32.M Thu Jan 16 10:19:46 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA659-CC629
Lab FileID: AA013874.D

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\0115PAH\AA013874.D\DAD1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\0115PAH\AA013874.D\DAD1A.CH
Acq On : 15-Jan-2003, 15:03:24 Operator: SARAHM
Sample : CC629-20 Inst : DAD
Misc : op6731,gaa659,1000,,,1,,WATER Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e

Method : C:\HPCHEM\1\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Thu Jan 16 10:10:49 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.134	9.3	94	0.00
2		Acenaphthylene	20.000	18.692	6.5	99	0.00
3		1-Methyl Naphthalene	20.000	18.565	7.2	96	0.00
4		2-Methyl Naphthalene	20.000	18.809	6.0	95	0.00
5		Acenaphthene	20.000	19.763	1.2	97	0.00
6		Fluorene	20.000	18.181	9.1	94	0.00
7		Phenanthrene	20.000	18.466	7.7	95	0.00
8	S	O-Terphenyl	20.000	18.304	8.5	93	0.00
9		Anthracene	20.000	19.904	0.5	102	0.00
10		Fluoranthene	20.000	18.032	9.8	94	0.01
11		Pyrene	20.000	17.739	11.3	93	0.00
12	S	P-Terphenyl	20.000	18.679	6.6	99	0.00
13		Benzo(a)Anthracene	10.000	8.904	11.0	94	0.00
14		Chrysene	10.000	8.827	11.7	93	-0.05
15		Benzo(b)Fluoranthene	10.000	8.760	12.4	93	-0.04
16		Benzo(k)Fluoranthene	10.000	9.042	9.6	93	-0.04
17		Benzo(a) Pyrene	10.000	10.445	-4.5	108	-0.04
18		Dibenzo(a,h)anthracene	10.000	8.974	10.3	94	-0.05
19		Benzo(g,h,i) Perylene	10.000	9.702	3.0	97	-0.05
20		Indeno(1,2,3-cd)pyrene	10.000	8.917	10.8	94	-0.05

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	17.770	11.2	93	0.00
2		Acenaphthylene	20.000	18.613	6.9	97	0.00
3		1-Methyl Naphthalene	20.000	18.354	8.2	96	0.00
4		2-Methyl Naphthalene	20.000	18.181	9.1	94	0.00
5		Acenaphthene	20.000	20.219	-1.1	99	0.00
6		Fluorene	20.000	18.090	9.6	94	0.00
7		Phenanthrene	20.000	17.763	11.2	94	0.00
8	S	O-Terphenyl	20.000	17.930	10.4	90	0.00
9		Anthracene	20.000	18.343	8.3	93	0.00
10		Fluoranthene	20.000	19.637	1.8	99	0.01
11		Pyrene	20.000	18.056	9.7	92	0.00
12	S	P-Terphenyl	20.000	18.597	7.0	98	0.00
13		Benzo(a)Anthracene	10.000	8.871	11.3	93	0.00
14		Chrysene	10.000	9.103	9.0	94	-0.05
15		Benzo(b)Fluoranthene	10.000	8.833	11.7	93	-0.04

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA659-CC629
Lab FileID: AA013874.D

16	Benzo(k)Fluoranthene	10.000	8.835	11.6	93	-0.04
17	Benzo(a) Pyrene	10.000	10.435	-4.4	108	-0.04
18	Dibenzo(a,h)anthracene	10.000	8.937	10.6	93	-0.05
19	Benzo(g,h,i) Perylene	10.000	9.502	5.0	96	-0.05
20	Indeno(1,2,3-cd)pyrene	10.000	8.802	12.0	93	-0.05

Average % D = 8.2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
AA013276.D 8310_32.M Thu Jan 16 10:12:48 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA659-CC629
Lab FileID: AA013883.D

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\0115PAH\AA013883.D\DAD1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\0115PAH\AA013883.D\DAD1A.CH
Acq On : 15-Jan-2003, 18:37:36 Operator: SARAHM
Sample : CC629-20 Inst : DAD
Misc : op6731,gaa659,1000,,,1,,WATER Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e

Method : C:\HPCHEM\1\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Thu Jan 16 10:10:49 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.060	9.7	94	0.00
2		Acenaphthylene	20.000	18.290	8.6	97	0.00
3		1-Methyl Naphthalene	20.000	18.522	7.4	96	0.00
4		2-Methyl Naphthalene	20.000	18.783	6.1	94	0.00
5		Acenaphthene	20.000	19.402	3.0	95	0.00
6		Fluorene	20.000	17.993	10.0	93	0.00
7		Phenanthrene	20.000	18.332	8.3	95	0.00
8	S	O-Terphenyl	20.000	17.990	10.1	91	0.00
9		Anthracene	20.000	18.273	8.6	94	0.00
10		Fluoranthene	20.000	17.884	10.6	93	0.00
11		Pyrene	20.000	17.623	11.9	92	0.00
12	S	P-Terphenyl	20.000	18.611	6.9	99	0.01
13		Benzo(a)Anthracene	10.000	8.897	11.0	94	0.03
14		Chrysene	10.000	8.823	11.8	93	0.00
15		Benzo(b)Fluoranthene	10.000	8.724	12.8	93	0.00
16		Benzo(k)Fluoranthene	10.000	9.023	9.8	93	0.00
17		Benzo(a) Pyrene	10.000	10.421	-4.2	108	0.00
18		Dibenzo(a,h)anthracene	10.000	8.916	10.8	94	0.00
19		Benzo(g,h,i) Perylene	10.000	9.626	3.7	96	0.00
20		Indeno(1,2,3-cd)pyrene	10.000	8.882	11.2	93	0.00

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	17.945	10.3	94	0.00
2		Acenaphthylene	20.000	18.715	6.4	97	0.00
3		1-Methyl Naphthalene	20.000	18.480	7.6	97	0.00
4		2-Methyl Naphthalene	20.000	18.341	8.3	94	0.00
5		Acenaphthene	20.000	19.850	0.7	98	0.00
6		Fluorene	20.000	18.089	9.6	94	0.00
7		Phenanthrene	20.000	17.781	11.1	94	0.00
8	S	O-Terphenyl	20.000	18.025	9.9	91	0.00
9		Anthracene	20.000	18.255	8.7	92	0.00
10		Fluoranthene	20.000	19.561	2.2	98	0.00
11		Pyrene	20.000	18.004	10.0	91	0.00
12	S	P-Terphenyl	20.000	18.566	7.2	98	0.01
13		Benzo(a)Anthracene	10.000	8.872	11.3	93	0.03
14		Chrysene	10.000	9.094	9.1	94	0.00
15		Benzo(b)Fluoranthene	10.000	8.829	11.7	92	0.00

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA659-CC629
Lab FileID: AA013883.D

16	Benzo(k)Fluoranthene	10.000	8.843	11.6	93	0.00
17	Benzo(a) Pyrene	10.000	10.474	-4.7	108	0.00
18	Dibenzo(a,h)anthracene	10.000	8.842	11.6	92	0.00
19	Benzo(g,h,i) Perylene	10.000	9.462	5.4	96	0.00
20	Indeno(1,2,3-cd)pyrene	10.000	8.766	12.3	93	0.00

Average % D = 8.7

(#) = Out of Range SPCC's out = 0 CCC's out = 0
AA013276.D 8310_32.M Thu Jan 16 10:12:49 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA659-ECC629
Lab FileID: AA013892.D

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\0115PAH\AA013892.D\DAD1B.CH Vial: 11
Signal #2 : F:\HPCHEM\1\DATA\0115PAH\AA013892.D\DAD1A.CH
Acq On : 15-Jan-2003, 22:11:38 Operator: SARAHM
Sample : ECC629-20 Inst : DAD
Misc : op6731,gaa659,1000,,,1,,WATER Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e

Method : C:\HPCHEM\1\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Thu Jan 16 10:10:49 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.278	8.6	95	-0.02
2		Acenaphthylene	20.000	18.668	6.7	99	-0.02
3		1-Methyl Naphthalene	20.000	18.739	6.3	97	-0.02
4		2-Methyl Naphthalene	20.000	18.985	5.1	95	-0.02
5		Acenaphthene	20.000	19.689	1.6	96	-0.01
6		Fluorene	20.000	18.136	9.3	94	-0.01
7		Phenanthrene	20.000	18.471	7.6	95	0.00
8	S	O-Terphenyl	20.000	18.270	8.7	93	0.00
9		Anthracene	20.000	18.912	5.4	97	0.00
10		Fluoranthene	20.000	18.054	9.7	94	0.00
11		Pyrene	20.000	17.834	10.8	93	0.00
12	S	P-Terphenyl	20.000	18.766	6.2	99	0.02
13		Benzo(a)Anthracene	10.000	8.936	10.6	94	0.04
14		Chrysene	10.000	8.837	11.6	93	0.02
15		Benzo(b)Fluoranthene	10.000	8.771	12.3	93	0.02
16		Benzo(k)Fluoranthene	10.000	9.038	9.6	93	0.02
17		Benzo(a) Pyrene	10.000	10.412	-4.1	108	0.02
18		Dibenzo(a,h)anthracene	10.000	8.991	10.1	94	0.02
19		Benzo(g,h,i) Perylene	10.000	9.712	2.9	97	0.02
20		Indeno(1,2,3-cd)pyrene	10.000	8.971	10.3	94	0.02

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.028	9.9	95	-0.02
2		Acenaphthylene	20.000	18.742	6.3	97	-0.02
3		1-Methyl Naphthalene	20.000	18.579	7.1	97	-0.02
4		2-Methyl Naphthalene	20.000	18.424	7.9	95	-0.02
5		Acenaphthene	20.000	19.992	0.0	98	-0.01
6		Fluorene	20.000	18.153	9.2	94	-0.01
7		Phenanthrene	20.000	17.824	10.9	94	0.00
8	S	O-Terphenyl	20.000	18.210	8.9	92	0.00
9		Anthracene	20.000	18.311	8.4	93	0.00
10		Fluoranthene	20.000	19.670	1.6	99	0.00
11		Pyrene	20.000	18.072	9.6	92	0.00
12	S	P-Terphenyl	20.000	18.609	7.0	98	0.02
13		Benzo(a)Anthracene	10.000	8.875	11.3	93	0.04
14		Chrysene	10.000	9.100	9.0	94	0.02
15		Benzo(b)Fluoranthene	10.000	8.832	11.7	93	0.02

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GAA659-ECC629
Lab FileID: AA013892.D

16	Benzo(k)Fluoranthene	10.000	8.826	11.7	93	0.02
17	Benzo(a) Pyrene	10.000	10.371	-3.7	107	0.02
18	Dibenzo(a,h)anthracene	10.000	8.908	10.9	93	0.02
19	Benzo(g,h,i) Perylene	10.000	9.488	5.1	96	0.02
20	Indeno(1,2,3-cd)pyrene	10.000	8.813	11.9	93	0.02

Average % D = 8.0

(#) = Out of Range SPCC's out = 0 CCC's out = 0
AA013276.D 8310_32.M Thu Jan 16 10:12:51 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE549-CC541
Lab FileID: EE012611.D

Evaluate Continuing Calibration Report

Signal #1 : E:\HPCHEM\1\DATA\0117PAH\EE012611.D\DAD1B.CH Vial: 11
Signal #2 : E:\HPCHEM\1\DATA\0117PAH\EE012611.D\DAD1A.CH
Acq On : 17-Jan-2003, 12:40:35 Operator: SARAHM
Sample : CC541-20 Inst : G1315A
Misc : op6758,gee549,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Tue Jan 07 13:07:18 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	19.143	4.3	101	-0.02
2		Acenaphthylene	20.000	19.540	2.3	101	-0.02
3		1-Methyl Naphthalene	20.000	19.332	3.3	102	-0.02
4		2-Methyl Naphthalene	20.000	19.345	3.3	102	-0.01
5		Acenaphthene	20.000	19.236	3.8	101	-0.01
6		Fluorene	20.000	19.268	3.7	101	-0.01
7		Phenanthrene	20.000	19.099	4.5	101	-0.01
8	S	O-Terphenyl	20.000	19.501	2.5	101	0.00
9		Anthracene	20.000	19.179	4.1	99	0.00
10		Fluoranthene	20.000	19.288	3.6	101	0.00
11		Pyrene	20.000	19.211	3.9	100	0.00
12	S	P-Terphenyl	20.000	19.181	4.1	101	0.00
13		Benzo(a)Anthracene	10.000	9.584	4.2	101	0.00
14		Chrysene	10.000	9.557	4.4	100	0.00
15		Benzo(b)Fluoranthene	10.000	9.534	4.7	101	0.02
16		Benzo(k)Fluoranthene	10.000	9.528	4.7	97	0.02
17		Benzo(a) Pyrene	10.000	9.759	2.4	101	0.02
18		Dibenzo(a,h)anthracene	10.000	9.533	4.7	96	0.03
19		Benzo(g,h,i) Perylene	10.000	9.546	4.5	98	0.02
20		Indeno(1,2,3-cd)pyrene	10.000	9.916	0.8	100	0.03

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.967	5.2	101	-0.02
2		Acenaphthylene	20.000	18.938	5.3	101	-0.02
3		1-Methyl Naphthalene	20.000	19.197	4.0	102	-0.01
4		2-Methyl Naphthalene	20.000	19.209	4.0	101	-0.01
5		Acenaphthene	20.000	19.935	0.3	101	-0.01
6		Fluorene	20.000	19.376	3.1	101	-0.01
7		Phenanthrene	20.000	18.929	5.4	101	-0.01
8	S	O-Terphenyl	20.000	19.653	1.7	101	0.00
9		Anthracene	20.000	19.603	2.0	99	0.00
10		Fluoranthene	20.000	20.099	-0.5	100	0.00
11		Pyrene	20.000	19.714	1.4	100	0.00
12	S	P-Terphenyl	20.000	19.239	3.8	101	0.00
13		Benzo(a)Anthracene	10.000	9.599	4.0	101	0.00
14		Chrysene	10.000	9.583	4.2	101	0.00
15		Benzo(b)Fluoranthene	10.000	9.623	3.8	101	0.02

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE549-CC541
Lab FileID: EE012611.D

16	Benzo(k)Fluoranthene	10.000	9.691	3.1	101	0.02
17	Benzo(a) Pyrene	10.000	9.710	2.9	101	0.02
18	Dibenzo(a,h)anthracene	10.000	9.696	3.0	101	0.03
19	Benzo(g,h,i) Perylene	10.000	9.692	3.1	100	0.02
20	Indeno(1,2,3-cd)pyrene	10.000	9.754	2.5	101	0.03

Average % D = 3.4

(#) = Out of Range SPCC's out = 0 CCC's out = 0
EE012442.D 8310_32.M Mon Jan 20 09:16:35 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE549-ECC541
Lab FileID: EE012621.D

Evaluate Continuing Calibration Report

Signal #1 : E:\HPCHEM\1\DATA\0117PAH\EE012621.D\DAD1B.CH Vial: 11
Signal #2 : E:\HPCHEM\1\DATA\0117PAH\EE012621.D\DAD1A.CH
Acq On : 17-Jan-2003, 16:42:13 Operator: SARAHM
Sample : ECC541-20 Inst : G1315A
Misc : op6758,gee549,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Tue Jan 07 13:07:18 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	19.215	3.9	101	-0.01
2		Acenaphthylene	20.000	19.625	1.9	102	0.00
3		1-Methyl Naphthalene	20.000	19.339	3.3	102	0.00
4		2-Methyl Naphthalene	20.000	19.381	3.1	102	0.00
5		Acenaphthene	20.000	19.336	3.3	101	0.00
6		Fluorene	20.000	19.365	3.2	101	0.00
7		Phenanthrene	20.000	19.198	4.0	101	0.00
8	S	O-Terphenyl	20.000	19.539	2.3	101	0.00
9		Anthracene	20.000	19.287	3.6	100	0.00
10		Fluoranthene	20.000	19.381	3.1	101	0.00
11		Pyrene	20.000	19.300	3.5	101	0.00
12	S	P-Terphenyl	20.000	19.248	3.8	101	0.00
13		Benzo(a)Anthracene	10.000	9.624	3.8	101	0.01
14		Chrysene	10.000	9.595	4.0	101	0.01
15		Benzo(b)Fluoranthene	10.000	9.723	2.8	103	0.02
16		Benzo(k)Fluoranthene	10.000	9.577	4.2	97	0.03
17		Benzo(a) Pyrene	10.000	9.860	1.4	102	0.03
18		Dibenzo(a,h)anthracene	10.000	10.025	-0.3	101	0.03
19		Benzo(g,h,i) Perylene	10.000	9.839	1.6	101	0.03
20		Indeno(1,2,3-cd)pyrene	10.000	9.914	0.9	100	0.04

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	19.054	4.7	102	0.00
2		Acenaphthylene	20.000	19.054	4.7	102	0.00
3		1-Methyl Naphthalene	20.000	19.226	3.9	102	0.00
4		2-Methyl Naphthalene	20.000	19.273	3.6	102	0.00
5		Acenaphthene	20.000	20.109	-0.5	102	0.00
6		Fluorene	20.000	19.469	2.7	102	0.00
7		Phenanthrene	20.000	19.034	4.8	101	0.00
8	S	O-Terphenyl	20.000	19.650	1.8	101	0.00
9		Anthracene	20.000	19.749	1.3	99	0.00
10		Fluoranthene	20.000	20.171	-0.9	101	0.00
11		Pyrene	20.000	19.795	1.0	101	0.00
12	S	P-Terphenyl	20.000	19.312	3.4	101	0.00
13		Benzo(a)Anthracene	10.000	9.638	3.6	101	0.01
14		Chrysene	10.000	9.624	3.8	101	0.01
15		Benzo(b)Fluoranthene	10.000	9.661	3.4	102	0.02

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE549-ECC541
Lab FileID: EE012621.D

16	Benzo(k)Fluoranthene	10.000	9.739	2.6	102	0.03
17	Benzo(a) Pyrene	10.000	9.830	1.7	103	0.03
18	Dibenzo(a,h)anthracene	10.000	9.750	2.5	101	0.03
19	Benzo(g,h,i) Perylene	10.000	9.745	2.6	101	0.03
20	Indeno(1,2,3-cd)pyrene	10.000	9.829	1.7	102	0.04

Average % D = 2.8

(#) = Out of Range SPCC's out = 0 CCC's out = 0
EE012442.D 8310_32.M Mon Jan 20 09:16:36 2003

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE549-CC541
Lab FileID: EE012604.D

Evaluate Continuing Calibration Report

Signal #1 : E:\HPCHEM\1\DATA\0117PAH\EE012604.D\DAD1B.CH Vial: 2
Signal #2 : E:\HPCHEM\1\DATA\0117PAH\EE012604.D\DAD1A.CH
Acq On : 17-Jan-2003, 09:51:27 Operator: SARAHM
Sample : CC541-10 Inst : G1315A
Misc : op6758,gee549,1000,,,1,,water Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Tue Jan 07 13:07:18 2003
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	Naphthalene	10.000	9.966	0.3	99	-0.02
2	Acenaphthylene	10.000	10.048	-0.5	99	-0.02
3	1-Methyl Naphthalene	10.000	10.015	-0.2	99	-0.02
4	2-Methyl Naphthalene	10.000	10.017	-0.2	99	-0.02
5	Acenaphthene	10.000	9.918	0.8	97	-0.02
6	Fluorene	10.000	9.936	0.6	98	-0.02
7	Phenanthrene	10.000	9.866	1.3	98	-0.01
8 S	O-Terphenyl	10.000	9.966	0.3	98	-0.01
9	Anthracene	10.000	9.629	3.7	96	0.00
10	Fluoranthene	10.000	9.864	1.4	98	0.00
11	Pyrene	10.000	9.911	0.9	98	0.00
12 S	P-Terphenyl	10.000	9.867	1.3	98	0.00
13	Benzo(a)Anthracene	5.000	4.962	0.8	98	0.00
14	Chrysene	5.000	5.008	-0.2	98	0.01
15	Benzo(b)Fluoranthene	5.000	4.919	1.6	98	0.02
16	Benzo(k)Fluoranthene	5.000	4.912	1.8	97	0.03
17	Benzo(a) Pyrene	5.000	5.039	-0.8	99	0.03
18	Dibenzo(a,h)anthracene	5.000	5.133	-2.7	98	0.05
19	Benzo(g,h,i) Perylene	5.000	5.017	-0.3	98	0.05
20	Indeno(1,2,3-cd)pyrene	5.000	5.103	-2.1	98	0.05

Signal #2

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	Naphthalene	10.000	9.876	1.2	99	-0.02
2	Acenaphthylene	10.000	9.766	2.3	98	-0.02
3	1-Methyl Naphthalene	10.000	9.887	1.1	99	-0.02
4	2-Methyl Naphthalene	10.000	9.919	0.8	98	-0.02
5	Acenaphthene	10.000	10.195	-2.0	98	-0.02
6	Fluorene	10.000	9.970	0.3	98	-0.02
7	Phenanthrene	10.000	9.867	1.3	98	-0.01
8 S	O-Terphenyl	10.000	10.091	-0.9	98	-0.01
9	Anthracene	10.000	10.165	-1.6	97	-0.01
10	Fluoranthene	10.000	10.235	-2.3	98	0.00
11	Pyrene	10.000	9.888	1.1	98	0.00
12 S	P-Terphenyl	10.000	9.742	2.6	98	0.00
13	Benzo(a)Anthracene	5.000	4.866	2.7	98	0.00
14	Chrysene	5.000	4.825	3.5	98	0.01
15	Benzo(b)Fluoranthene	5.000	4.986	0.3	98	0.02

Continuing Calibration Summary

Job Number: F16141
Account: TETRPAPT Tetra Tech, NUS
Project: NAS Cecil Field-CTO-248

Sample: GEE549-CC541
Lab FileID: EE012604.D

16	Benzo(k)Fluoranthene	5.000	5.007	-0.1	98	0.03
17	Benzo(a) Pyrene	5.000	5.029	-0.6	99	0.03
18	Dibenzo(a,h)anthracene	5.000	5.044	-0.9	98	0.05
19	Benzo(g,h,i) Perylene	5.000	4.976	0.5	98	0.05
20	Indeno(1,2,3-cd)pyrene	5.000	5.089	-1.8	99	0.05

Average % D = 1.2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
EE012441.D 8310_32.M Mon Jan 20 09:17:10 2003

TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER 0391 F16141

PAGE 1 OF 1

PROJECT NO: N4248	FACILITY: WASCF Building 46	PROJECT MANAGER: Paul Calligan	PHONE NUMBER: 813-806-0202	LABORATORY NAME AND CONTACT: Accutest Sue Bell
SAMPLERS (SIGNATURE): [signature]		FIELD OPERATIONS LEADER: Merv Dale	PHONE NUMBER: 904-636-6125	ADDRESS: 4405 Vineland Rd., C-15
		CARRIER/WAYBILL NUMBER		CITY, STATE: Orlando, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G G G

PRESERVATIVE USED: HCL None HNO3

TYPE OF ANALYSIS: * Select VOCs SW846, 8260B; PAHs SW846, 8310; TRPH FL-PRO

DATE YEAR 2003	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	*								COMMENTS
1/7	1050	CEF-46-GW-01	JOI	MS/MSD		GW	G	21	9	6	6						Cool to 4°C
1/7	1100	CEF-46-GW-02	JOI			GW	G	7	3	2	2						N4248-
1/7	0000	CEF-46-GW-DU02-01				GW	G	7	3	2	2						WR 105
																	* Report BTEX only.

1. RELINQUISHED BY [signature]	DATE 1/10/03	TIME 1300	1. RECEIVED BY [signature]	DATE 1/10/03	TIME 12:50
2. RELINQUISHED BY [signature]	DATE 1/10/03	TIME 15:10	2. RECEIVED BY [signature]	DATE 01/10/03	TIME 15:10
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: 2.4 3.0 2.6 2.0 2.4 2.8 3.0 2.2 20

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001