N60200.AR.004228
NAS CECIL FIELD, FL
5090.3a

SITE ASSESSMENT REPORT FOR OPERABLE UNIT 9 (OU 9) SITE 37 SOIL BASE REALIGNMENT AND CLOSURE NAS CECIL FIELD FL
7/1/2005
TETRA TECH NUS INC

Site Assessment Report
for
Site 37 Soil
Base Realignment and Closure

Naval Air Station Cecil Field
Jacksonville, Florida

Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888

Contract Task Order 0078

July 2005

050513/P

SITE ASSESSMENT REPORT
FOR
SITE 37 SOIL
BASE REALIGNMENT AND CLOSURE

NAVAL AIR STATION, CECIL FIELD
JACKSONVILLE, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT N62467-89-D-0088

Submitted to:
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29406

Submitted by:
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220

CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0078

JULY 2005

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NAVFAC

The professional opinions rendered in this decision document identified as Site Assessment Report for Site 37 Soil, Naval Air Station Cecil Field, Jacksonville, Florida were developed in accordance with commonly accepted procedures consistent with applicable standards of practice. Decision documents are based on information obtained from others and under the supervision of the signing engineer. If conditions are determined to exist differently than those described in this document, then the undersigned professional engineer should be notified to evaluate the effects of any additional information on the project described in this report.

Mark Speranza

Mark Speranza, P.E.
Professional Engineering No. PE0050304

Date: 7/12/05

Mark Speranza

CERTIFICATION OF TECHNICAL
DATA CONFORMITY

The Contractor, Tetra Tech NUS, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-94-D-0888 are complete and accurate and comply with all requirements of this contract.

DATE: July 11, 2005

COMPANY CERTIFICATION AUTHORIZATION NUMBER: 7988
Tetra Tech NUS, Inc.
661 Andersen Drive
Pittsburgh, PA 15220

NAME AND TITLE OF CERTIFYING OFFICIAL: Mark Speranza, P.E.
Task Order Manager

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ACRONYMS

BCT	BRAC Cleanup Team
BRAC	Base Realignment and Closure
bgs	Below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CH2MHill	CH2MHill Constructors, Inc.
CLEAN	Comprehensive Long-Term Environmental Action Navy
CTO	Contract Task Order
DCE	Dichloroethene
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
NAS	Naval Air Station
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated biphenyl
RAC	Remedial Action Contractor
RI	Remedial Investigation
SAR	Site Assessment Report
SCTL	Soil Target Cleanup Level
SVOC	Semivolatile organic compound
TAL	Target Analyte List
TMB	Trimethylbenzene
TRPH	Total Recoverable Petroleum Hydrocarbons
TtNUS	Tetra Tech NUS, Inc.
VOC	Volatile organic compound

EXECUTIVE SUMMARY

This Site Assessment Report (SAR) for the Site 37 Soil at Naval Air Station (NAS) Cecil Field in Jacksonville, Florida summarizes the previous investigations and remedial actions, related field operations, results, conclusions, and recommendations for the soil at Site 37.

Site 37 is a located along the east-west flightline. Groundwater contamination exists in the vicinity of the Hangars 13 and 14. A Remedial Investigation (RI) performed at Site 37 (along with Site 36) in 1998 and 1999 identified an unpaved area to the south of Hangar 14 was found to be contaminated with petroleum-related compounds. The contaminated soil extended 6 feet to the groundwater table. In 1999, the Base Realignment and Closure (BRAC) Cleanup Team (BCT) agreed that remediation of the contaminated soil could be dealt with under the Florida Department of Environmental Protection (FDEP) Petroleum Program.

From July through September 2001, the soil was excavated. Eight confirmation soil samples were collected from the side walls of the excavation. Three of the eight confirmation samples had concentrations of more than one petroleum-based contaminant greater than the lesser of the industrial or leachability FDEP Soil Target Cleanup Levels (SCTLs).

In November 2001, the air sparging system at the nearby Site 37 groundwater plume was evaluated and determined to be close enough to the Site 37 contaminated soil that contaminant concentrations might be reduced by associated aerobic activity stimulated by the injection of air into the subsurface. Soil samples were collected in November 2003 and November 2004. In the November 2003 samples, contaminants were detected at concentrations greater than leachability SCTLs in one location. In the other two samples, concentrations of contaminants were less than detections limits and less than SCTLs. In the November 2004 samples, concentrations of contaminants were less than detections limits and less than SCTLs.

Contaminated soil has been removed. A soil removal action was conducted to remove contaminated soil and subsequent treatment to promote aerobic degradation of residual contamination was performed. The analytical results of the soil samples now show that contaminant concentrations are less than FDEP SCTLs for residential exposure and leachability. Therefore, the soil removal and subsequent treatment by air sparging was successful, and no further action for the soil is recommended. Groundwater contamination in the area will continue to be addressed by the Sites 36 and 37 groundwater remediation system.

1.0 INTRODUCTION

This Site Assessment Report (SAR) for the Site 37 Soil at Naval Air Station (NAS) Cecil Field in Jacksonville, Florida has been prepared by Tetra Tech NUS, Inc. (TtNUS) for the Southern Division, Naval Facilities Engineering Field Division South. This project was conducted under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, Contract Number N62467-94-D-0888, Contract Task Order (CTO) 0078. This report summarizes the previous investigations and remedial actions, related field operations, results, conclusions, and recommendations for the soil at Site 37.

Site 37 [Hangars 13 and 14 Dichloroethene (DCE) Plume] is a located along the east-west flightline (See Figure 1-1). Groundwater contamination exists in the vicinity of the Hangars 13 and 14 on the northern side of the flightline. A Remedial Investigation (RI) was performed at Site 37 (along with Site 36) in 1998 and 1999 (TtNUS, 1999). During the RI, an unpaved area (95 feet by 90 feet) to the south of Hangar 14 was found to be contaminated with petroleum-related compounds. The contaminated soil extended to the groundwater table, about 6 feet below ground surface (bgs).

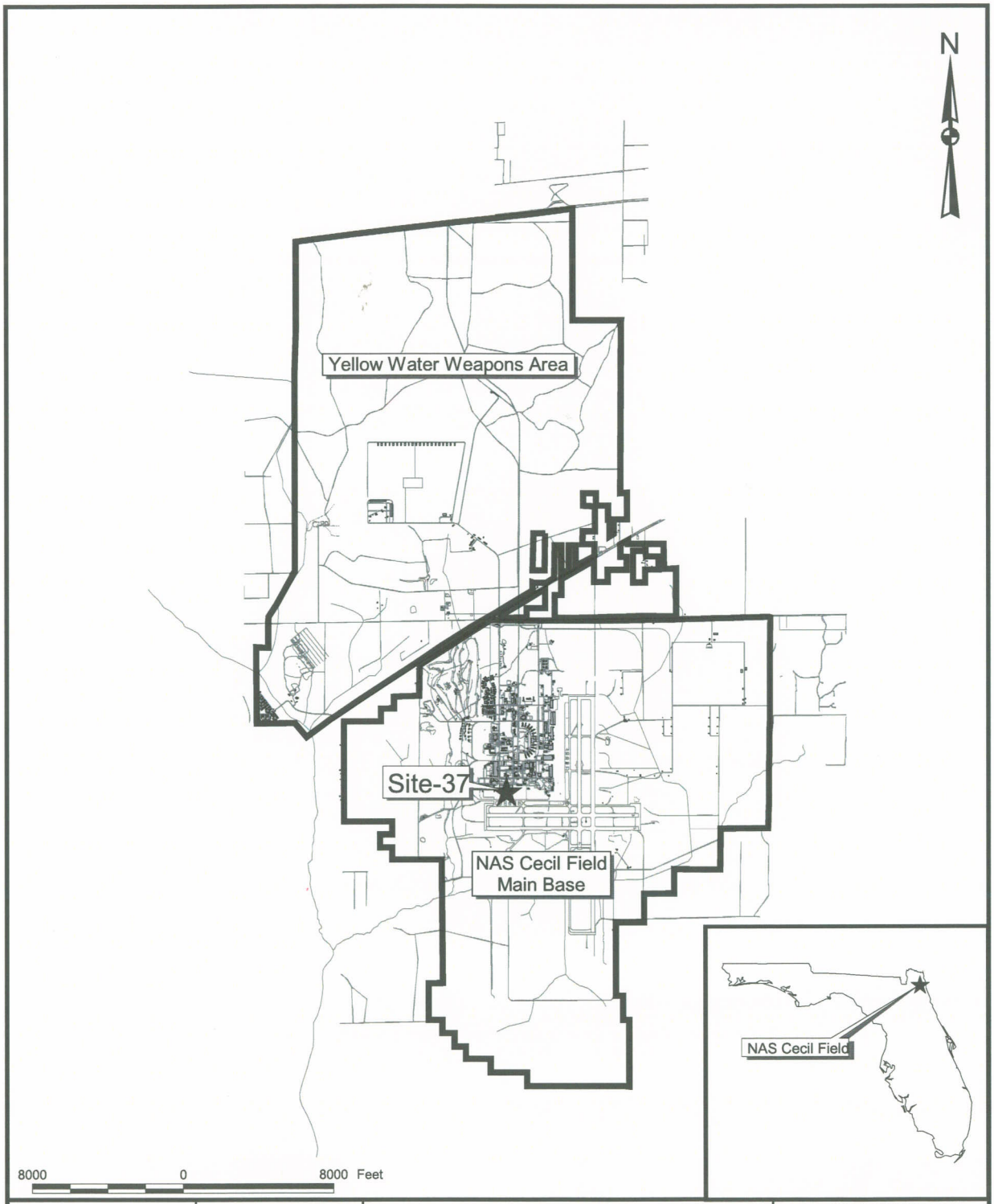
In 1999, the Base Realignment and Closure (BRAC) Cleanup Team (BCT) agreed that remediation of the contaminated soil could be dealt with under the Florida Department of Environmental Protection (FDEP) Petroleum Program, while the groundwater contamination would continue to be addressed through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Program usually referred to as the IR Program (BCT, 1999). A Dig and Haul Package was prepared in 2000 for the excavation and off-site disposal of the contaminated soil (TtNUS, 2000).

From July through September 2001, CH2MHill Constructors, Inc. (CH2MHill), the Navy's Remedial Action Contractor (RAC), performed the removal action. A total of 2,344 tons of contaminated soil were excavated and disposed at the Broadhurst Landfill in Jessup, Georgia. After excavation was completed, eight confirmation soil samples were collected from the side walls of the excavation, from unsaturated soil near the base of the excavation, about 5 feet bgs. The samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), Target Analyte List (TAL) metals, polychlorinated biphenyls (PCBs), and total recoverable petroleum hydrocarbons (TRPH) (CH2MHill, 2002). Following samples collection, the excavation was backfilled with clean fill.

Three samples of the eight confirmation samples had concentrations of more than one petroleum-based contaminant greater than the lesser of the industrial or leachability FDEP Soil Target Cleanup Levels (SCTLs). (For all constituents that were detected, the leachability SCTL was the lowest value.) Contaminants detected in one more of the three samples included benzene, ethylbenzene, xylenes, isopropylbenzene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, naphthalene, 1-methylnaphthalene,

benzo(a)pyrene, and TRPH. The three samples were located on the eastern and southern walls. (See Figure 2-1 in Section 2 for sample locations.) However, additional soil could not be excavated to address these exceedances because the adjacent flightline concrete would be undercut.

In November 2001, the air sparging system to address the nearby Site 37 groundwater plume was evaluated and determined to be close enough to the Site 37 contaminated soil that contaminant concentrations might be reduced by associated aerobic activity stimulated by the injection of air into the subsurface. An additional air sparging well was added to the design to provide better coverage in the area of the contaminated soil (BCT, 2001). The BCT agreed that the soil would be sampled and analyzed annually to monitor the progress of the soil remediation. In June 2002, the air sparging system was started. Soil samples were collected in November 2003 and November 2004. The sampling events and analytical results are discussed in the following sections.



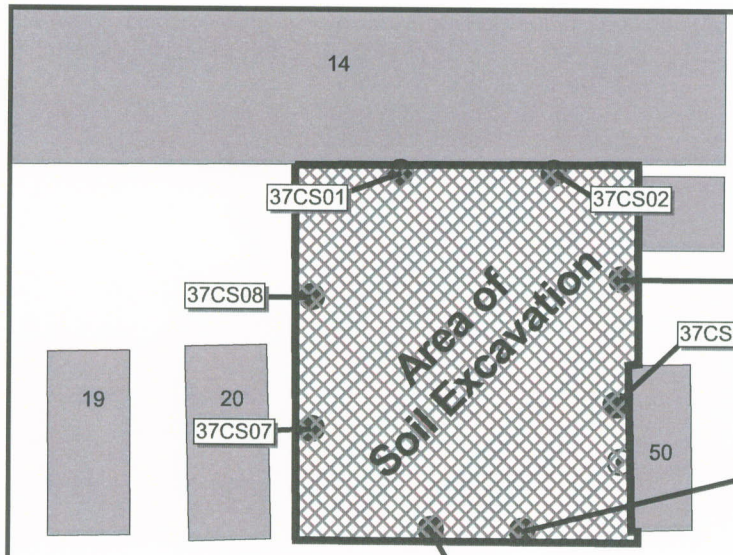
DRAWN BY MJJ	DATE 09May05	SITE LOCATION MAP SITE 37 SOIL NAS CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0039
CHECKED BY	DATE		APPROVED BY 7/7/05 DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED	NAVFAC		DRAWING NO. FIGURE 1-1 REV 0

P:\GIS\NAS_CecilField\Site-3637_LTM-200411.apr 09May05 MJJ 99-Layout01

2.0 FIELD INVESTIGATION

Soil samples were collected at Site 37 in November 2003 and November 2004 to monitor the progress of degradation of organic compounds detected at concentrations greater than the leachability SCTLs in confirmatory samples during the soil removal action. Based on the results of the confirmatory samples, the three soil samples (confirmatory sample locations 37-CS-03, 37-CS-05, and 37-CS-06) collected in November 2003 were analyzed for benzene, ethylbenzene, xylenes, isopropylbenzene, TMBs, naphthalene, 1-methylnaphthalene, benzo(a)pyrene, and TRPH. Then based on the results of the November 2003 samples, only one sample at location CS-03 was collected in November 2004 and analyzed for 1,2,4-TMB, xylenes, and TRPH because only these constituents exceeded leachability criteria. All samples were collected from a depth of 4.5 to 5 feet bgs using a hand auger.

Sample locations and results are shown on Figure 2-1. The analytical results are discussed in Section 3.0, and the laboratory results are included in Appendix A.



37CS03	08/01	11/03	11/04	
1,2,4-TRIMETHYLBENZENE	17000*	323 J*	1.8 U	[13000/88000/300]
1,3,5-TRIMETHYLBENZENE	3100*	35.4	NA	[11000/74000/300]
1-METHYLNAPHTHALENE	8080*	343 J	NA	[68000/470000/2200]
BENZENE	13*	2.6 U	NA	[1100/1600/7]
ETHYLBENZENE	2900*	165	NA	[1100000/8400000/600]
ISOPROPYLBENZENE	5500*	173	NA	[160000/1100000/200]
M+P-XYLENES	420*	157*	9.1 U	[5900/40000/0.2]
NAPHTHALENE	2100*	91 U	NA	[40000/270000/1700]
TRPH	1800*	490*	66	[340/2500/340]

37CS05	08/01	11/03	
1,2,4-TRIMETHYLBENZENE	140000*	2.8 U	[13000/88000/300]
1,3,5-TRIMETHYLBENZENE	67000*	2.8 U	[11000/74000/300]
1-METHYLNAPHTHALENE	2790*	91 U	[68000/470000/2200]
BENZENE	1800 J*	2.8 U	[1100/1600/7]
BENZO(A)PYRENE	230*	18 U	[100/500/8000]
ETHYLBENZENE	57000*	2.8 U	[1100000/8400000/600]
ISOPROPYLBENZENE	140000*	2.8 U	[160000/1100000/200]
M+P-XYLENES	68000*	3.5 U	[5900/40000/0.2]
NAPHTHALENE	16000*	91 U	[40000/270000/1700]
TRPH	2300*	99	[340/2500/340]

37CS06	08/01	11/03	
1,2,4-TRIMETHYLBENZENE	2800*	2.6 U	[13000/88000/300]
BENZENE	11*	2.6 U	[1100/1600/7]
M+P-XYLENES	240*	3.3 U	[5900/40000/0.2]

N

LEGEND

● Confirmatory Soil Sample Location

⊙ Air Sparge Well Location

37CS06 08/01 11/03
BENZENE 11* 2.6 U [1100/1600/7]

- Sample ID
- Sample Date
- Soil Cleanup Target Level (SCTLs)
  [1100/1600/7] - Residential/Industrial/Leachability
- Detected Concentration
  All results are in ug/kg, except TRPH which is mg/kg
  * indicates SCTL exceedance
  J - Estimated concentration
  U - Not detected at or above method detection limit (associated value)
- Parameter

Notes: 1) 08/01 sampling and analysis by RAC.
2) 11/03 and 11/04 sampling and analysis by TtNUS.
3) Sample location numbers follow convention used by RAC during Removal Action.

50 0 50 Feet

DRAWN BY	DATE
MJJ	09May05
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	

NAVFAC

SOIL SAMPLE LOCATIONS AND RESULTS
SITE 37 SOIL
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0039

APPROVED BY DATE 7/7/05

APPROVED BY DATE

DRAWING NO. FIGURE 2-1

REV 0

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3.0 ANALYTICAL RESULTS

In the November 2003 sampling event, 1,2,4-TMB, xylenes, and TRPH were detected at concentrations greater than leachability SCTLs in CEF-SU-CS-3-4.5, which was collected at location 37-CS-03. Ethylbenzene, isopropylbenzene, 1,3,5-TMB, 1-methylnaphthalene were also detected but at concentrations less than the leachability SCTLs. In the other two samples (CEF-37-SU-CS-5-4.5 which was collected at location 37-CS-05 and CEF-37-SU-CS-6-4.5 which was collected at location 37-CS-06), concentrations of VOCs and polynuclear aromatic hydrocarbons (PAHs) were less than detections limits, and TRPH concentrations were less than the leachability SCTL.

In the November 2004 sampling event, concentrations of 1,2,4-TMB and xylenes were less than detection limits in CEF-SU-CS-3-5 which was collected at location 37-CS-03, and the TRPH concentration was less than the leachability SCTL.

These results are shown on Table 3-1. The results are also shown on Figure 2-1. Laboratory data sheets are provided in Appendix A.

TABLE 3-1

SUMMARY OF POSITIVE DETECTIONS IN SOIL
SITE 37 SOIL SITE ASSESSMENT REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP SCTL[1]			37-CS-03			37-CS-05		37-CS-06	
	Residential Direct Exposure	Industrial Direct Exposure	Leachability to Groundwater	Aug-01	Nov-03	Nov-04	Aug-01	Nov-03	Aug-01	Nov-03
Volatile Organic Compounds, ug/kg										
1,2,4-TRIMETHYLBENZENE	1,300	88,000	300	**17000**	**323 J**	1.8 U	**140000**	2.8 U	**2800**	2.6 U
1,3,5-TRIMETHYLBENZENE	11,000	74,000	300	**3100**	**35.4**	NA	**67000**	2.8 U	**150**	2.6 U
BENZENE	1,100	1,600	7	**13**	2.6 U	NA	**1800 J**	2.8 U	**11**	2.6 U
ETHYLBENZENE	1,100,000	8,400,000	600	**2900**	**165**	NA	**57000**	2.8 U	**80**	2.6 U
ISOPROPYLBENZENE	160,000	1,100,000	200	**5500**	**173**	NA	**140000**	2.8 U	**160**	2.6 U
XYLENES	5,900,000	40,000,000	200	**420**	**157**	9.1 U	**68000**	3.5 U	**240**	3.3 U
Semivolatile Organic Compounds, ug/kg										
1-METHYLNAPHTHALENE	68,000	470,000	2,200	**8080**	**343 J**	NA	**2790**	91 U	2.88 U	85 U
BENZO(A)PYRENE	100	500	8,000	**66**	18 U	NA	**230**	18 U	2.9 U	17 U
NAPHTHALENE	40,000	270,000	1,700	**2100**	91 U	NA	**16000**	91 U	**5.6 J**	85 U
Total Petroleum Hydrocarbons, mg/kg										
TRPH	340	2,500	340	**1800**	**490**	**66**	**2300**	**99**	**20**	**48.2**

U = Not detected at or above detection limit (associated value).
J = Estimated concentration.
NA = Not analyzed.

Bolded values exceed detection limit.
Shaded values exceed less stringent of residential and leachability criteria.

1 Florida Department of Environmental Protection Soil Cleanup Target Levels, FAC Chapter 62-777 (FDEP, 1999).

4.0 CONCLUSIONS AND RECOMMENDATIONS

Contaminated soil has been removed. A soil removal action was conducted to remove contaminated soil and subsequent treatment to promote aerobic degradation of residual contamination was performed. The analytical results of the soil samples now show that contaminant concentrations are less than FDEP SCTLs for residential exposure and leachability. Therefore, the soil removal and subsequent treatment by air sparging was successful, and no further action for the soil is recommended. Groundwater contamination in the area will continue to be addressed by the Sites 36 and 37 groundwater remediation system.

REFERENCES

BCT (Base Realignment and Closure Cleanup Team), 1999. BCT Meeting Minutes, Number 1013. October.

BCT, 2001. BCT Meeting Minutes, Number 1595. November.

CH2MHill (CH2MHill Constructors, Inc.), 2002. Source Removal Report for the Excavation of Petroleum Contaminated Soil at Site 37, Hangar 14. Naval Air Station Cecil Field, Jacksonville, Florida. February.

FDEP (Florida Department of Environmental Protection), 1999. Contaminant Target Levels Rule, Soil, Groundwater and Surface Water Target Cleanup Levels. FAC Chapter 62-777, August.

TtNUS (Tetra Tech NUS, Inc.), 1999. Remedial Investigation Report for Site 36 – Control Tower TCE Plume and Site 37 – Hangars 13 and 14 DCE Plume, Revision 1. Naval Air Station Cecil Field, Jacksonville, Florida, August.

TtNUS, 2000. Dig and Haul Package for Site 37 – Contaminated Soil. Naval Air Station Cecil Field, Jacksonville, Florida, November.

APPENDIX A

LABORATORY ANALYTICAL REPORTS

APPENDIX A

The data and data validation reports will be provided in electronic form in the final pdf only. The SDG numbers of the laboratory reports are listed below.

Event	Laboratory	SDG numbers
November 2003	Accutest	F20493
November 2004	Accutest	F28239

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**FEBRUARY 24, 2004**
FROM:	**SETH C. STAFFEN**	**CC:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION – VOA / PAH / TPH** **CTO 282 – NAS CECIL FIELD** **SDG: F20493**		
SAMPLES:	3/Solid		

CEF-037-SU-CS-3-4.5 CEF-037-SU-CS-5-4.5
CEF-037-SU-CS-6-4.5

OVERVIEW

The sample set for CTO 282, SDG: F20493, Naval Air Station (NAS) Cecil Field; Florida consists of three (3) solid environmental samples. All samples were analyzed for select volatile organic compounds, select polynuclear aromatic hydrocarbons, and total petroleum hydrocarbons. No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech, NUS on November 6th, 2003 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 Methods 8260B, 8310, and RSK SOP–147/175 analytical and reporting protocols. The data in this SDG was validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
• Initial/continuing calibrations
* • Laboratory method blank results
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

The text of this report is formulated to address only gross noncompliances resulting in the rejection of data and the elimination of false positives.

VOA FRACTION

The surrogate recoveries of toluene-d8 and 4-bromofluorobenzene exceeded the upper quality control limits for sample CEF-037-SU-CS-3-4.5. The re-analysis of the sample yielded a recovery for toluene-d8 that exceeded the upper quality control limit. The original analysis was used for data validation purposes.

The linear calibration range of the instrument was exceeded by 1,2,4-trimethylbenzene for sample CEF-037-SU-CS-3-4.5. The result was qualified as estimated, J.

PAH FRACTION

The PAH compound list should have comprised of naphthalene, 1-methylnaphthalene, and benzo(a)pyrene only. However, the laboratory reported a complete list of PAHs. The other PAHs were removed from the EDD.

TPH FRACTION

The continuing calibrations on 11/13/03 at 1615 and 1943 contained %Ds that exceeded the 15% quality control limit for total petroleum hydrocarbons. No qualification action was taken because the exceedances were less than 90%.

Sample CEF-037-SU-CS-3-4.5 was analyzed at a 10X dilution.

Sample CEF-037-SU-CS-5-4.5 was analyzed at a 4X dilution.

Sample CEF-037-SU-CS-6-4.5 was analyzed at a 2X dilution.

ADDITIONAL COMMENTS

The laboratory reported down to the method detection limit (MDL). Positive results reported between the MDL and reporting limit (RL) were qualified as estimated, J.

EXECUTIVE SUMMARY

Laboratory performance: Continuing calibration %D criteria were not met for acenaphthene and TPH.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the NFESC guidelines "Navy IRCDQM" (September 1999). The text of this 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)."

Seth C. Staffen

Environmental Scientist/Data Validator
Tetra Tech, NUS

Joseph A. Samchuck

Data Validation Quality Assurance Officer
Tetra Tech, NUS

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 8442

SDG: F20493 MEDIA: SOIL DATA FRACTION: OV

nsample	CEF-037-SU-CS-3-4.5	nsample	CEF-037-SU-CS-5-4.5	nsample	CEF-037-SU-CS-6-4.5
samp_date	11/6/2003	samp_date	11/6/2003	samp_date	11/6/2003
lab_id	F20493-1	lab_id	F20493-2	lab_id	F20493-3
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	88.5	Pct_Solids	91.7	Pct_Solids	94.7
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRIMETHYLBENZENE	323	J	L
1,3,5-TRIMETHYLBENZENE	35.4		
BENZENE	2.6	U	
ETHYLBENZENE	165		
ISOPROPYLBENZENE	173		
M+P-XYLENES	157		

Parameter	Result	Val Qual	Qual Code
1,2,4-TRIMETHYLBENZENE	2.8	U	
1,3,5-TRIMETHYLBENZENE	2.8	U	
BENZENE	2.8	U	
ETHYLBENZENE	2.8	U	
ISOPROPYLBENZENE	2.8	U	
M+P-XYLENES	3.5	U	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRIMETHYLBENZENE	2.6	U	
1,3,5-TRIMETHYLBENZENE	2.6	U	
BENZENE	2.6	U	
ETHYLBENZENE	2.6	U	
ISOPROPYLBENZENE	2.6	U	
M+P-XYLENES	3.3	U	

PROJ_NO: 8442

SDG: F20493 MEDIA: SOIL DATA FRACTION: PAH

nsample	CEF-037-SU-CS-3-4.5	nsample	CEF-037-SU-CS-5-4.5	nsample	CEF-037-SU-CS-6-4.5
samp_date	11/6/2003	samp_date	11/6/2003	samp_date	11/6/2003
lab_id	F20493-1	lab_id	F20493-2	lab_id	F20493-3
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	88.5	Pct_Solids	91.7	Pct_Solids	94.7
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	343	J	P
BENZO(A)PYRENE	18	U	
NAPHTHALENE	91	U	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	91	U	
BENZO(A)PYRENE	18	U	
NAPHTHALENE	91	U	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	85	U	
BENZO(A)PYRENE	17	U	
NAPHTHALENE	85	U	

PROJ_NO: 8442

SDG: F20493 MEDIA: SOIL DATA FRACTION: PET

nsample	CEF-037-SU-CS-3-4.5	nsample	CEF-037-SU-CS-5-4.5	nsample	CEF-037-SU-CS-6-4.5
samp_date	11/6/2003	samp_date	11/6/2003	samp_date	11/6/2003
lab_id	F20493-1	lab_id	F20493-2	lab_id	F20493-3
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	88.5	Pct_Solids	91.7	Pct_Solids	94.7
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	490		

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	99		

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	48.2		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-037-SU-CS-3-4.5		
Lab Sample ID:	F20493-1	**Date Sampled:**	11/06/03
Matrix:	SO - Soil	**Date Received:**	11/07/03
Method:	SW846 8260B	**Percent Solids:**	88.5
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K015109.D	1	11/18/03	NAF	n/a	n/a	VK650
Run #2 [a]	K015134.D	1	11/19/03	NAF	n/a	n/a	VK651

	Initial Weight
Run #1	4.37 g
Run #2	4.98 g

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	6.5	2.6	ug/kg	
100-41-4	Ethylbenzene	165	6.5	2.6	ug/kg	
	m,p-Xylene	157	13	3.2	ug/kg	
98-82-8	Isopropylbenzene	173	6.5	2.6	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	323	6.5	2.6	ug/kg	E
108-67-8	1,3,5-Trimethylbenzene	35.4	6.5	2.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	99%	78-123%
2037-26-5	Toluene-D8	180% [b]	152%	71-137%
460-00-4	4-Bromofluorobenzene	112%	317%	61-157%
17060-07-0	1,2-Dichloroethane-D4	103%	100%	74-125%

(a) Sample introduction performed using method 5030A.
(b) Outside control limits due to matrix interference. Confirmed by reanalysis.

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-037-SU-CS-5-4.5		
Lab Sample ID:	F20493-2	**Date Sampled:**	11/06/03
Matrix:	SO - Soil	**Date Received:**	11/07/03
Method:	SW846 8260B	**Percent Solids:**	91.7
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K015092.D	1	11/17/03	NAF	n/a	n/a	VK649
Run #2							

	Initial Weight
Run #1	3.88 g
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	7.0	2.8	ug/kg	
100-41-4	Ethylbenzene	ND	7.0	2.8	ug/kg	
	m,p-Xylene	ND	14	3.5	ug/kg	
98-82-8	Isopropylbenzene	ND	7.0	2.8	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	7.0	2.8	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	7.0	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		78-123%
2037-26-5	Toluene-D8	99%		71-137%
460-00-4	4-Bromofluorobenzene	114%		61-157%
17060-07-0	1,2-Dichloroethane-D4	104%		74-125%

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-037-SU-CS-6-4.5		
Lab Sample ID:	F20493-3	**Date Sampled:**	11/06/03
Matrix:	SO - Soil	**Date Received:**	11/07/03
Method:	SW846 8260B	**Percent Solids:**	94.7
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K015093.D	1	11/17/03	NAF	n/a	n/a	VK649
Run #2							

	Initial Weight
Run #1	4.04 g
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	6.5	2.6	ug/kg	
100-41-4	Ethylbenzene	ND	6.5	2.6	ug/kg	
	m,p-Xylene	ND	13	3.3	ug/kg	
98-82-8	Isopropylbenzene	ND	6.5	2.6	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	6.5	2.6	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	6.5	2.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		78-123%
2037-26-5	Toluene-D8	99%		71-137%
460-00-4	4-Bromofluorobenzene	111%		61-157%
17060-07-0	1,2-Dichloroethane-D4	105%		74-125%

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-037-SU-CS-3-4.5		
Lab Sample ID:	F20493-1	**Date Sampled:**	11/06/03
Matrix:	SO - Soil	**Date Received:**	11/07/03
Method:	EPA 8310 SW846 3550B	**Percent Solids:**	88.5
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	AA018562.D	1	11/21/03	MRE	11/19/03	OP9110	GAA887
Run #2							

	Initial Weight	Final Volume
Run #1	31.0 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	730	180	ug/kg	
208-96-8	Acenaphthylene	ND	730	180	ug/kg	
120-12-7	Anthracene	ND	360	180	ug/kg	
56-55-3	Benzo(a)anthracene	ND	360	91	ug/kg	
50-32-8	Benzo(a)pyrene	ND	73	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	73	18	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	73	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	73	18	ug/kg	
218-01-9	Chrysene	ND	360	91	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	73	18	ug/kg	
206-44-0	Fluoranthene	ND	360	91	ug/kg	
86-73-7	Fluorene	ND	360	180	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	73	18	ug/kg	
91-20-3	Naphthalene	ND	360	91	ug/kg	
90-12-0	1-Methylnaphthalene	343	360	91	ug/kg	J
91-57-6	2-Methylnaphthalene	471	360	91	ug/kg	
85-01-8	Phenanthrene	ND	360	180	ug/kg	
129-00-0	Pyrene	ND	360	91	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	106%		38-139%
92-94-4	p-Terphenyl	97%		46-149%

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

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-037-SU-CS-5-4.5		
Lab Sample ID:	F20493-2	**Date Sampled:**	11/06/03
Matrix:	SO - Soil	**Date Received:**	11/07/03
Method:	EPA 8310 SW846 3550B	**Percent Solids:**	91.7
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA018563.D	1	11/21/03	MRE	11/19/03	OP9110	GAA887
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	720	180	ug/kg	
208-96-8	Acenaphthylene	ND	720	180	ug/kg	
120-12-7	Anthracene	ND	360	180	ug/kg	
56-55-3	Benzo(a)anthracene	ND	360	91	ug/kg	
50-32-8	Benzo(a)pyrene	ND	72	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	72	18	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	72	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	72	18	ug/kg	
218-01-9	Chrysene	ND	360	91	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	72	18	ug/kg	
206-44-0	Fluoranthene	ND	360	91	ug/kg	
86-73-7	Fluorene	ND	360	180	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	72	18	ug/kg	
91-20-3	Naphthalene	ND	360	91	ug/kg	
90-12-0	1-Methylnaphthalene	ND	360	91	ug/kg	
91-57-6	2-Methylnaphthalene	ND	360	91	ug/kg	
85-01-8	Phenanthrene	ND	360	180	ug/kg	
129-00-0	Pyrene	ND	360	91	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	96%		38-139%
92-94-4	p-Terphenyl	95%		46-149%

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-037-SU-CS-6-4.5		
Lab Sample ID:	F20493-3	**Date Sampled:**	11/06/03
Matrix:	SO - Soil	**Date Received:**	11/07/03
Method:	EPA 8310 SW846 3550B	**Percent Solids:**	94.7
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA018590.D	1	11/23/03	MRE	11/19/03	OP9110	GAA888
Run #2							

	Initial Weight	Final Volume
Run #1	31.0 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	680	170	ug/kg	
208-96-8	Acenaphthylene	ND	680	170	ug/kg	
120-12-7	Anthracene	ND	340	170	ug/kg	
56-55-3	Benzo(a)anthracene	ND	340	85	ug/kg	
50-32-8	Benzo(a)pyrene	ND	68	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	68	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	68	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	68	17	ug/kg	
218-01-9	Chrysene	ND	340	85	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	68	17	ug/kg	
206-44-0	Fluoranthene	ND	340	85	ug/kg	
86-73-7	Fluorene	ND	340	170	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	68	17	ug/kg	
91-20-3	Naphthalene	ND	340	85	ug/kg	
90-12-0	1-Methylnaphthalene	ND	340	85	ug/kg	
91-57-6	2-Methylnaphthalene	ND	340	85	ug/kg	
85-01-8	Phenanthrene	ND	340	170	ug/kg	
129-00-0	Pyrene	ND	340	85	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	95%		38-139%
92-94-4	p-Terphenyl	94%		46-149%

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-037-SU-CS-3-4.5		
Lab Sample ID:	F20493-1	**Date Sampled:**	11/06/03
Matrix:	SO - Soil	**Date Received:**	11/07/03
Method:	FLORIDA-PRO SW846 3550B	**Percent Solids:**	88.5
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP33211.D	10	11/13/03	SM	11/12/03	OP9061	GOP1108
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	490	94	64	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	97%		59-121%

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-037-SU-CS-5-4.5		
Lab Sample ID:	F20493-2	**Date Sampled:**	11/06/03
Matrix:	SO - Soil	**Date Received:**	11/07/03
Method:	FLORIDA-PRO SW846 3550B	**Percent Solids:**	91.7
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP33212.D	4	11/13/03	SM	11/12/03	OP9061	GOP1108
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	99.0	36	25	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		59-121%

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-037-SU-CS-6-4.5		
Lab Sample ID:	F20493-3	**Date Sampled:**	11/06/03
Matrix:	SO - Soil	**Date Received:**	11/07/03
Method:	FLORIDA-PRO SW846 3550B	**Percent Solids:**	94.7
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP33213.D	2	11/13/03	SM	11/12/03	OP9061	GOP1108
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	48.2	17	12	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		59-121%

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

APPENDIX C

SUPPORT DOCUMENTATION

Southeast
ACCUTEST.
Laboratories

12/01/03

Technical Report for

Tetra Tech, NUS

Cecil Field-Site 36/37

N8442-CTO#282 N3965-WR395SS

Accutest Job Number: F20493

Report to:

Tetra Tech NUS, Inc.
Foster Plaza 7
661 Andersen Drive
Pittsburgh, PA 15220

ATTN: Amy Thomson

Total number of pages in report: 427

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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Accutest Laboratories Southeast, Inc.
Analytical Narrative

Client:	Tetra Tech, NUS
Site:	Cecil Field, Site 36/37
Report Date:	November 25, 2003
Job Number:	F20493

3 samples were collected on November 06, 2003 and received on November 07, 2003.
Samples were properly cooled, preserved and intact. A listing of the Laboratory Sample ID, Client Sample ID, and dates of collection are presented in the Results Summary section of this report.
All method specified holding times, calibrations and quality control performance criteria were met, with the following notes.

VOCs, SW846 8260B:

- Sample CEF-037-SU-CS-3-4.5 (F20493-1) has a surrogate above acceptance limits due to matrix interference, which was confirmed by reanalysis. This sample also has a compound flagged with an "E" indicating its value exceeded the calibration curve. This result was from the water sample vial. When the methanol vial for the sample was analyzed the compound was below the calibration curve. Data has been footnoted accordingly.
- The MS/MSD associated with analytical batch VK650 had various recoveries below acceptance limits. The associated Blank Spike was within acceptance limits. Data not adversely affected.

Accutest Laboratories Southeast, Inc. certifies that this report meets the project requirements for analytical data produced for the samples as received at the Accutest Laboratories Southeast location as stated in the Analytical Task Order and the COC. In addition, Accutest Laboratories Southeast, Inc. certifies that data as reported meet the Data Quality Objectives for precision, accuracy and completeness as specified in the Accutest Laboratories Southeast, Inc. Quality Manual for other that conditions detailed above. ALSE routinely reports Organic target analytes down to 1/2 the Reporting Level. These positive results are flagged with a "J" qualifier. It is recommended by Accutest Laboratories Southeast, Inc. that this report is to be used in its entirety. Accutest Laboratories Southeast, Inc. is not responsible for any assumptions of data quality if partial data packages are used to interpret data. The Accutest Laboratories Southeast, Inc. Laboratory Director as verified by the signature on the front page has authorized release of this report.

Narrative prepared by:

Sue O. Bell, Project Manager (signature on file)

Date: November 25, 2003

00006

TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER 2366

PAGE 1 OF 1

PROJECT NO: N8442, CTO 282	FACILITY: SITE 37, NASCF	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916	LABORATORY NAME AND CONTACT: ACCUTEST Sue Bell
SAMPLERS (SIGNATURE): M.W. Dale		FIELD OPERATIONS LEADER: MERV DALE	PHONE NUMBER: 904 636 6125	ADDRESS: 4405 Vineland Rd. E-15
		CARRIER/WAYBILL NUMBER: Fedex 840272271487		CITY, STATE: ORLANDO, FL 32811

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

F20493

	DATE YEAR 2003	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	SELECT VOCS 8260B *	SELECT PAHS 8270 *	TRPH	SELECT FL-PRO SELECT VOCS 8260B *					COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)										G	G	G	G					
PRESERVATIVE USED										H_2O	None	None	CH_3OH					
1	11/6	1111	CEF-Q37-SU-CS-3-4.5		4	4.5	SO	G	4	2	1	✓	1					Cool to 4°C
2	11/6	1155	CEF-Q37-SU-CS-5-4.5		4	4.5	SO	G	4	2	1	✓	1					
3	11/6	1235	CEF-Q37-SU-CS-6-4.5		4	4.5	SO	G	4	2	1	✓	1					N3965-WR395(55)

*See attached Table 1 for list of analytes and methods.

Also the req'd detection limits are listed on Table 1.

1. RELINQUISHED BY: Merv W. Dale	DATE: 11/6/03	TIME: 1830	1. RECEIVED BY: Fedex	DATE	TIME
2. RELINQUISHED BY: FedEx	DATE	TIME	2. RECEIVED BY: Mina Mohammed	DATE: 11/7/03	TIME: 0915
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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

4/02R

FORM NO. TINUS 001

Sample Summary

Tetra Tech, NUS

Job No: F20493

Cecil Field-Site 36/37
Project No: N8442-CTO#282 N3965-WR395SS

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F20493-1	11/06/03	11:11 MD	11/07/03	SO	Soil	CEF-037-SU-CS-3-4.5
F20493-2	11/06/03	11:55 MD	11/07/03	SO	Soil	CEF-037-SU-CS-5-4.5
F20493-3	11/06/03	12:35 MD	11/07/03	SO	Soil	CEF-037-SU-CS-6-4.5

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

HOLDTIME

SDG F20493

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYP	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	CEF-037-SU-CS-6-4.5	F20493-3	NM	11/6/2003	11/19/2003	11/19/2003	13	0	13
PCS	%	CEF-037-SU-CS-5-4.5	F20493-2	NM	11/6/2003	11/19/2003	11/19/2003	13	0	13
PCS	%	CEF-037-SU-CS-3-4.5	F20493-1	NM	11/6/2003	11/19/2003	11/19/2003	13	0	13
OV	%	CEF-037-SU-CS-3-4.5	F20493-1	NM	11/6/2003	11/19/2003	11/19/2003	13	0	13
OV	%	CEF-037-SU-CS-5-4.5	F20493-2	NM	11/6/2003	11/17/2003	11/17/2003	11	0	11
OV	%	CEF-037-SU-CS-6-4.5	F20493-3	NM	11/6/2003	11/17/2003	11/17/2003	11	0	11
OV	%	CEF-037-SU-CS-3-4.5	F20493-1	NM	11/6/2003	11/18/2003	11/18/2003	12	0	12
OV	UG/KG	CEF-037-SU-CS-3-4.5	F20493-1	NM	11/6/2003	11/18/2003	11/18/2003	12	0	12
OV	UG/KG	CEF-037-SU-CS-5-4.5	F20493-2	NM	11/6/2003	11/17/2003	11/17/2003	11	0	11
OV	UG/KG	CEF-037-SU-CS-6-4.5	F20493-3	NM	11/6/2003	11/17/2003	11/17/2003	11	0	11
PAH	%	CEF-037-SU-CS-6-4.5	F20493-3	NM	11/6/2003	11/19/2003	11/23/2003	13	4	17
PAH	%	CEF-037-SU-CS-3-4.5	F20493-1	NM	11/6/2003	11/19/2003	11/21/2003	13	2	15
PAH	%	CEF-037-SU-CS-5-4.5	F20493-2	NM	11/6/2003	11/19/2003	11/21/2003	13	2	15
PAH	UG/KG	CEF-037-SU-CS-5-4.5	F20493-2	NM	11/6/2003	11/19/2003	11/21/2003	13	2	15
PAH	UG/KG	CEF-037-SU-CS-6-4.5	F20493-3	NM	11/6/2003	11/19/2003	11/23/2003	13	4	17

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYP	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PAH	UG/KG	CEF-037-SU-CS-3-4.5	F20493-1	NM	11/6/2003	11/19/2003	11/21/2003	13	2	15
TPH	MG/KG	CEF-037-SU-CS-6-4.5	F20493-3	NM	11/6/2003	11/12/2003	11/13/2003	6	1	7
TPH	MG/KG	CEF-037-SU-CS-3-4.5	F20493-1	NM	11/6/2003	11/12/2003	11/13/2003	6	1	7
TPH	MG/KG	CEF-037-SU-CS-5-4.5	F20493-2	NM	11/6/2003	11/12/2003	11/13/2003	6	1	7

TABLE 1
SUMMARY OF FIXED-BASED LABORATORY ANALYTICAL METHODS
SITE 37 SOIL SAMPLING AT HANGAR 14
NAS CECIL FIELD, JACKSONVILLE, FLORIDA

Analysis	Required Detection	Analytical Method	Bottleware[1]	Preservation	Holding Time[2]
SITE 37: 3 Soil Samples **CEF-037-SU-CS-3, CEF-037-SU-CS-5, and CEF-037-SU-CS-6. All samples to be collected at a depth of 4.5 feet bls.**					
Select VOCs • Benzene • Ethylbenzene • m-,p-Xylene • Isopropyl benzene • 1,2,4-Trimethylbenzene • 1,3,5-Trimethylbenzene	 0.007 mg/kg 0.6 mg/kg 0.2 mg/kg 0.2 mg/kg 0.3 mg/kg 0.3 mg/kg	SW-846 8260B	4-oz Glass Jar	Cool to 4° C	7 days to extraction Analysis within 14 days
Select PAHs • Naphthalene • 1-Methylnaphthalene • Benzo(a)pyrene	 1.7 mg/kg 2.2 mg/kg 0.1 mg/kg	SW-846 8310	8-oz Glass Jar	Cool to 4° C	7 days to extraction Analysis within 40 days
TRPH	340 mg/kg	Florida PRO Method	8-oz Glass Jar	Cool to 4° C	14 days to analysis

1- Sample volume may vary based upon the laboratory
2 - Holding times are measured from the date and time of sample collection

Method Blank Summary

Job Number: F20493
Account: TETRPAPT Tetra Tech, NUS
Project: Cecil Field-Site 36/37

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK649-MB	K015080.D	1	11/17/03	NAF	n/a	n/a	VK649

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

F20493-2, F20493-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	2.0	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	2.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	2.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	2.0	ug/kg	
	m,p-Xylene	ND	10	2.5	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	78-123%
2037-26-5	Toluene-D8	97%	71-137%
460-00-4	4-Bromofluorobenzene	103%	61-157%
17060-07-0	1,2-Dichloroethane-D4	97%	74-125%

Method Blank Summary

Job Number: F20493
Account: TETRPAPT Tetra Tech, NUS
Project: Cecil Field-Site 36/37

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK650-MB	K015103.D	1	11/18/03	NAF	n/a	n/a	VK650

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

F20493-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	2.0	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	2.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	2.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	2.0	ug/kg	
	m,p-Xylene	ND	10	2.5	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	104%	78-123%
2037-26-5	Toluene-D8	102%	71-137%
460-00-4	4-Bromofluorobenzene	105%	61-157%
17060-07-0	1,2-Dichloroethane-D4	109%	74-125%

Instrument Performance Check (BFB)

Job Number: F20493
Account: TETRPAPT Tetra Tech, NUS
Project: Cecil Field-Site 36/37

Sample:	VK616-BFB	**Injection Date:**	09/24/03
Lab File ID:	K014457.D	**Injection Time:**	13:26
Instrument ID:	GCMSK		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	6008	24.1	Pass
75	30.0 - 60.0% of mass 95	13569	54.5	Pass
95	Base peak, 100% relative abundance	24893	100.0	Pass
96	5.0 - 9.0% of mass 95	1730	6.9	Pass
173	Less than 2.0% of mass 174	0	0.0 (0.0) [a]	Pass
174	50.0 - 100.0% of mass 95	20008	80.4	Pass
175	5.0 - 9.0% of mass 174	1525	6.1 (7.6) [a]	Pass
176	95.0 - 101.0% of mass 174	19301	77.5 (96.5) [a]	Pass
177	5.0 - 9.0% of mass 176	1449	5.8 (7.5) [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
VK616-IC616	K014458.D	09/24/03	14:58	01:32	Initial cal 5
VK616-IC616	K014459.D	09/24/03	15:33	02:07	Initial cal 10
VK616-IC616	K014460.D	09/24/03	16:08	02:42	Initial cal 20
VK616-ICC616	K014461.D	09/24/03	16:44	03:18	Initial cal 40
VK616-IC616	K014462.D	09/24/03	17:19	03:53	Initial cal 100
VK616-IC616	K014463.D	09/24/03	17:54	04:28	Initial cal 200

Response Factor Report MSVOA2

Method : C:\HPCHEM\1\METHODS\092303S.M (RTE Integrator)
Title : SWA 5035/8260B
Last Update : Wed Aug 13 09:44:36 2003
Response via : Initial Calibration

Calibration Files
1 =K014458.D 2 =K014459.D 3 =K014460.D
4 =K014461.D 5 =K014462.D 6 =K014463.D

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	Fluorobenzene	----------ISTD----------							
2)		Dichlorodifluoromet	0.319	0.298	0.282	0.270	0.251	0.229	0.275	11.88
3)	P	Chloromethane	0.408	0.379	0.348	0.323	0.311	0.284	0.342	13.41
4)	C	Vinyl Chloride	0.350	0.299	0.291	0.285	0.270	0.244	0.290	12.18
5)		Bromomethane	0.295	0.253	0.232	0.227	0.210		0.243	13.37
6)		Chloroethane	0.132	0.185	0.176	0.166	0.159	0.144	0.160	12.44
7)		Trichlorofluorometh	0.430	0.379	0.359	0.338	0.330	0.347	0.364	10.09
8)		1,2-Dichloro-1,1,2-	0.358	0.317	0.293	0.294	0.267	0.242	0.295	13.61
9)		Ethyl ether	0.285	0.266	0.254	0.240	0.240	0.234	0.253	7.64
10)		Acrolein	0.023	0.022	0.021	0.020	0.020	0.021	0.021	6.10
11)		Acetone	0.141	0.119	0.110	0.098	0.100	0.103	0.112	14.54
12)		Freon 113	0.218	0.223	0.216	0.204	0.191	0.176	0.205	8.74
13)	C	1,1-Dichloroethene	0.491	0.430	0.414	0.401	0.386	0.358	0.414	10.98
14)		Iodomethane	0.427	0.433	0.424	0.401	0.394	0.369	0.408	6.05
15)		Methyl acetate	0.261	0.238	0.222	0.200	0.208	0.213	0.224	10.08
16)		Carbon Disulfide	0.815	0.746	0.709	0.678	0.652	0.611	0.702	10.29
17)		Methylene Chloride	0.709	0.546	0.496	0.452	0.436	0.405	0.507	21.74
		----- Linear regression ----- Coefficient = 0.9991								
		Response Ratio= 0.03952 + 0.39921 *Amt.ratio								
18)		Acrylonitrile	0.100	0.092	0.087	0.081	0.084	0.086	0.088	7.68
19)		Methyl Tert Butyl E	0.827	0.776	0.767	0.710	0.730	0.707	0.753	6.17
20)		trans-1,2-Dichloroe	0.486	0.469	0.456	0.427	0.412	0.379	0.438	9.05
21)		Hexane	0.481	0.418	0.349	0.327	0.300	0.270	0.357	21.97
		----- Linear regression ----- Coefficient = 0.9978								
		Response Ratio= 0.03751 + 0.26499 *Amt.ratio								
22)		Vinyl acetate	0.729	0.694	0.653	0.613	0.652	0.603	0.657	7.30
23)		Di-isopropyl ether	1.114	1.067	1.015	0.968	0.951	0.880	0.999	8.42
24)	P	1,1-Dichloroethane	0.588	0.555	0.537	0.505	0.496	0.461	0.524	8.65
25)		Ethyl tert-Butyl Et	0.943	0.903	0.878	0.843	0.842	0.802	0.869	5.78
26)		2-Butanone	0.202	0.176	0.163	0.147	0.155	0.160	0.167	11.77
27)		cis-1,2-Dichloroeth	0.312	0.304	0.297	0.287	0.277	0.260	0.289	6.52
28)		2,2-Dichloropropane	0.354	0.359	0.336	0.319	0.296	0.266	0.322	11.15
29)		Bromochloromethane	0.168	0.162	0.157	0.151	0.153	0.146	0.156	5.07
30)	C	Chloroform	0.596	0.568	0.560	0.520	0.513	0.485	0.540	7.62
31)		Tetrahydrofuran	0.120	0.112	0.108	0.091	0.095	0.096	0.104	10.96
32)	S	Dibromofluoromethan	0.352	0.343	0.356	0.351	0.351	0.350	0.350	1.24
33)		1,1,1-Trichloroetha	0.447	0.438	0.413	0.398	0.373	0.348	0.403	9.43
34)		Cyclohexane	0.428	0.466	0.426	0.416	0.394	0.357	0.414	8.85
35)		1,1-Dichloropropene	0.406	0.391	0.368	0.348	0.334	0.312	0.360	9.82
36)		Carbon Tetrachlorid	0.385	0.373	0.362	0.344	0.330	0.304	0.350	8.56

00125

(#) = Out of Range

Response Factor Report MSVOA2

Method : C:\HPCHEM\1\METHODS\092303S.M (RTE Integrator)
Title : SWA 5035/8260B
Last Update : Wed Aug 13 09:44:36 2003
Response via : Initial Calibration

Calibration Files
1 =K014458.D 2 =K014459.D 3 =K014460.D
4 =K014461.D 5 =K014462.D 6 =K014463.D

		Compound	1	2	3	4	5	6	Avg	%RSD
37)	S	1,2-Dichloroethane-	0.424	0.422	0.428	0.427	0.448	0.408	0.426	3.06
38)		1,2-Dichloroethane	0.493	0.474	0.473	0.443	0.440	0.419	0.457	6.01
39)		Benzene	1.075	1.030	0.963	0.927	0.890	0.831	0.953	9.43
40)		Tert-Amyl Methyl Et	0.827	0.798	0.777	0.720	0.741	0.705	0.761	6.22
41)		Trichloroethene	0.325	0.310	0.285	0.284	0.272	0.255	0.289	8.83
42)	C	1,2-Dichloropropane	0.332	0.341	0.310	0.301	0.302	0.287	0.312	6.56
43)		Methylcyclohexane	0.423	0.422	0.356	0.365	0.347	0.319	0.372	11.31
44)		Dibromomethane	0.222	0.230	0.205	0.210	0.213	0.208	0.215	4.33
45)		Bromodichloromethan	0.446	0.437	0.405	0.413	0.416	0.404	0.420	4.08
46)		2-Nitropropane	0.095	0.090	0.084	0.080	0.087	0.089	0.088	6.02
47)		2-Chloroethyl vinyl	0.023	0.025	0.023	0.023	0.029	0.031	0.026	13.63
48)		cis-1,3-Dichloropro	0.518	0.481	0.458	0.473	0.467	0.458	0.476	4.73
49)		4-Methyl-2-pentanon	0.402	0.353	0.331	0.318	0.329	0.337	0.345	8.72
50)	I	Chlorobenzene-d5	----------ISTD----------							
51)	S	Toluene-d8	1.257	1.296	1.301	1.350	1.317	1.304	1.304	2.32
52)	C	Toluene		1.546	1.419	1.325	1.296	1.186	1.354	10.00
53)		trans-1,3-Dichlorop	0.619	0.663	0.618	0.590	0.615	0.587	0.615	4.47
54)		1,1,2-Trichloroetha	0.336	0.344	0.323	0.306	0.312	0.297	0.320	5.69
55)		2-hexanone	0.404	0.374	0.340	0.312	0.336	0.340	0.351	9.32
56)		1,3-Dichloropropane	0.646	0.655	0.612	0.579	0.590	0.552	0.606	6.60
57)		Tetrachloroethene	0.412	0.408	0.372	0.353	0.340	0.313	0.366	10.66
58)		Dibromochloromethan	0.433	0.448	0.432	0.417	0.444	0.426	0.433	2.67
59)		1,2-Dibromoethane	0.395	0.403	0.392	0.366	0.385	0.370	0.385	3.78
60)		1-Chlorohexane	0.483	0.501	0.442	0.428	0.417	0.383	0.442	9.85
61)	P	Chlorobenzene	0.982	0.982	0.899	0.862	0.854	0.792	0.895	8.44
62)		1,1,1,2-Tetrachloro	0.363	0.376	0.360	0.349	0.348	0.325	0.354	4.91
63)	C	Ethylbenzene		1.648	1.546	1.481	1.418	1.290	1.477	9.12
64)		m,p-Xylene		1.406	1.277	1.196	1.155	1.059	1.219	10.75
65)		o-Xylene		1.466	1.347	1.276	1.227	1.136	1.290	9.65
66)		Styrene	0.985	0.992	0.953	0.904	0.897	0.834	0.928	6.51
67)	P	Bromoform	0.285	0.307	0.300	0.286	0.299	0.312	0.298	3.66
68)	I	1,4-Dichlorobenzene-d	----------ISTD----------							
69)		Isopropylbenzene	3.185	2.879	2.558	2.423	2.347	2.141	2.589	14.73
70)		Cyclohexanone		0.039	0.034	0.029	0.033	0.035	0.034	10.67
71)	S	4-Bromofluorobenzen	1.204	1.148	1.098	1.095	1.098	1.087	1.122	4.09
72)	P	1,1,2,2-Tetrachloro	1.120	1.021	0.942	0.889	0.920	0.891	0.964	9.38
73)		trans-1,4-Dichloro-	0.320	0.294	0.266	0.252	0.278	0.278	0.282	8.37
74)		1,2,3-Trichloroprop		0.285	0.259	0.247	0.248	0.244	0.257	6.62
75)		Bromobenzene		0.875	0.796	0.758	0.745	0.676	0.770	9.46
76)		n-Propylbenzene		3.727	3.365	3.189	3.034	2.718	3.207	11.72
77)		1,3,5-Trimethylbenz		2.606	2.383	2.272	2.185	1.957	2.281	10.54

(#) = Out of Range

Response Factor Report MSVOA2

Method : C:\HPCHEM\1\METHODS\092303S.M (RTE Integrator)
Title : SWA 5035/8260B
Last Update : Wed Aug 13 09:44:36 2003
Response via : Initial Calibration

Calibration Files
1 =K014458.D 2 =K014459.D 3 =K014460.D
4 =K014461.D 5 =K014462.D 6 =K014463.D

	Compound	1	2	3	4	5	6	Avg	%RSD
78)	2-Chlorotoluene		2.663	2.374	2.284	2.198	1.987	2.301	10.77
79)	4-Chlorotoluene		2.489	2.221	2.145	2.047	1.904	2.161	10.10
80)	tert-Butylbenzene		1.881	1.749	1.660	1.632	1.470	1.679	9.02
81)	1,2,4-Trimethylbenz		2.712	2.503	2.355	2.279	2.057	2.381	10.30
82)	sec-Butylbenzene		2.959	2.694	2.569	2.535	2.298	2.611	9.26
83)	4-Isopropyltoluene		2.374	2.189	2.130	2.055	1.876	2.125	8.59
84)	1,3-Dichlorobenzene		1.467	1.364	1.295	1.267	1.159	1.310	8.76
85)	1,4-Dichlorobenzene		1.460	1.378	1.306	1.273	1.183	1.320	7.95
86)	Benzyl chloride	1.427	1.461	1.386	1.304	1.402	1.347	1.388	4.05
87)	n-Butylbenzene		2.492	2.233	2.164	2.134	1.869	2.179	10.25
88)	1,2-Dichlorobenzene		1.426	1.308	1.250	1.246	1.109	1.268	9.05
89)	1,2-Dibromo-3-Chlor	0.205	0.172	0.168	0.158	0.175	0.172	0.175	8.97
90)	1,2,4-Trichlorobenz	0.859	0.812	0.745	0.750	0.795	0.713	0.779	6.82
91)	Hexachlorobutadiene	0.433	0.407	0.367	0.367	0.389	0.342	0.384	8.46
92)	Naphthalene		1.737	1.565	1.579	1.747	1.652	1.656	5.14
93)	1,2,3-Trichlorobenz	0.782	0.724	0.663	0.677	0.733	0.665	0.707	6.70
94) I	Tert Butyl Alcohol-d1	----------ISTD----------							
95)	Tert Butyl Alcohol	1.104	1.046	1.013	0.914	0.940	0.917	0.989	7.86
96)	Tert Amyl Alcohol	0.976	0.920	0.887	0.845	0.881	0.847	0.893	5.54
97)	1,4-Dioxane	0.092	0.078	0.076	0.085	0.086	0.081	0.083	7.14

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\092403\K014464.D
Acq On : 24 Sep 2003 6:29 pm
Sample : ICV-40
Misc :
MS Integration Params: RTEINT.P

Vial: 7
Operator: NancyF
Inst : MSVOA2
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\092303S.M (RTE Integrator)
Title : SWA 5035/8260B
Last Update : Wed Aug 13 09:44:36 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%

MMC 091503

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	103	0.00
2		Dichlorodifluoromethane	0.275	0.268	2.5	102	0.00
3	P	Chloromethane	0.342	0.335	2.0	107	0.00
4	C	Vinyl Chloride	0.290	0.300	-3.4	109	0.02
5		Bromomethane	0.243	0.240	1.2	109	0.03
6		Chloroethane	0.160	0.174	-8.7	108	0.00
7		Trichlorofluoromethane	0.364	0.312	14.3	95	0.02
8		1,2-Dichloro-1,1,2-trifluor	0.295	0.268	9.2	94	0.00
9		Ethyl ether	0.253	0.000#	100.0#	0#	-8.12#
10		Acrolein	0.021	0.029	-38.1#	151	0.00
11		Acetone	0.112	0.110	1.8	116	0.00
12		Freon 113	0.205	0.228	-11.2	115	0.00
13	C	1,1-Dichloroethene	0.414	0.365	11.8	94	0.02
14		Iodomethane	0.408	0.422	-3.4	109	0.00
15		Methyl acetate	0.224	0.260	-16.1	134	0.00
16		Carbon Disulfide	0.702	0.814	-16.0	124	0.02
17		Methylene Chloride	0.507	0.427	15.8	97	0.00
18		Acrylonitrile	0.088	0.103	-17.0	131	0.00
19		Methyl Tert Butyl Ether	0.753	0.828	-10.0	120	0.00
20		trans-1,2-Dichloroethene	0.438	0.431	1.6	104	0.00
21		Hexane	0.357	0.373	-4.5	118	0.00
22		Vinyl acetate	0.657	0.717	-9.1	121	0.00
23		Di-isopropyl ether	0.999	1.052	-5.3	112	0.00
24	P	1,1-Dichloroethane	0.524	0.501	4.4	102	0.00
25		Ethyl tert-Butyl Ether	0.869	0.945	-8.7	116	0.00
26		2-Butanone	0.167	0.179	-7.2	126	0.00
27		cis-1,2-Dichloroethene	0.289	0.298	-3.1	107	0.01
28		2,2-Dichloropropane	0.322	0.312	3.1	101	0.00
29		Bromochloromethane	0.156	0.169	-8.3	116	0.00
30	C	Chloroform	0.540	0.524	3.0	104	0.00
31		Tetrahydrofuran	0.104	0.116	-11.5	132	0.00
32	S	Dibromofluoromethane	0.350	0.351	-0.3	103	0.00
33		1,1,1-Trichloroethane	0.403	0.402	0.2	104	0.00
34		Cyclohexane	0.414	0.448	-8.2	111	0.00
35		1,1-Dichloropropene	0.360	0.361	-0.3	107	0.00
36		Carbon Tetrachloride	0.350	0.344	1.7	103	0.00
37	S	1,2-Dichloroethane-d4	0.426	0.428	-0.5	103	0.00
38		1,2-Dichloroethane	0.457	0.460	-0.7	107	0.00
39		Benzene	0.953	0.931	2.3	104	0.00
40		Tert-Amyl Methyl Ether	0.761	0.842	-10.6	121	0.00
41		Trichloroethene	0.289	0.282	2.4	102	0.00
42	C	1,2-Dichloropropane	0.312	0.320	-2.6	110	0.00
43		Methylcyclohexane	0.372	0.398	-7.0	112	0.00
44		Dibromomethane	0.215	0.223	-3.7	110	0.00
45		Bromodichloromethane	0.420	0.418	0.5	105	0.00

46		2-Nitropropane	0.088	0.105	-19.3	135	0.00
47		2-Chloroethyl vinyl ether	0.026	0.094	-261.5#	419#	0.00
48		cis-1,3-Dichloropropene	0.476	0.464	2.5	101	0.00
49		4-Methyl-2-pentanone	0.345	0.387	-12.2	126	0.00
50	I	Chlorobenzene-d5	1.000	1.000	0.0	109	0.00
51	S	Toluene-d8	1.304	1.314	-0.8	106	0.00
52	C	Toluene	1.354	1.341	1.0	111	0.00
53		trans-1,3-Dichloropropene	0.615	0.619	-0.7	114	0.00
54		1,1,2-Trichloroethane	0.320	0.327	-2.2	117	0.00
55		2-hexanone	0.351	0.390	-11.1	137	0.00
56		1,3-Dichloropropane	0.606	0.612	-1.0	116	0.00
57		Tetrachloroethene	0.366	0.371	-1.4	115	0.00
58		Dibromochloromethane	0.433	0.446	-3.0	117	0.00
59		1,2-Dibromoethane	0.385	0.396	-2.9	118	0.00
60		1-Chlorohexane	0.442	0.477	-7.9	122	0.00
61	P	Chlorobenzene	0.895	0.892	0.3	113	0.00
62		1,1,1,2-Tetrachloroethane	0.354	0.354	0.0	111	0.00
63	C	Ethylbenzene	1.477	1.493	-1.1	110	0.00
64		m,p-Xylene	1.219	1.259	-3.3	115	0.00
65		o-Xylene	1.290	1.310	-1.6	112	0.00
66		Styrene	0.928	0.926	0.2	112	0.00
67	P	Bromoform	0.298	0.336	-12.8	128	0.00
68	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	110	0.00
69		Isopropylbenzene	2.589	2.629	-1.5	119	0.00
70		Cyclohexanone	0.034	0.041	-20.6#	155	0.00
71	S	4-Bromofluorobenzene	1.122	1.077	4.0	108	0.00
72	P	1,1,2,2-Tetrachloroethane	0.964	1.007	-4.5	124	0.00
73		trans-1,4-Dichloro-2-Butene	0.282	0.315	-11.7	137	0.00
74		1,2,3-Trichloropropane	0.257	0.270	-5.1	120	0.00
75		Bromobenzene	0.770	0.784	-1.8	113	0.00
76		n-Propylbenzene	3.207	3.258	-1.6	112	0.00
77		1,3,5-Trimethylbenzene	2.281	2.359	-3.4	114	0.00
78		2-Chlorotoluene	2.301	2.407	-4.6	115	0.00
79		4-Chlorotoluene	2.161	2.265	-4.8	116	0.00
80		tert-Butylbenzene	1.679	1.739	-3.6	115	0.00
81		1,2,4-Trimethylbenzene	2.381	2.422	-1.7	113	0.00
82		sec-Butylbenzene	2.611	2.763	-5.8	118	0.00
83		4-Isopropyltoluene	2.125	2.330	-9.6	120	0.00
84		1,3-Dichlorobenzene	1.310	1.367	-4.4	116	0.00
85		1,4-Dichlorobenzene	1.320	1.389	-5.2	117	0.00
86		Benzyl chloride	1.388	0.000#	100.0#	0#	-21.81#
87		n-Butylbenzene	2.179	2.343	-7.5	119	0.00
88		1,2-Dichlorobenzene	1.268	1.330	-4.9	117	0.00
89		1,2-Dibromo-3-Chloropropane	0.175	0.206	-17.7	143	0.00
90		1,2,4-Trichlorobenzene	0.779	0.888	-14.0	130	0.00
91		Hexachlorobutadiene	0.384	0.432	-12.5	129	0.00
92		Naphthalene	1.656	2.059	-24.3#	143	0.00
93		1,2,3-Trichlorobenzene	0.707	0.827	-17.0	134	0.00
94	I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	130	0.00
95		Tert Butyl Alcohol	0.989	1.046	-5.8	149	0.00
96		Tert Amyl Alcohol	0.893	0.000#	100.0#	0#	-12.37#
97		1,4-Dioxane	0.083	0.088	-6.0	135	0.00

Average % D = 9.4

00190

(#) = Out of Range
K014461.D 092303S.M

SPCC's out = 0 CCC's out = 0
Thu Sep 25 13:37:58 2003 RP1

Instrument Performance Check (BFB)

Job Number: F20493
Account: TETRPAPT Tetra Tech, NUS
Project: Cecil Field-Site 36/37

Sample:	VK649-BFB	**Injection Date:**	11/17/03
Lab File ID:	K015077.D	**Injection Time:**	10:08
Instrument ID:	GCMSK		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	7054	22.8	Pass
75	30.0 - 60.0% of mass 95	16740	54.2	Pass
95	Base peak, 100% relative abundance	30875	100.0	Pass
96	5.0 - 9.0% of mass 95	2319	7.5	Pass
173	Less than 2.0% of mass 174	116	0.38 (0.47) [a]	Pass
174	50.0 - 100.0% of mass 95	24645	79.8	Pass
175	5.0 - 9.0% of mass 174	2011	6.5 (8.2) [a]	Pass
176	95.0 - 101.0% of mass 174	23979	77.7 (97.3) [a]	Pass
177	5.0 - 9.0% of mass 176	1691	5.5 (7.1) [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
VK649-CC616	K015078.D	11/17/03	10:26	00:18	Continuing cal 40
VK649-BS	K015079.D	11/17/03	11:22	01:14	Blank Spike
VK649-MB	K015080.D	11/17/03	11:58	01:50	Method Blank
F20485-4	K015081.D	11/17/03	12:41	02:33	(used for QC only; not part of job F20493)
ZZZZZZ	K015082.D	11/17/03	13:16	03:08	(unrelated sample)
ZZZZZZ	K015083.D	11/17/03	13:52	03:44	(unrelated sample)
F20485-4MS	K015085.D	11/17/03	15:02	04:54	Matrix Spike
F20485-4MSD	K015086.D	11/17/03	15:37	05:29	Matrix Spike Duplicate
ZZZZZZ	K015087.D	11/17/03	16:12	06:04	(unrelated sample)
ZZZZZZ	K015088.D	11/17/03	16:47	06:39	(unrelated sample)
ZZZZZZ	K015089.D	11/17/03	17:22	07:14	(unrelated sample)
ZZZZZZ	K015090.D	11/17/03	17:57	07:49	(unrelated sample)
ZZZZZZ	K015091.D	11/17/03	18:32	08:24	(unrelated sample)
F20493-2	K015092.D	11/17/03	19:08	09:00	CEF-037-SU-CS-5-4.5
F20493-3	K015093.D	11/17/03	19:43	09:35	CEF-037-SU-CS-6-4.5
ZZZZZZ	K015094.D	11/17/03	20:18	10:10	(unrelated sample)
ZZZZZZ	K015095.D	11/17/03	20:53	10:45	(unrelated sample)

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\111703\K015078.D
Acq On : 17 Nov 2003 10:26 am
Sample : CC616-40
Misc :
MS Integration Params: RTEINT.P

Vial: 1
Operator: NancyF
Inst : MSVOA2
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\092303S.M (RTE Integrator)
Title : SWA 5035/8260B
Last Update : Fri Oct 31 13:45:44 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%

MN 11-18-03

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	131	-0.02	12.94
2		Dichlorodifluoromethane	0.275	0.276	-0.4	134	0.00	5.41
3	P	Chloromethane	0.342	0.326	4.7	132	-0.04	5.95
4	C	Vinyl Chloride	0.290	0.298	-2.8	137	0.00	6.22
5		Bromomethane	0.243	0.222	8.6	128	-0.01	7.02
6		Chloroethane	0.160	0.171	-6.9	135	-0.01	7.23
7		Trichlorofluoromethane	0.356	0.394	-10.7	152	-0.03	7.66
8		1,2-Dichloro-1,1,2-triflu	0.295	0.313	-6.1	139	-0.01	8.05
9		Ethyl ether	0.253	0.231	8.7	126	-0.01	8.09
10		Acrolein	0.021	0.012	42.9#	78	-0.01	8.34
11		Acetone	0.112	0.146	-30.4#	195	-0.02	8.56
12		Freon 113	0.205	0.252	-22.9#	162	-0.04	8.59
13	C	1,1-Dichloroethene	0.414	0.410	1.0	134	-0.01	8.57
14		Iodomethane	0.408	0.418	-2.5	136	-0.02	8.88
15		Methyl acetate	0.224	0.210	6.3	137	-0.01	9.08
16		Carbon Disulfide	0.702	0.828	-17.9	160	-0.04	9.09
			True	Calc.	% Drift			
17		Methylene Chloride	40.000	35.580	11.1	117	-0.02	9.31
			AvgRF	CCRF	% Dev			
18		Acrylonitrile	0.088	0.088	0.0	142	-0.02	9.64
19		Methyl Tert Butyl Ether	0.753	0.752	0.1	139	-0.01	9.71
20		trans-1,2-Dichloroethene	0.438	0.463	-5.7	142	-0.01	9.76
			True	Calc.	% Drift			
21		Hexane	40.000	52.884	-32.2#	159	-0.02	10.14
			AvgRF	CCRF	% Dev			
22		Vinyl acetate	0.657	0.616	6.2	132	-0.01	10.34
23		Di-isopropyl ether	0.999	0.981	1.8	132	-0.02	10.37
24	P	1,1-Dichloroethane	0.524	0.533	-1.7	138	-0.01	10.40
25		Ethyl tert-Butyl Ether	0.869	0.869	0.0	135	-0.02	10.91
26		2-Butanone	0.167	0.174	-4.2	155	-0.02	11.17
27		cis-1,2-Dichloroethene	0.289	0.295	-2.1	135	-0.02	11.25
28		2,2-Dichloropropane	0.322	0.352	-9.3	144	-0.02	11.28
29		Bromochloromethane	0.156	0.161	-3.2	140	-0.02	11.62
30	C	Chloroform	0.540	0.569	-5.4	143	-0.02	11.66
31		Tetrahydrofuran	0.104	0.097	6.7	139	-0.02	11.69
32	S	Dibromofluoromethane	0.350	0.357	-2.0	133	-0.01	11.91
33		1,1,1-Trichloroethane	0.403	0.444	-10.2	146	-0.02	12.05
34		Cyclohexane	0.414	0.462	-11.6	145	-0.02	12.08
35		1,1-Dichloropropene	0.360	0.402	-11.7	151	-0.02	12.26
36		Carbon Tetrachloride	0.350	0.407	-16.3	155	-0.02	12.31
37	S	1,2-Dichloroethane-d4	0.426	0.440	-3.3	135	-0.01	12.45

38		1,2-Dichloroethane	0.457	0.473	-3.5	140	-0.02	12.56
39		Benzene	0.953	0.957	-0.4	135	-0.02	12.60
40		Tert-Amyl Methyl Ether	0.761	0.734	3.5	133	-0.02	12.61
41		Trichloroethene	0.289	0.321	-11.1	148	-0.02	13.49
42	C	1,2-Dichloropropane	0.312	0.301	3.5	131	-0.02	13.84
43		Methylcyclohexane	0.372	0.448	-20.4#	160	-0.02	13.85
44		Dibromomethane	0.215	0.216	-0.5	134	-0.02	14.04
45		Bromodichloromethane	0.420	0.438	-4.3	139	-0.01	14.19
46		2-Nitropropane	0.088	0.096	-9.1	156	-0.02	14.46
47		2-Chloroethyl vinyl ether	0.026	0.027	-3.8	150	-0.02	14.49
48		cis-1,3-Dichloropropene	0.476	0.474	0.4	131	-0.01	14.84
49		4-Methyl-2-pentanone	0.345	0.327	5.2	134	-0.01	14.96
50	I	Chlorobenzene-d5	1.000	1.000	0.0	148	-0.02	17.65
51	S	Toluene-d8	1.304	1.260	3.4	138	-0.02	15.30
52	C	Toluene	1.354	1.326	2.1	148	-0.01	15.42
53		trans-1,3-Dichloropropene	0.615	0.563	8.5	141	-0.02	15.63
54		1,1,2-Trichloroethane	0.320	0.281	12.2	136	-0.02	15.97
55		2-hexanone	0.351	0.309	12.0	147	-0.02	16.22
56		1,3-Dichloropropane	0.606	0.535	11.7	137	-0.02	16.26
57		Tetrachloroethene	0.366	0.403	-10.1	169	-0.02	16.33
58		Dibromochloromethane	0.433	0.410	5.3	146	-0.02	16.68
59		1,2-Dibromoethane	0.385	0.349	9.4	142	-0.02	16.95
60		1-Chlorohexane	0.442	0.489	-10.6	169	-0.02	17.47
61	P	Chlorobenzene	0.895	0.872	2.6	150	-0.02	17.71
62		1,1,1,2-Tetrachloroethane	0.354	0.348	1.7	147	-0.01	17.79
63	C	Ethylbenzene	1.477	1.514	-2.5	152	-0.02	17.79
64		m,p-Xylene	1.219	1.260	-3.4	156	-0.01	17.96
65		o-Xylene	1.290	1.300	-0.8	151	-0.02	18.65
66		Styrene	0.928	0.909	2.0	149	-0.02	18.65
67	P	Bromoform	0.298	0.283	5.0	147	-0.02	19.08
68	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	149	-0.02	21.52
69		Isopropylbenzene	2.589	2.586	0.1	159	-0.02	19.22
70		Cyclohexanone	0.034	0.025	26.5#	130	-0.03	19.48
71	S	4-Bromofluorobenzene	1.122	1.109	1.2	151	-0.03	19.55
72	P	1,1,2,2-Tetrachloroethane	0.964	0.828	14.1	139	-0.03	19.66
73		trans-1,4-Dichloro-2-Bute	0.282	0.263	6.7	155	-0.02	19.73
74		1,2,3-Trichloropropane	0.257	0.238	7.4	143	-0.02	19.81
75		Bromobenzene	0.770	0.742	3.6	145	-0.02	19.91
76		n-Propylbenzene	3.207	3.423	-6.7	160	-0.02	19.92
77		1,3,5-Trimethylbenzene	2.281	2.395	-5.0	157	-0.02	20.16
78		2-Chlorotoluene	2.301	2.341	-1.7	152	-0.03	20.17
79		4-Chlorotoluene	2.161	2.216	-2.5	154	-0.02	20.33
80		tert-Butylbenzene	1.679	1.827	-8.8	164	-0.02	20.76
81		1,2,4-Trimethylbenzene	2.381	2.482	-4.2	157	-0.02	20.82
82		sec-Butylbenzene	2.611	2.821	-8.0	163	-0.02	21.11
83		4-Isopropyltoluene	2.125	2.327	-9.5	162	-0.02	21.30
84		1,3-Dichlorobenzene	1.310	1.347	-2.8	155	-0.02	21.43
85		1,4-Dichlorobenzene	1.320	1.330	-0.8	151	-0.02	21.57
86		Benzyl chloride	1.388	1.360	2.0	155	-0.02	21.74
87		n-Butylbenzene	2.179	2.482	-13.9	170	-0.02	22.02
88		1,2-Dichlorobenzene	1.268	1.248	1.6	148	-0.02	22.26
89		1,2-Dibromo-3-Chloropropa	0.175	0.169	3.4	159	-0.01	23.63
90		1,2,4-Trichlorobenzene	0.779	0.839	-7.7	166	-0.03	25.22
91		Hexachlorobutadiene	0.384	0.446	-16.1	180	-0.02	25.46
92		Naphthalene	1.656	1.679	-1.4	158	-0.02	25.78
93		1,2,3-Trichlorobenzene	0.707	0.737	-4.2	162	-0.03	26.26
94	I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	160	-0.02	9.00
95		Tert Butyl Alcohol	0.198	0.171	13.6	149	-0.02	9.34
96		Tert Amyl Alcohol	0.179	0.079	55.9#	74	-0.02	12.32
97		1,4-Dioxane	0.017	0.014	17.6	131	-0.02	13.96

(7.5 %) 7 of 93 compounds'%D > 20

(#) = Out of Range SPCC's out = 0 CCC's out = 0
K014461.D 092303S.M Mon Nov 17 11:03:03 2003 RP1

Instrument Performance Check (BFB)

Job Number: F20493
Account: TETRPAPT Tetra Tech, NUS
Project: Cecil Field-Site 36/37

Sample: VK650-BFB
Lab File ID: K015100.D
Instrument ID: GCMSK
Injection Date: 11/18/03
Injection Time: 13:56

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	5323	21.8	Pass
75	30.0 - 60.0% of mass 95	13402	54.9	Pass
95	Base peak, 100% relative abundance	24392	100.0	Pass
96	5.0 - 9.0% of mass 95	1785	7.3	Pass
173	Less than 2.0% of mass 174	0	0.0 (0.0) [a]	Pass
174	50.0 - 100.0% of mass 95	18776	77.0	Pass
175	5.0 - 9.0% of mass 174	1452	6.0 (7.7) [a]	Pass
176	95.0 - 101.0% of mass 174	18707	76.7 (99.6) [a]	Pass
177	5.0 - 9.0% of mass 176	1266	5.2 (6.8) [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
VK650-CC616	K015101.D	11/18/03	14:15	00:19	Continuing cal 40
VK650-BS	K015102.D	11/18/03	14:55	00:59	Blank Spike
VK650-MB	K015103.D	11/18/03	15:30	01:34	Method Blank
F20501-1	K015104.D	11/18/03	16:16	02:20	(used for QC only; not part of job F20493)
ZZZZZZ	K015105.D	11/18/03	16:52	02:56	(unrelated sample)
ZZZZZZ	K015106.D	11/18/03	17:27	03:31	(unrelated sample)
ZZZZZZ	K015107.D	11/18/03	18:02	04:06	(unrelated sample)
F20493-1	K015109.D	11/18/03	19:12	05:16	CEF-037-SU-CS-3-4.5
F20501-1MS	K015110.D	11/18/03	19:47	05:51	Matrix Spike
F20501-1MSD	K015111.D	11/18/03	20:22	06:26	Matrix Spike Duplicate
ZZZZZZ	K015112.D	11/18/03	20:57	07:01	(unrelated sample)
ZZZZZZ	K015113.D	11/18/03	21:32	07:36	(unrelated sample)
ZZZZZZ	K015114.D	11/18/03	22:07	08:11	(unrelated sample)
ZZZZZZ	K015115.D	11/18/03	22:43	08:47	(unrelated sample)
ZZZZZZ	K015116.D	11/18/03	23:18	09:22	(unrelated sample)
ZZZZZZ	K015117.D	11/18/03	23:53	09:57	(unrelated sample)
ZZZZZZ	K015118.D	11/19/03	00:28	10:32	(unrelated sample)
ZZZZZZ	K015119.D	11/19/03	01:02	11:06	(unrelated sample)
ZZZZZZ	K015120.D	11/19/03	01:38	11:42	(unrelated sample)

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\111803\K015101.D
Acq On : 18 Nov 2003 2:15 pm
Sample : CC616-40
Misc :
MS Integration Params: RTEINT.P

Vial: 1
Operator: NancyF
Inst : MSVOA2
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\092303S.M (RTE Integrator)
Title : SWA 5035/8260B
Last Update : Fri Oct 31 13:45:44 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%

MW-11-19-03

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	99	0.00	12.97
2		Dichlorodifluoromethane	0.275	0.255	7.3	94	0.02	5.44
3	P	Chloromethane	0.342	0.314	8.2	97	-0.03	5.97
4	C	Vinyl Chloride	0.290	0.284	2.1	99	0.01	6.23
5		Bromomethane	0.243	0.230	5.3	101	0.01	7.04
6		Chloroethane	0.160	0.171	-6.9	102	0.00	7.25
7		Trichlorofluoromethane	0.356	0.379	-6.5	111	0.00	7.69
8		1,2-Dichloro-1,1,2-triflu	0.295	0.306	-3.7	104	0.01	8.07
9		Ethyl ether	0.253	0.252	0.4	104	0.01	8.11
10		Acrolein	0.021	0.013	38.1#	66	0.02	8.37
11		Acetone	0.112	0.133	-18.8	135	0.01	8.60
12		Freon 113	0.205	0.238	-16.1	116	-0.03	8.61
13	C	1,1-Dichloroethene	0.414	0.408	1.4	101	0.01	8.60
14		Iodomethane	0.408	0.425	-4.2	106	0.00	8.90
15		Methyl acetate	0.224	0.251	-12.1	125	0.00	9.10
16		Carbon Disulfide	0.702	0.806	-14.8	118	0.00	9.13
			True	Calc.	% Drift			
17		Methylene Chloride	40.000	50.063	-25.2#	121	0.00	9.33
			AvgRF	CCRF	% Dev			
18		Acrylonitrile	0.088	0.101	-14.8	124	0.00	9.66
19		Methyl Tert Butyl Ether	0.753	0.832	-10.5	117	0.01	9.74
20		trans-1,2-Dichloroethene	0.438	0.474	-8.2	110	0.01	9.79
			True	Calc.	% Drift			
21		Hexane	40.000	54.590	-36.5#	124	0.00	10.16
			AvgRF	CCRF	% Dev			
22		Vinyl acetate	0.657	0.708	-7.8	115	0.01	10.37
23		Di-isopropyl ether	0.999	1.076	-7.7	110	0.00	10.40
24	P	1,1-Dichloroethane	0.524	0.569	-8.6	112	0.01	10.43
25		Ethyl tert-Butyl Ether	0.869	0.962	-10.7	114	0.00	10.94
26		2-Butanone	0.167	0.191	-14.4	129	0.00	11.19
27		cis-1,2-Dichloroethene	0.289	0.307	-6.2	107	0.01	11.28
28		2,2-Dichloropropane	0.322	0.357	-10.9	111	0.01	11.31
29		Bromochloromethane	0.156	0.173	-10.9	114	0.00	11.65
30	C	Chloroform	0.540	0.606	-12.2	116	0.01	11.70
31		Tetrahydrofuran	0.104	0.117	-12.5	128	0.00	11.72
32	S	Dibromofluoromethane	0.350	0.381	-8.9	108	0.01	11.93
33		1,1,1-Trichloroethane	0.403	0.464	-15.1	116	0.01	12.08
34		Cyclohexane	0.414	0.467	-12.8	111	0.00	12.21
35		1,1-Dichloropropene	0.360	0.405	-12.5	116	0.00	12.29
36		Carbon Tetrachloride	0.350	0.421	-20.3#	122	0.01	12.35
37	S	1,2-Dichloroethane-d4	0.426	0.498	-16.9	116	0.01	12.47

38		1,2-Dichloroethane	0.457	0.540	-18.2	121	0.01	12.59
39		Benzene	0.953	0.985	-3.4	106	0.00	12.62
40		Tert-Amyl Methyl Ether	0.761	0.816	-7.2	113	0.01	12.64
41		Trichloroethene	0.289	0.312	-8.0	109	0.01	13.53
42	C	1,2-Dichloropropane	0.312	0.307	1.6	101	0.00	13.86
43		Methylcyclohexane	0.372	0.418	-12.4	114	0.01	13.88
44		Dibromomethane	0.215	0.228	-6.0	108	0.00	14.06
45		Bromodichloromethane	0.420	0.455	-8.3	109	0.01	14.22
46		2-Nitropropane	0.088	0.113	-28.4#	140	0.01	14.49
47		2-Chloroethyl vinyl ether	0.026	0.025	3.8	106	0.01	14.52
48		cis-1,3-Dichloropropene	0.476	0.487	-2.3	102	0.02	14.88
49		4-Methyl-2-pentanone	0.345	0.386	-11.9	121	0.01	14.98
50	I	Chlorobenzene-d5	1.000	1.000	0.0	106	0.01	17.68
51	S	Toluene-d8	1.304	1.304	0.0	102	0.01	15.34
52	C	Toluene	1.354	1.382	-2.1	110	0.01	15.45
53		trans-1,3-Dichloropropene	0.615	0.634	-3.1	114	0.01	15.66
54		1,1,2-Trichloroethane	0.320	0.312	2.5	108	0.00	16.00
55		2-hexanone	0.351	0.385	-9.7	131	0.01	16.25
56		1,3-Dichloropropane	0.606	0.597	1.5	109	0.01	16.29
57		Tetrachloroethene	0.366	0.407	-11.2	122	0.01	16.36
58		Dibromochloromethane	0.433	0.459	-6.0	116	0.01	16.72
59		1,2-Dibromoethane	0.385	0.395	-2.6	114	0.01	16.98
60		1-Chlorohexane	0.442	0.492	-11.3	122	0.01	17.50
61	P	Chlorobenzene	0.895	0.916	-2.3	112	0.01	17.74
62		1,1,1,2-Tetrachloroethane	0.354	0.385	-8.8	116	0.01	17.81
63	C	Ethylbenzene	1.477	1.599	-8.3	114	0.01	17.82
64		m,p-Xylene	1.219	1.313	-7.7	116	0.02	18.00
65		o-Xylene	1.290	1.372	-6.4	114	0.01	18.69
66		Styrene	0.928	0.963	-3.8	113	0.01	18.69
67	P	Bromoform	0.298	0.328	-10.1	121	0.01	19.12
68	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.02	21.56
69		Isopropylbenzene	2.589	2.681	-3.6	117	0.01	19.26
70		Cyclohexanone	0.034	0.032	5.9	119	0.00	19.51
71	S	4-Bromofluorobenzene	1.122	1.125	-0.3	109	0.01	19.59
72	P	1,1,2,2-Tetrachloroethane	0.964	0.946	1.9	113	0.01	19.70
73		trans-1,4-Dichloro-2-Bute	0.282	0.328	-16.3	138	0.01	19.77
74		1,2,3-Trichloropropane	0.257	0.270	-5.1	116	0.01	19.85
75		Bromobenzene	0.770	0.795	-3.2	111	0.01	19.95
76		n-Propylbenzene	3.207	3.519	-9.7	117	0.01	19.96
77		1,3,5-Trimethylbenzene	2.281	2.527	-10.8	118	0.01	20.19
78		2-Chlorotoluene	2.301	2.491	-8.3	115	0.01	20.21
79		4-Chlorotoluene	2.161	2.390	-10.6	118	0.01	20.37
80		tert-Butylbenzene	1.679	1.948	-16.0	124	0.01	20.79
81		1,2,4-Trimethylbenzene	2.381	2.613	-9.7	117	0.01	20.85
82		sec-Butylbenzene	2.611	2.910	-11.5	120	0.01	21.15
83		4-Isopropyltoluene	2.125	2.370	-11.5	118	0.01	21.33
84		1,3-Dichlorobenzene	1.310	1.415	-8.0	116	0.01	21.46
85		1,4-Dichlorobenzene	1.320	1.424	-7.9	115	0.01	21.60
86		Benzyl chloride	1.388	1.531	-10.3	124	0.01	21.78
87		n-Butylbenzene	2.179	2.539	-16.5	124	0.02	22.06
88		1,2-Dichlorobenzene	1.268	1.351	-6.5	114	0.01	22.30
89		1,2-Dibromo-3-Chloropropa	0.175	0.207	-18.3	139	0.02	23.67
90		1,2,4-Trichlorobenzene	0.779	0.913	-17.2	129	0.02	25.27
91		Hexachlorobutadiene	0.384	0.478	-24.5#	138	0.02	25.51
92		Naphthalene	1.656	1.907	-15.2	128	0.03	25.83
93		1,2,3-Trichlorobenzene	0.707	0.824	-16.5	129	0.02	26.31
94	I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	119	0.01	9.25
95		Tert Butyl Alcohol	0.198	0.213	-7.6	139	0.00	9.36
96		Tert Amyl Alcohol	0.179	0.100	44.1#	71	0.00	12.35
97		1,4-Dioxane	0.017	0.015	11.8	107	0.00	13.98

(7.5 %) 7 of 93 compounds'%D > 20

(#) = Out of Range
K014461.D 092303S.M

SPCC's out = 0 CCC's out = 0
Tue Nov 18 15:27:05 2003 RP1

Instrument Performance Check (BFB)

Job Number: F20493
Account: TETRPAPT Tetra Tech, NUS
Project: Cecil Field-Site 36/37

Sample:	VK651-BFB	**Injection Date:**	11/19/03
Lab File ID:	K015127.D	**Injection Time:**	10:52
Instrument ID:	GCMSK		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	5233	21.9	Pass
75	30.0 - 60.0% of mass 95	13778	57.7	Pass
95	Base peak, 100% relative abundance	23869	100.0	Pass
96	5.0 - 9.0% of mass 95	1618	6.8	Pass
173	Less than 2.0% of mass 174	0	0.0 (0.0) [a]	Pass
174	50.0 - 100.0% of mass 95	18312	76.7	Pass
175	5.0 - 9.0% of mass 174	1330	5.6 (7.3) [a]	Pass
176	95.0 - 101.0% of mass 174	18096	75.8 (98.8) [a]	Pass
177	5.0 - 9.0% of mass 176	1226	5.1 (6.8) [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
VK651-CC616	K015128.D	11/19/03	11:10	00:18	Continuing cal 40
VK651-BS	K015129.D	11/19/03	11:51	00:59	Blank Spike
VK651-MB	K015130.D	11/19/03	12:27	01:35	Method Blank
F20647-3	K015131.D	11/19/03	13:19	02:27	(used for QC only; not part of job F20493)
ZZZZZZ	K015132.D	11/19/03	13:54	03:02	(unrelated sample)
ZZZZZZ	K015133.D	11/19/03	14:29	03:37	(unrelated sample)
F20493-1	K015134.D	11/19/03	15:05	04:13	CEF-037-SU-CS-3-4.5
F20647-3MS	K015135.D	11/19/03	15:40	04:48	Matrix Spike
F20647-3MSD	K015136.D	11/19/03	16:15	05:23	Matrix Spike Duplicate
ZZZZZZ	K015137.D	11/19/03	17:18	06:26	(unrelated sample)
ZZZZZZ	K015138.D	11/19/03	17:53	07:01	(unrelated sample)
ZZZZZZ	K015139.D	11/19/03	18:28	07:36	(unrelated sample)
ZZZZZZ	K015140.D	11/19/03	19:03	08:11	(unrelated sample)
ZZZZZZ	K015141.D	11/19/03	19:38	08:46	(unrelated sample)
ZZZZZZ	K015142.D	11/19/03	20:13	09:21	(unrelated sample)
ZZZZZZ	K015143.D	11/19/03	20:48	09:56	(unrelated sample)
ZZZZZZ	K015144.D	11/19/03	21:23	10:31	(unrelated sample)
ZZZZZZ	K015145.D	11/19/03	21:58	11:06	(unrelated sample)
ZZZZZZ	K015146.D	11/19/03	22:33	11:41	(unrelated sample)

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\111903\K015128.D Vial: 1
Acq On : 19 Nov 2003 11:10 am Operator: NancyF
Sample : CC616-40 Inst : MSVOA2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\092303S.M (RTE Integrator)
Title : SWA 5035/8260B
Last Update : Fri Oct 31 13:45:44 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%

NMF 11-20-03

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Fluorobenzene	1.000	1.000	0.0	106	0.03	12.99
2		Dichlorodifluoromethane	0.275	0.220	20.0#	86	0.02	5.44
3	P	Chloromethane	0.342	0.273	20.2#	90	-0.01	5.99
4	C	Vinyl Chloride	0.290	0.253	12.8	94	0.00	6.22
5		Bromomethane	0.243	0.198	18.5	92	0.04	7.07
6		Chloroethane	0.160	0.152	5.0	97	0.00	7.25
7		Trichlorofluoromethane	0.356	0.341	4.2	107	-0.01	7.68
8		1,2-Dichloro-1,1,2-triflu	0.295	0.275	6.8	99	0.03	8.09
9		Ethyl ether	0.253	0.232	8.3	102	0.03	8.13
10		Acrolein	0.021	0.011	47.6#	58	0.02	8.37
11		Acetone	0.112	0.120	-7.1	130	0.02	8.60
12		Freon 113	0.205	0.236	-15.1	122	0.00	8.64
13	C	1,1-Dichloroethene	0.414	0.396	4.3	104	0.03	8.61
14		Iodomethane	0.408	0.414	-1.5	109	0.03	8.93
15		Methyl acetate	0.224	0.213	4.9	113	0.02	9.12
16		Carbon Disulfide	0.702	0.780	-11.1	122	0.00	9.14
		----------	True	Calc.	% Drift	----------		
17		Methylene Chloride	40.000	46.529	-16.3	120	0.02	9.35
		----------	AvgRF	CCRF	% Dev	----------		
18		Acrylonitrile	0.088	0.084	4.5	110	0.02	9.68
19		Methyl Tert Butyl Ether	0.753	0.769	-2.1	115	0.03	9.76
20		trans-1,2-Dichloroethene	0.438	0.457	-4.3	113	0.03	9.81
		----------	True	Calc.	% Drift	----------		
21		Hexane	40.000	50.176	-25.4#	123	0.02	10.18
		----------	AvgRF	CCRF	% Dev	----------		
22		Vinyl acetate	0.657	0.580	11.7	100	0.03	10.39
23		Di-isopropyl ether	0.999	0.950	4.9	104	0.02	10.42
24	P	1,1-Dichloroethane	0.524	0.497	5.2	104	0.03	10.45
25		Ethyl tert-Butyl Ether	0.869	0.847	2.5	106	0.02	10.96
26		2-Butanone	0.167	0.149	10.8	107	0.03	11.22
27		cis-1,2-Dichloroethene	0.289	0.280	3.1	103	0.03	11.30
28		2,2-Dichloropropane	0.322	0.330	-2.5	109	0.02	11.32
29		Bromochloromethane	0.156	0.153	1.9	107	0.02	11.67
30	C	Chloroform	0.540	0.537	0.6	109	0.03	11.71
31		Tetrahydrofuran	0.104	0.092	11.5	106	0.03	11.74
32	S	Dibromofluoromethane	0.350	0.344	1.7	104	0.03	11.95
33		1,1,1-Trichloroethane	0.403	0.414	-2.7	110	0.02	12.09
34		Cyclohexane	0.414	0.425	-2.7	108	0.02	12.23
35		1,1-Dichloropropene	0.360	0.360	0.0	109	0.02	12.31
36		Carbon Tetrachloride	0.350	0.387	-10.6	119	0.03	12.36
37	S	1,2-Dichloroethane-d4	0.426	0.439	-3.1	109	0.03	12.49

38		1,2-Dichloroethane	0.457	0.459	-0.4	110	0.03	12.61
39		Benzene	0.953	0.882	7.5	101	0.02	12.64
40		Tert-Amyl Methyl Ether	0.761	0.720	5.4	106	0.03	12.66
41		Trichloroethene	0.289	0.296	-2.4	110	0.03	13.55
42	C	1,2-Dichloropropane	0.312	0.286	8.3	101	0.03	13.89
43		Methylcyclohexane	0.372	0.390	-4.8	113	0.03	13.90
44		Dibromomethane	0.215	0.207	3.7	104	0.03	14.09
45		Bromodichloromethane	0.420	0.411	2.1	105	0.03	14.23
46		2-Nitropropane	0.088	0.092	-4.5	121	0.03	14.51
47		2-Chloroethyl vinyl ether	0.026	0.037	-42.3#	170	0.03	14.54
48		cis-1,3-Dichloropropene	0.476	0.454	4.6	102	0.04	14.89
49		4-Methyl-2-pentanone	0.345	0.321	7.0	107	0.03	15.00
50	I	Chlorobenzene-d5	1.000	1.000	0.0	110	0.04	17.71
51	S	Toluene-d8	1.304	1.331	-2.1	108	0.04	15.37
52	C	Toluene	1.354	1.404	-3.7	116	0.04	15.48
53		trans-1,3-Dichloropropene	0.615	0.599	2.6	112	0.03	15.68
54		1,1,2-Trichloroethane	0.320	0.294	8.1	105	0.03	16.03
55		2-hexanone	0.351	0.323	8.0	114	0.03	16.27
56		1,3-Dichloropropane	0.606	0.555	8.4	105	0.03	16.31
57		Tetrachloroethene	0.366	0.406	-10.9	126	0.03	16.38
58		Dibromochloromethane	0.433	0.438	-1.2	115	0.03	16.73
59		1,2-Dibromoethane	0.385	0.369	4.2	111	0.03	17.00
60		1-Chlorohexane	0.442	0.477	-7.9	122	0.03	17.52
61	P	Chlorobenzene	0.895	0.888	0.8	113	0.03	17.76
62		1,1,1,2-Tetrachloroethane	0.354	0.364	-2.8	115	0.04	17.84
63	C	Ethylbenzene	1.477	1.560	-5.6	116	0.04	17.85
64		m,p-Xylene	1.219	1.322	-8.4	121	0.04	18.01
65		o-Xylene	1.290	1.356	-5.1	117	0.03	18.70
66		Styrene	0.928	0.934	-0.6	113	0.04	18.71
67	P	Bromoform	0.298	0.299	-0.3	115	0.03	19.14
68	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	109	0.04	21.58
69		Isopropylbenzene	2.589	2.672	-3.2	121	0.04	19.28
70		Cyclohexanone	0.034	0.026	23.5#	98	0.03	19.54
71	S	4-Bromofluorobenzene	1.122	1.135	-1.2	113	0.03	19.61
72	P	1,1,2,2-Tetrachloroethane	0.964	0.860	10.8	106	0.03	19.72
73		trans-1,4-Dichloro-2-Bute	0.282	0.284	-0.7	123	0.03	19.79
74		1,2,3-Trichloropropane	0.257	0.247	3.9	109	0.03	19.87
75		Bromobenzene	0.770	0.775	-0.6	112	0.03	19.96
76		n-Propylbenzene	3.207	3.492	-8.9	120	0.03	19.97
77		1,3,5-Trimethylbenzene	2.281	2.547	-11.7	122	0.04	20.22
78		2-Chlorotoluene	2.301	2.455	-6.7	117	0.03	20.23
79		4-Chlorotoluene	2.161	2.316	-7.2	118	0.03	20.39
80		tert-Butylbenzene	1.679	1.938	-15.4	128	0.03	20.81
81		1,2,4-Trimethylbenzene	2.381	2.648	-11.2	123	0.03	20.87
82		sec-Butylbenzene	2.611	2.886	-10.5	123	0.03	21.16
83		4-Isopropyltoluene	2.125	2.368	-11.4	121	0.03	21.35
84		1,3-Dichlorobenzene	1.310	1.395	-6.5	118	0.03	21.48
85		1,4-Dichlorobenzene	1.320	1.420	-7.6	119	0.04	21.63
86		Benzyl chloride	1.388	1.445	-4.1	121	0.03	21.79
87		n-Butylbenzene	2.179	2.509	-15.1	127	0.04	22.08
88		1,2-Dichlorobenzene	1.268	1.328	-4.7	116	0.04	22.33
89		1,2-Dibromo-3-Chloropropa	0.175	0.181	-3.4	125	0.04	23.68
90		1,2,4-Trichlorobenzene	0.779	0.928	-19.1	135	0.04	25.29
91		Hexachlorobutadiene	0.384	0.464	-20.8#	138	0.04	25.52
92		Naphthalene	1.656	1.834	-10.7	127	0.04	25.84
93		1,2,3-Trichlorobenzene	0.707	0.821	-16.1	133	0.04	26.33
94	I	Tert Butyl Alcohol-d10	1.000	1.000	0.0	110	0.02	9.25
95		Tert Butyl Alcohol	0.198	0.198	0.0	120	0.02	9.38
96		Tert Amyl Alcohol	0.179	0.088	50.8#	58	0.02	12.36
97		1,4-Dioxane	0.017	0.016	5.9	101	0.03	14.01

(8.6 %) 8 of 93 compounds'%D > 20

(#) = Out of Range
K014461.D 092303S.M

SPCC's out = 0 CCC's out = 0
Wed Nov 19 11:42:34 2003 RP1

Volatile Surrogate Recovery Summary

Job Number: F20493
Account: TETRPAPT Tetra Tech, NUS
Project: Cecil Field-Site 36/37

Method: SW846 8260B **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
F20493-1	K015134.D	99.0	152.0*	317.0*	100.0
F20493-1	K015109.D	99.0	180.0* a	112.0	103.0
F20493-2	K015092.D	102.0	99.0	114.0	104.0
F20493-3	K015093.D	101.0	99.0	111.0	105.0
F20485-4MS	K015085.D	99.0	102.0	106.0	94.0
F20485-4MSD	K015086.D	99.0	100.0	108.0	95.0
F20501-1MS	K015110.D	38.0*	106.0	108.0	96.0
F20501-1MSD	K015111.D	37.0*	106.0	110.0	96.0
F20647-3MS	K015135.D	98.0	111.0	130.0	100.0
F20647-3MSD	K015136.D	99.0	110.0	128.0	101.0
VK649-BS	K015079.D	102.0	97.0	100.0	105.0
VK649-MB	K015080.D	101.0	97.0	103.0	97.0
VK650-BS	K015102.D	101.0	102.0	101.0	108.0
VK650-MB	K015103.D	104.0	102.0	105.0	109.0
VK651-BS	K015129.D	100.0	102.0	100.0	105.0
VK651-MB	K015130.D	99.0	103.0	106.0	101.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	78-123%
S2 = Toluene-D8	71-137%
S3 = 4-Bromofluorobenzene	61-157%
S4 = 1,2-Dichloroethane-D4	74-125%

(a) Outside control limits due to matrix interference. Confirmed by reanalysis.

Partial Sequence: C:\HPCHEM\1\SEQUENCE\1121APAH.S GMA887

Sel	Run	Vial	Method	Datafile	SeqTable	Calib:RF:RT	Sample Name
No	1	1	8310_32A	AA018553	01:01		ACN
No	2	2	8310_32A	AA018554	02:01		CC846-10
No	3	4	8310_32A	AA018555	03:01		OP9126-BS
No	4	5	8310_32A	AA018556	04:01		OP9126-MB
No	5	6	8310_32A	AA018557	05:01		F20710-1
No	6	7	8310_32A	AA018558	06:01		F20572-6CF
No	7	8	8310_32A	AA018559	07:01		F20572-6,2
No	8	9	8310_32A	AA018560	08:01		OP9110-BS
No	9	10	8310_32A	AA018561	09:01		OP9110-MB
No	10	11	8310_32A	AA018562	10:01		F20493-1
No	11	12	8310_32A	AA018563	11:01		F20493-2
No	12	3	8310_32A	AA018564	12:01		CC846-20
No	13	13	8310_32A	AA018565	13:01		F20493-3,4
No	14	14	8310_32A	AA018566	14:01		F20555-1,10
No	15	15	8310_32A	AA018567	15:01		F20577-6
No	16	16	8310_32A	AA018568	16:01		F20604-7
No	17	17	8310_32A	AA018569	17:01		F20605-1
No	18	18	8310_32A	AA018570	18:01		F20607-1
No	19	19	8310_32A	AA018571	19:01		F20624-1
No	20	20	8310_32A	AA018572	20:01		F20624-2,4
No	21	21	8310_32A	AA018573	21:01		F20674-1
No	22	22	8310_32A	AA018574	22:01		F20674-2
No	23	3	8310_32A	AA018575	23:01		CC846-20
No	24	23	8310_32A	AA018576	24:01		F20674-3
No	25	24	8310_32A	AA018577	25:01		OP9110-MS
No	26	25	8310_32A	AA018578	26:01		OP9110-MSD
No	27	26	8310_32A	AA018579	27:01		F20674-4
No	28	27	8310_32A	AA018580	28:01		F20674-5
No	29	28	8310_32A	AA018581	29:01		F20674-6
No	30	29	8310_32A	AA018582	30:01		F20674-7
No	31	30	8310_32A	AA018583	31:01		F20674-8
No	32	31	8310_32A	AA018584	32:01		F20674-9
No	33	32	8310_32A	AA018585	33:01		F20674-10
No	34	3	8310_32A	AA018586	34:01		ECC846-20

Partial Sequence: C:\HPCHEM\1\SEQUENCE\1123PAH.S GAA 888

Sel	Run	Vial	Method	Datafile	SeqTable	Calib:RF:RT	Sample Name
No	1	1	8310_32A	AA018587	01:01		ACN
No	2	2	8310_32A	AA018588	02:01		CC846-10
No	3	4	8310_32A	AA018589	03:01		OP9110-MB
No	4	5	8310_32A	AA018590	04:01		F20493-3
No	5	6	8310_32A	AA018591	05:01		F20555-1,5
No	6	7	8310_32A	AA018592	06:01		F20624-2,8
No	7	8	8310_32A	AA018593	07:01		F20674-4,2
No	8	9	8310_32A	AA018594	08:01		F20674-5,5
No	9	10	8310_32A	AA018595	09:01		F20674-6,5
No	10	3	8310_32A	AA018596	10:01		ECC846-20

Partial Sequence: C:\HPCHEM\1\SEQUENCE\1007PAH.S GMA846

Sel	Run	Vial	Method	Datafile	SeqTable	Calib:RF:RT	Sample Name
No	1	1	8310_32A	AA017698	01:01		CC846-40
No	2	2	8310_32A	AA017699	02:01		ACN
No	3	3	8310_32A	AA017700	03:01		IC846-0.4
No	4	4	8310_32A	AA017701	04:01		IC846-2.0
No	5	5	8310_32A	AA017702	05:01		IC846-10
No	6	6	8310_32A	AA017703	06:01		ICC846-20
No	7	7	8310_32A	AA017704	07:01		IC846-30
No	8	8	8310_32A	AA017705	08:01		IC846-40
No	9	9	8310_32A	AA017706	09:01		ICV S1968
No	10	10	8310_32A	AA017707	10:01		OP8651-BS
No	11	11	8310_32A	AA017708	11:01		OP8651-MB
No	12	12	8310_32A	AA017709	12:01		F19667-1
No	13	13	8310_32A	AA017710	13:01		F19667-2
No	14	14	8310_32A	AA017711	14:01		F19667-3
No	15	15	8310_32A	AA017712	15:01		F19667-4
No	16	16	8310_32A	AA017713	16:01		F19667-5
No	17	6	8310_32A	AA017714	17:01		CC846-20
No	18	17	8310_32A	AA017715	18:01		F19667-6
No	19	18	8310_32A	AA017716	19:01		F19667-7
No	20	19	8310_32A	AA017717	20:01		F19667-8
No	21	20	8310_32A	AA017718	21:01		F19667-9
No	22	21	8310_32A	AA017719	22:01		F19667-10
No	23	22	8310_32A	AA017720	23:01		F19667-11
No	24	23	8310_32A	AA017721	24:01		F19786-1
No	25	24	8310_32A	AA017722	25:01		F19786-2
No	26	6	8310_32A	AA017723	26:01		CC846-20
No	27	25	8310_32A	AA017724	27:01		F19786-4
No	28	26	8310_32A	AA017725	28:01		F19786-6
No	29	27	8310_32A	AA017726	29:01		F19786-9
No	30	28	8310_32A	AA017727	30:01		F19786-10
No	31	29	8310_32A	AA017728	31:01		F19786-18
No	32	30	8310_32A	AA017729	32:01		OP8651-MS
No	33	31	8310_32A	AA017730	33:01		OP8651-MSD
No	34	32	8310_32A	AA017731	34:01		F19786-19
No	35	6	8310_32A	AA017732	35:01		ECC846-20

Method Blank Summary

Job Number: F20493
Account: TETRPAPT Tetra Tech, NUS
Project: Cecil Field-Site 36/37

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9110-MB	AA018561.D	1	11/21/03	MRE	11/19/03	OP9110	GAA887

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

F20493-1, F20493-2, F20493-3

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	670	170	ug/kg	
208-96-8	Acenaphthylene	ND	670	170	ug/kg	
120-12-7	Anthracene	ND	330	170	ug/kg	
56-55-3	Benzo(a)anthracene	ND	330	83	ug/kg	
50-32-8	Benzo(a)pyrene	ND	67	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	67	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	67	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	67	17	ug/kg	
218-01-9	Chrysene	ND	330	83	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	67	17	ug/kg	
206-44-0	Fluoranthene	ND	330	83	ug/kg	
86-73-7	Fluorene	ND	330	170	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	67	17	ug/kg	
91-20-3	Naphthalene	ND	330	83	ug/kg	
90-12-0	1-Methylnaphthalene	ND	330	83	ug/kg	
91-57-6	2-Methylnaphthalene	ND	330	83	ug/kg	
85-01-8	Phenanthrene	ND	330	170	ug/kg	
129-00-0	Pyrene	ND	330	83	ug/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	101%	38-139%
92-94-4	p-Terphenyl	103%	46-149%

Method Blank Summary

Job Number: F20493
Account: TETRPAPT Tetra Tech, NUS
Project: Cecil Field-Site 36/37

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9110-MB	AA018589.D	1	11/23/03	MRE	11/19/03	OP9110	GAA888

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

F20493-1, F20493-2, F20493-3

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	670	170	ug/kg	
208-96-8	Acenaphthylene	ND	670	170	ug/kg	
120-12-7	Anthracene	ND	330	170	ug/kg	
56-55-3	Benzo(a)anthracene	ND	330	83	ug/kg	
50-32-8	Benzo(a)pyrene	ND	67	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	67	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	67	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	67	17	ug/kg	
218-01-9	Chrysene	ND	330	83	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	67	17	ug/kg	
206-44-0	Fluoranthene	ND	330	83	ug/kg	
86-73-7	Fluorene	ND	330	170	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	67	17	ug/kg	
91-20-3	Naphthalene	ND	330	83	ug/kg	
90-12-0	1-Methylnaphthalene	ND	330	83	ug/kg	
91-57-6	2-Methylnaphthalene	ND	330	83	ug/kg	
85-01-8	Phenanthrene	ND	330	170	ug/kg	
129-00-0	Pyrene	ND	330	83	ug/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	103%	38-139%
92-94-4	p-Terphenyl	103%	46-149%

Response Factor Report DAD

Method : C:\HPCHEM\1\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Thu Oct 09 09:29:03 2003
Response via : Initial Calibration

10/9/03

Calibration Files
L1 =AA017700.D L2 =AA017701.D L3 =AA017702.D
L4 =AA017703.D L5 =AA017704.D L6 =AA017705.D

		Compound	L1	L2	L3	L4	L5	L6	Avg		%RSD
1)		Naphthalene	5.085	4.406	4.156	3.969	3.901	3.973	4.248	E5	10.57
2)		Acenaphthylene	1.930	1.665	1.617	1.561	1.540	1.575	1.648	E5	8.80
3)		1-Methyl Naphthalen	3.528	3.490	3.332	3.198	3.135	3.194	3.313	E5	4.99
4)		2-Methyl Naphthalen	3.412	3.562	3.407	3.267	3.212	3.273	3.355	E5	3.86
5)		Acenaphthene	2.307	2.602	2.495	2.404	2.358	2.409	2.429	E5	4.32
6)		Fluorene	1.163	1.009	0.951	0.913	0.894	0.911	0.974	E6	10.43
7)		Phenanthrene	9.727	8.507	8.042	7.723	7.558	7.716	8.212	E5	9.93
8)	S	O-Terphenyl	3.530	3.085	3.028	2.909	2.853	2.923	3.055	E5	8.11
9)		Anthracene	1.104	0.977	0.967	0.937	0.918	0.942	0.974	E5	6.85

----- Quadratic regression ----- Coefficient = 0.9997
Response Ratio = 9854.20403 + 91083.39328 *A + 107.28589 *A^2

10)		Fluoranthene	8.136	7.175	6.781	6.453	6.324	6.451	6.887	E5	9.95
11)		Pyrene	1.289	1.104	1.031	0.970	0.935	0.941	1.045	E6	12.95
12)	S	P-Terphenyl	1.412	1.242	1.177	1.121	1.096	1.118	1.194	E6	9.98
13)		Benzo(a)Anthracene	2.243	1.948	1.837	1.742	1.696	1.723	1.865	E6	11.10
14)		Chrysene		2.667	2.451	2.253	2.130	2.091	2.319	E6	10.35
15)		Benzo(b)Fluoranthen	1.178	1.038	0.972	0.946	0.910	0.930	0.996	E6	10.03
16)		Benzo(k)Fluoranthen	7.222	6.146	5.771	5.600	5.361	5.488	5.931	E5	11.61
17)		Benzo(a) Pyrene	1.395	1.193	1.122	1.078	1.053	1.076	1.153	E6	11.15
18)		Dibenzo(a,h)anthrac	1.085	0.932	0.867	0.826	0.809	0.823	0.890	E6	11.82
19)		Benzo(g,h,i) Peryle	7.930	6.521	6.052	5.801	5.690	5.830	6.304	E5	13.47
20)		Indeno(1,2,3-cd)pyr	6.269	5.038	4.700	4.513	4.427	4.531	4.913	E5	14.22

Signal #2

1)		Naphthalene	2.995	2.537	2.435	2.333	2.293	2.300	2.482	E5	10.81
2)		Acenaphthylene	1.817	1.632	1.557	1.532	1.512	1.478	1.588	E5	7.77
3)		1-Methyl Naphthalen	1.539	1.259	1.374	1.360	1.337	1.298	1.361	E5	7.10
4)		2-Methyl Naphthalen	2.329	1.838	1.992	1.955	1.930	1.891	1.989	E5	8.77
5)		Acenaphthene	6.791	6.891	7.872	7.979	7.870	7.475	7.480	E4	7.01
6)		Fluorene	1.315	1.119	1.047	1.016	0.999	0.998	1.082	E6	11.31
7)		Phenanthrene	3.409	2.956	2.747	2.607	2.530	2.542	2.799	E6	12.11
8)	S	O-Terphenyl	6.041	5.307	5.031	4.862	4.766	4.808	5.136	E5	9.45
9)		Anthracene	7.532	6.442	5.773	5.190	4.777	4.528	5.707	E6	19.82

----- Quadratic regression ----- Coefficient = 0.9997
Response Ratio = 798433.71330 + 5749740.86363 *A + -64251.97408 *A^2

10)		Fluoranthene	7.880	6.932	6.687	6.482	6.365	6.456	6.800	E5	8.33
11)		Pyrene	7.489	6.260	5.902	5.721	5.609	5.713	6.116	E5	11.62
12)	S	P-Terphenyl	7.150	6.089	5.790	5.554	5.435	5.549	5.928	E5	10.84
13)		Benzo(a)Anthracene	1.670	1.450	1.375	1.323	1.299	1.328	1.407	E6	9.89
14)		Chrysene	2.462	2.112	2.003	1.913	1.868	1.896	2.042	E6	10.97
15)		Benzo(b)Fluoranthen	1.121	0.942	0.898	0.851	0.832	0.849	0.916	E6	11.85
16)		Benzo(k)Fluoranthen	1.654	1.432	1.350	1.285	1.259	1.286	1.378	E6	10.82
17)		Benzo(a) Pyrene	1.094	0.897	0.826	0.781	0.759	0.769	0.854	E6	15.00
18)		Dibenzo(a,h)anthrac	2.720	2.351	2.170	2.034	1.960	1.961	2.199	E6	13.43
19)		Benzo(g,h,i) Peryle	1.281	1.089	1.003	0.956	0.937	0.956	1.037	E6	10.98
20)		Indeno(1,2,3-cd)pyr	8.424	6.996	6.796	6.498	6.377	6.500	6.932	E5	11.05

(#) = Out of Range

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\1121APAH\AA018554.D\DAD1B.CH Vial: 2
Signal #2 : F:\HPCHEM\1\DATA\1121APAH\AA018554.D\DAD1A.CH
Acq On : 21-Nov-2003, 14:20:29 Operator: MIKEE
Sample : CC846-10 Inst : DAD
Misc : op9110,gaa887,30.0,,,5,,soil 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 : Mon Nov 24 10:13:06 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	10.149	-1.5	104	0.02
2		Acenaphthylene	10.000	10.259	-2.6	105	0.02
3		1-Methyl Naphthalene	10.000	10.395	-3.9	103	0.01
4		2-Methyl Naphthalene	10.000	10.487	-4.9	103	0.01
5		Acenaphthene	10.000	11.033	-10.3	107	0.01
6		Fluorene	10.000	10.338	-3.4	106	0.02
7		Phenanthrene	10.000	10.362	-3.6	106	0.02
8	S	O-Terphenyl	10.000	10.635	-6.3	107	0.01
9		Anthracene	5.000	5.500	-10.0	106	0.02
10		Fluoranthene	10.000	10.647	-6.5	108	0.03
11		Pyrene	10.000	10.558	-5.6	107	0.03
12	S	P-Terphenyl	10.000	10.437	-4.4	106	0.03
13		Benzo(a)Anthracene	5.000	5.176	-3.5	105	0.03
14		Chrysene	5.000	5.716	-14.3	108	0.04
15		Benzo(b)Fluoranthene	5.000	5.217	-4.3	107	0.02
16		Benzo(k)Fluoranthene	5.000	5.202	-4.0	107	0.02
17		Benzo(a) Pyrene	5.000	5.265	-5.3	108	0.02
18		Dibenzo(a,h)anthracene	5.000	5.221	-4.4	107	0.02
19		Benzo(g,h,i) Perylene	5.000	5.189	-3.8	108	0.02
20		Indeno(1,2,3-cd)pyrene	5.000	5.482	-9.6	115	0.02

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	10.000	10.213	-2.1	104	0.02
2		Acenaphthylene	10.000	10.396	-4.0	106	0.02
3		1-Methyl Naphthalene	10.000	10.534	-5.3	104	0.01
4		2-Methyl Naphthalene	10.000	10.410	-4.1	104	0.01
5		Acenaphthene	10.000	11.557	-15.6#	110	0.01
6		Fluorene	10.000	10.234	-2.3	106	0.02
7		Phenanthrene	10.000	10.396	-4.0	106	0.02
8	S	O-Terphenyl	10.000	10.669	-6.7	109	0.01
9		Anthracene	5.000	5.578	-11.6	107	0.02
10		Fluoranthene	10.000	10.814	-8.1	110	0.03
11		Pyrene	10.000	10.389	-3.9	108	0.03
12	S	P-Terphenyl	10.000	10.474	-4.7	107	0.03
13		Benzo(a)Anthracene	5.000	5.198	-4.0	106	0.03
14		Chrysene	5.000	5.381	-7.6	110	0.04
15		Benzo(b)Fluoranthene	5.000	5.177	-3.5	106	0.02
16		Benzo(k)Fluoranthene	5.000	5.084	-1.7	104	0.02
17		Benzo(a) Pyrene	5.000	5.096	-1.9	105	0.02
18		Dibenzo(a,h)anthracene	5.000	5.188	-3.8	105	0.02

19	Benzo(g,h,i) Perylene	5.000	4.940	1.2	102	0.02
20	Indeno(1,2,3-cd)pyrene	5.000	5.019	-0.4	102	0.02

Average % D = 5.2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
AA017702.D 8310_32.M Mon Nov 24 10:54:29 2003

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\1121APAH\AA018564.D\DAD1B.CH Vial: 3
Signal #2 : F:\HPCHEM\1\DATA\1121APAH\AA018564.D\DAD1A.CH
Acq On : 21-Nov-2003, 17:48:13 Operator: MIKEE
Sample : CC846-20 Inst : DAD
Misc : op9110,gaa887,30.0,,,5,,soil 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 : Mon Nov 24 10:13:06 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	18.746	6.3	100	0.01
2		Acenaphthylene	20.000	19.093	4.5	101	0.00
3		1-Methyl Naphthalene	20.000	19.189	4.1	99	0.00
4		2-Methyl Naphthalene	20.000	19.399	3.0	100	0.00
5		Acenaphthene	20.000	20.419	-2.1	103	0.00
6		Fluorene	20.000	19.042	4.8	102	0.00
7		Phenanthrene	20.000	19.050	4.7	101	0.00
8	S	O-Terphenyl	20.000	19.594	2.0	103	0.00
9		Anthracene	10.000	10.838	-8.4	108	0.01
10		Fluoranthene	20.000	19.299	3.5	103	0.02
11		Pyrene	20.000	19.117	4.4	103	0.01
12	S	P-Terphenyl	20.000	19.130	4.4	102	0.02
13		Benzo(a)Anthracene	10.000	9.445	5.5	101	0.02
14		Chrysene	10.000	10.142	-1.4	104	0.02
15		Benzo(b)Fluoranthene	10.000	9.529	4.7	100	0.00
16		Benzo(k)Fluoranthene	10.000	9.576	4.2	101	0.00
17		Benzo(a) Pyrene	10.000	9.540	4.6	102	0.00
18		Dibenzo(a,h)anthracene	10.000	9.536	4.6	103	0.00
19		Benzo(g,h,i) Perylene	10.000	9.416	5.8	102	0.00
20		Indeno(1,2,3-cd)pyrene	10.000	9.728	2.7	106	0.00

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.763	6.2	100	0.01
2		Acenaphthylene	20.000	19.306	3.5	100	0.00
3		1-Methyl Naphthalene	20.000	19.895	0.5	100	0.00
4		2-Methyl Naphthalene	20.000	19.585	2.1	100	0.00
5		Acenaphthene	20.000	22.482	-12.4	105	0.00
6		Fluorene	20.000	18.977	5.1	101	0.00
7		Phenanthrene	20.000	18.810	6.0	101	0.00
8	S	O-Terphenyl	20.000	19.777	1.1	104	0.00
9		Anthracene	10.000	10.378	-3.8	103	0.01
10		Fluoranthene	20.000	19.926	0.4	105	0.02
11		Pyrene	20.000	19.205	4.0	103	0.01
12	S	P-Terphenyl	20.000	19.095	4.5	102	0.02
13		Benzo(a)Anthracene	10.000	9.498	5.0	101	0.02
14		Chrysene	10.000	9.744	2.6	104	0.02
15		Benzo(b)Fluoranthene	10.000	9.431	5.7	101	0.00
16		Benzo(k)Fluoranthene	10.000	9.334	6.7	100	0.00
17		Benzo(a) Pyrene	10.000	9.284	7.2	102	0.00
18		Dibenzo(a,h)anthracene	10.000	9.353	6.5	101	0.00

19	Benzo(g,h,i) Perylene	10.000	8.959	10.4	97	0.00
20	Indeno(1,2,3-cd)pyrene	10.000	8.942	10.6	95	0.00

Average % D = 4.7

(#) = Out of Range SPCC's out = 0 CCC's out = 0
AA017703.D 8310_32.M Mon Nov 24 10:53:51 2003

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\1121APAH\AA018575.D\DAD1B.CH Vial: 3
Signal #2 : F:\HPCHEM\1\DATA\1121APAH\AA018575.D\DAD1A.CH
Acq On : 21-Nov-2003, 21:36:52
Sample : CC846-20
Misc : op9110,gaa887,30.0,,,5,,soil
IntFile Signal #1: events.e IntFile Signal #2: events2.e

Operator: MIKEE
Inst : DAD
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8310_32.M (Chemstation Integrator)
Title : PAH's BY EPA 8310
Last Update : Mon Nov 24 10:13:06 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	18.624	6.9	100	0.00
2		Acenaphthylene	20.000	19.030	4.8	100	0.00
3		1-Methyl Naphthalene	20.000	19.052	4.7	99	0.00
4		2-Methyl Naphthalene	20.000	19.319	3.4	99	0.00
5		Acenaphthene	20.000	20.373	-1.9	103	-0.01
6		Fluorene	20.000	18.991	5.0	101	0.00
7		Phenanthrene	20.000	18.976	5.1	101	0.00
8	S	O-Terphenyl	20.000	19.617	1.9	103	0.00
9		Anthracene	10.000	10.756	-7.6	107	0.00
10		Fluoranthene	20.000	19.268	3.7	103	0.00
11		Pyrene	20.000	19.100	4.5	103	0.00
12	S	P-Terphenyl	20.000	19.145	4.3	102	0.02
13		Benzo(a)Anthracene	10.000	9.458	5.4	101	0.02
14		Chrysene	10.000	10.173	-1.7	105	0.02
15		Benzo(b)Fluoranthene	10.000	9.533	4.7	100	0.00
16		Benzo(k)Fluoranthene	10.000	9.557	4.4	101	0.00
17		Benzo(a) Pyrene	10.000	9.555	4.5	102	0.00
18		Dibenzo(a,h)anthracene	10.000	9.559	4.4	103	0.00
19		Benzo(g,h,i) Perylene	10.000	9.430	5.7	102	0.00
20		Indeno(1,2,3-cd)pyrene	10.000	9.799	2.0	107	0.00

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.597	7.0	99	0.00
2		Acenaphthylene	20.000	18.916	5.4	98	0.00
3		1-Methyl Naphthalene	20.000	19.090	4.6	96	0.00
4		2-Methyl Naphthalene	20.000	18.959	5.2	96	0.00
5		Acenaphthene	20.000	21.142	-5.7	99	-0.01
6		Fluorene	20.000	18.611	6.9	99	0.00
7		Phenanthrene	20.000	18.663	6.7	100	0.00
8	S	O-Terphenyl	20.000	19.539	2.3	103	0.00
9		Anthracene	10.000	10.332	-3.3	103	0.00
10		Fluoranthene	20.000	19.798	1.0	104	0.00
11		Pyrene	20.000	19.156	4.2	102	0.00
12	S	P-Terphenyl	20.000	19.167	4.2	102	0.02
13		Benzo(a)Anthracene	10.000	9.547	4.5	102	0.02
14		Chrysene	10.000	9.827	1.7	105	0.02
15		Benzo(b)Fluoranthene	10.000	9.413	5.9	101	0.00
16		Benzo(k)Fluoranthene	10.000	9.350	6.5	100	0.00
17		Benzo(a) Pyrene	10.000	9.322	6.8	102	0.00
18		Dibenzo(a,h)anthracene	10.000	9.344	6.6	101	0.00

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19	Benzo(g,h,i) Perylene	10.000	9.042	9.6	98	0.00
20	Indeno(1,2,3-cd)pyrene	10.000	9.077	9.2	97	0.00

Average % D = 4.8

(#) = Out of Range SPCC's out = 0 CCC's out = 0

AA017703.D 8310_32.M Mon Nov 24 10:53:52 2003

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\1121APAH\AA018586.D\DAD1B.CH Vial: 3
Signal #2 : F:\HPCHEM\1\DATA\1121APAH\AA018586.D\DAD1A.CH
Acq On : 22-Nov-2003, 01:25:41 Operator: MIKEE
Sample : ECC846-20 Inst : DAD
Misc : op9110,gaa887,30.0,,,5,,soil 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 : Mon Nov 24 10:13:06 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	18.582	7.1	99	0.00
2		Acenaphthylene	20.000	18.994	5.0	100	0.00
3		1-Methyl Naphthalene	20.000	19.068	4.7	99	-0.01
4		2-Methyl Naphthalene	20.000	19.342	3.3	99	-0.02
5		Acenaphthene	20.000	20.391	-2.0	103	-0.02
6		Fluorene	20.000	19.031	4.8	101	-0.02
7		Phenanthrene	20.000	18.983	5.1	101	-0.01
8	S	O-Terphenyl	20.000	19.671	1.6	103	-0.01
9		Anthracene	10.000	10.733	-7.3	107	0.00
10		Fluoranthene	20.000	19.285	3.6	103	0.00
11		Pyrene	20.000	19.095	4.5	103	0.00
12	S	P-Terphenyl	20.000	19.164	4.2	102	0.00
13		Benzo(a)Anthracene	10.000	9.448	5.5	101	0.01
14		Chrysene	10.000	10.176	-1.8	105	0.01
15		Benzo(b)Fluoranthene	10.000	9.554	4.5	101	0.00
16		Benzo(k)Fluoranthene	10.000	9.584	4.2	102	0.00
17		Benzo(a) Pyrene	10.000	9.535	4.6	102	0.00
18		Dibenzo(a,h)anthracene	10.000	9.571	4.3	103	0.00
19		Benzo(g,h,i) Perylene	10.000	9.475	5.3	103	0.00
20		Indeno(1,2,3-cd)pyrene	10.000	9.880	1.2	108	0.00

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.802	6.0	100	0.00
2		Acenaphthylene	20.000	19.686	1.6	102	0.00
3		1-Methyl Naphthalene	20.000	20.133	-0.7	101	-0.01
4		2-Methyl Naphthalene	20.000	19.705	1.5	100	-0.02
5		Acenaphthene	20.000	22.817	-14.1	107	-0.02
6		Fluorene	20.000	19.043	4.8	101	-0.02
7		Phenanthrene	20.000	18.776	6.1	101	-0.01
8	S	O-Terphenyl	20.000	19.926	0.4	105	-0.01
9		Anthracene	10.000	10.400	-4.0	103	0.00
10		Fluoranthene	20.000	20.005	-0.0	105	0.00
11		Pyrene	20.000	19.254	3.7	103	0.00
12	S	P-Terphenyl	20.000	19.115	4.4	102	0.00
13		Benzo(a)Anthracene	10.000	9.520	4.8	101	0.01
14		Chrysene	10.000	9.842	1.6	105	0.01
15		Benzo(b)Fluoranthene	10.000	9.433	5.7	101	0.00
16		Benzo(k)Fluoranthene	10.000	9.369	6.3	100	0.00
17		Benzo(a) Pyrene	10.000	9.349	6.5	102	0.00
18		Dibenzo(a,h)anthracene	10.000	9.335	6.6	101	0.00

19	Benzo(g,h,i) Perylene	10.000	9.025	9.7	98	0.00
20	Indeno(1,2,3-cd)pyrene	10.000	9.138	8.6	97	0.00

Average % D = 4.5

(#) = Out of Range SPCC's out = 0 CCC's out = 0
AA017703.D 8310_32.M Mon Nov 24 10:53:53 2003

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\1123PAH\AA018588.D\DAD1B.CH Vial: 2
Signal #2 : F:\HPCHEM\1\DATA\1123PAH\AA018588.D\DAD1A.CH
Acq On : 23-Nov-2003, 11:20:59 Operator: MIKEE
Sample : CC846-10 Inst : DAD
Misc : op9110,gaa888,30.0,,,5,,soil 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 : Mon Nov 24 10:13:06 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	10.176	-1.8	104	0.00
2		Acenaphthylene	10.000	10.315	-3.1	105	0.00
3		1-Methyl Naphthalene	10.000	10.629	-6.3	106	0.00
4		2-Methyl Naphthalene	10.000	10.677	-6.8	105	-0.01
5		Acenaphthene	10.000	11.124	-11.2	108	0.00
6		Fluorene	10.000	10.451	-4.5	107	-0.01
7		Phenanthrene	10.000	10.558	-5.6	108	0.00
8	S	O-Terphenyl	10.000	10.709	-7.1	108	0.00
9		Anthracene	5.000	5.543	-10.9	107	0.00
10		Fluoranthene	10.000	10.953	-9.5	111	0.00
11		Pyrene	10.000	10.635	-6.3	108	0.00
12	S	P-Terphenyl	10.000	10.634	-6.3	108	0.00
13		Benzo(a)Anthracene	5.000	5.291	-5.8	107	0.02
14		Chrysene	5.000	5.656	-13.1	107	0.02
15		Benzo(b)Fluoranthene	5.000	5.274	-5.5	108	0.00
16		Benzo(k)Fluoranthene	5.000	5.212	-4.2	107	0.00
17		Benzo(a) Pyrene	5.000	5.375	-7.5	110	0.00
18		Dibenzo(a,h)anthracene	5.000	5.213	-4.3	107	0.00
19		Benzo(g,h,i) Perylene	5.000	5.177	-3.5	108	0.00
20		Indeno(1,2,3-cd)pyrene	5.000	5.159	-3.2	108	0.00

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	10.000	10.284	-2.8	105	0.00
2		Acenaphthylene	10.000	10.682	-6.8	109	0.00
3		1-Methyl Naphthalene	10.000	11.029	-10.3	109	0.00
4		2-Methyl Naphthalene	10.000	10.766	-7.7	108	-0.01
5		Acenaphthene	10.000	12.005	-20.1#	114	0.00
6		Fluorene	10.000	10.403	-4.0	108	-0.01
7		Phenanthrene	10.000	10.575	-5.7	108	0.00
8	S	O-Terphenyl	10.000	10.624	-6.2	108	0.00
9		Anthracene	5.000	5.579	-11.6	107	0.00
10		Fluoranthene	10.000	11.039	-10.4	112	0.00
11		Pyrene	10.000	10.566	-5.7	109	0.00
12	S	P-Terphenyl	10.000	10.595	-6.0	108	0.00
13		Benzo(a)Anthracene	5.000	5.287	-5.7	108	0.02
14		Chrysene	5.000	5.276	-5.5	108	0.02
15		Benzo(b)Fluoranthene	5.000	5.271	-5.4	107	0.00
16		Benzo(k)Fluoranthene	5.000	5.269	-5.4	108	0.00
17		Benzo(a) Pyrene	5.000	5.389	-7.8	112	0.00
18		Dibenzo(a,h)anthracene	5.000	5.303	-6.1	107	0.00

19	Benzo(g,h,i) Perylene	5.000	5.243	-4.9	108	0.00
20	Indeno(1,2,3-cd)pyrene	5.000	5.287	-5.7	108	0.00

Average % D = 6.8

(#) = Out of Range
AA017702.D 8310_32.M

SPCC's out = 0 CCC's out = 0
Mon Nov 24 11:20:15 2003

Evaluate Continuing Calibration Report

Signal #1 : F:\HPCHEM\1\DATA\1123PAH\AA018596.D\DAD1B.CH Vial: 3
Signal #2 : F:\HPCHEM\1\DATA\1123PAH\AA018596.D\DAD1A.CH
Acq On : 23-Nov-2003, 14:07:08 Operator: MIKEE
Sample : ECC846-20 Inst : DAD
Misc : op9110,gaa888,30.0,,,5,,soil 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 : Mon Nov 24 10:13:06 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	18.654	6.7	100	0.00
2		Acenaphthylene	20.000	19.111	4.4	101	0.00
3		1-Methyl Naphthalene	20.000	19.417	2.9	101	-0.02
4		2-Methyl Naphthalene	20.000	19.480	2.6	100	-0.02
5		Acenaphthene	20.000	20.258	-1.3	102	-0.02
6		Fluorene	20.000	18.986	5.1	101	-0.02
7		Phenanthrene	20.000	19.119	4.4	102	-0.02
8	S	O-Terphenyl	20.000	19.477	2.6	102	-0.02
9		Anthracene	10.000	10.180	-1.8	101	-0.01
10		Fluoranthene	20.000	19.455	2.7	104	0.00
11		Pyrene	20.000	18.812	5.9	101	0.00
12	S	P-Terphenyl	20.000	19.119	4.4	102	0.00
13		Benzo(a)Anthracene	10.000	9.480	5.2	101	0.00
14		Chrysene	10.000	9.889	1.1	102	0.01
15		Benzo(b)Fluoranthene	10.000	9.507	4.9	100	0.00
16		Benzo(k)Fluoranthene	10.000	9.408	5.9	100	0.00
17		Benzo(a) Pyrene	10.000	9.604	4.0	103	0.00
18		Dibenzo(a,h)anthracene	10.000	9.365	6.3	101	0.00
19		Benzo(g,h,i) Perylene	10.000	9.286	7.1	101	0.00
20		Indeno(1,2,3-cd)pyrene	10.000	9.229	7.7	100	-0.01

Signal #2

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1		Naphthalene	20.000	18.747	6.3	100	0.00
2		Acenaphthylene	20.000	19.186	4.1	99	0.00
3		1-Methyl Naphthalene	20.000	19.762	1.2	99	-0.02
4		2-Methyl Naphthalene	20.000	19.296	3.5	98	-0.02
5		Acenaphthene	20.000	21.315	-6.6	100	-0.02
6		Fluorene	20.000	18.734	6.3	100	-0.02
7		Phenanthrene	20.000	18.849	5.8	101	-0.02
8	S	O-Terphenyl	20.000	19.223	3.9	102	-0.02
9		Anthracene	10.000	10.120	-1.2	101	-0.01
10		Fluoranthene	20.000	19.804	1.0	104	0.00
11		Pyrene	20.000	19.083	4.6	102	0.00
12	S	P-Terphenyl	20.000	19.087	4.6	102	0.00
13		Benzo(a)Anthracene	10.000	9.528	4.7	101	0.00
14		Chrysene	10.000	9.472	5.3	101	0.01
15		Benzo(b)Fluoranthene	10.000	9.478	5.2	102	0.00
16		Benzo(k)Fluoranthene	10.000	9.484	5.2	102	0.00
17		Benzo(a) Pyrene	10.000	9.529	4.7	104	0.00
18		Dibenzo(a,h)anthracene	10.000	9.422	5.8	102	0.00

19	Benzo(g,h,i) Perylene	10.000	9.428	5.7	102	0.00
20	Indeno(1,2,3-cd)pyrene	10.000	9.506	4.9	101	-0.02

Average % D = 4.4

(#) = Out of Range
AA017703.D 8310_32.M

SPCC's out = 0 CCC's out = 0
Mon Nov 24 11:20:34 2003

Sequence Name: C:\HPCHEM\2\SEQUENCE\1113PRO.S
Comment: gop1108
Operator: sarahm
Data Path: C:\HPCHEM\2\DATA\1113PRO\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	OP33196	FL_PRO_F	cc1094-1020
2	Sample	2	OP33197	FL_PRO_F	cc1094-340
3	Sample	3	OP33198	FL_PRO_F	solv
4	Sample	4	OP33199	FL_PRO_F	e1410 2x
5	Sample	5	OP33200	FL_PRO_F	op9061-bs
6	Sample	6	OP33201	FL_PRO_F	op9061-mb
7	Sample	7	OP33202	FL_PRO_F	f20553-1
8	Sample	8	OP33203	FL_PRO_F	f20553-2
9	Sample	9	OP33204	FL_PRO_F	f20553-3
10	Sample	10	OP33205	FL_PRO_F	f20553-4
11	Sample	11	OP33206	FL_PRO_F	f20553-4,2
12	Sample	12	OP33207	FL_PRO_F	f20553-5
13	Sample	1	OP33208	FL_PRO_F	cc1094-1020
14	Sample	13	OP33209	FL_PRO_F	f20553-6,10
15	Sample	14	OP33210	FL_PRO_F	f20553-7,80
16	Sample	15	OP33211	FL_PRO_F	f20493-1,10
17	Sample	16	OP33212	FL_PRO_F	f20493-2,4
18	Sample	17	OP33213	FL_PRO_F	f20493-3,2
19	Sample	18	OP33214	FL_PRO_F	op9061-ms,2
20	Sample	19	OP33215	FL_PRO_F	op9061-msd,2
21	Sample	20	OP33216	FL_PRO_F	f20501-1,4
22	Sample	21	OP33217	FL_PRO_F	f20502-1,4
23	Sample	1	OP33218	FL_PRO_F	cc1094-1020
24	Sample	22	OP33219	FL_PRO_F	f20511-1,400
25	Sample	23	OP33220	FL_PRO_F	f20511-3,500
26	Sample	24	OP33221	FL_PRO_F	f20519-8
27	Sample	1	OP33222	FL_PRO_F	ecc1094-1020

Sequence Name: C:\HPCHEM\2\SEQUENCE\1027PRO.S
Comment: gop1094
Operator: sarahm
Data Path: C:\HPCHEM\2\DATA\1027PRO\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	OP32707	FL_PRO_F	ic1094-340
2	Sample	2	OP32708	FL_PRO_F	ic1094-680
3	Sample	3	OP32709	FL_PRO_F	icc1094-1020
4	Sample	4	OP32710	FL_PRO_F	ic1094-1360
5	Sample	5	OP32711	FL_PRO_F	ic1094-1700
6	Sample	6	OP32712	FL_PRO_F	ic1094-2125
7	Sample	7	OP32713	FL_PRO_F	ic1094-4250
8	Sample	8	OP32714	FL_PRO_F	e1367 icv
9	Sample	9	OP32715	FL_PRO_F	solvent blank
10	Sample	10	OP32716	FL_PRO_F	op8904-bs
11	Sample	11	OP32717	FL_PRO_F	op8904-mb
12	Sample	12	OP32718	FL_PRO_F	f20244-1
13	Sample	13	OP32719	FL_PRO_F	f20251-3,5
14	Sample	14	OP32720	FL_PRO_F	f20251-4
15	Sample	15	OP32721	FL_PRO_F	f20251-5
16	Sample	16	OP32722	FL_PRO_F	op8904-ms
17	Sample	17	OP32723	FL_PRO_F	op8904-msd
18	Sample	18	OP32724	FL_PRO_F	f20251-6
19	Sample	19	OP32725	FL_PRO_F	f20251-7
20	Sample	20	OP32726	FL_PRO_F	cc1094-1020
21	Sample	21	OP32727	FL_PRO_F	f20251-8
22	Sample	22	OP32728	FL_PRO_F	f20251-9
23	Sample	23	OP32729	FL_PRO_F	f20251-10,10
24	Sample	24	OP32730	FL_PRO_F	f20203-8
25	Sample	25	OP32731	FL_PRO_F	f20203-9
26	Sample	26	OP32732	FL_PRO_F	f20205-1
27	Sample	27	OP32733	FL_PRO_F	f20206-2
28	Sample	28	OP32734	FL_PRO_F	f20224-1
29	Sample	29	OP32735	FL_PRO_F	f20224-2
30	Sample	20	OP32736	FL_PRO_F	ecc1094-1020

Screen Run
DNR.

09423

Last Modified: Mon Oct 27 15:22:07 2003

Method Blank Summary

Job Number: F20493
Account: TETRPAPT Tetra Tech, NUS
Project: Cecil Field-Site 36/37

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9061-MB	OP33201.D	1	11/13/03	SM	11/12/03	OP9061	GOP1108

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

F20493-1, F20493-2, F20493-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	8.3	5.7	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	92%	59-121%

Response Factor Report FID 2

Method : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title : TPH by FL_PRO
Last Update : Mon Oct 27 14:08:59 2003
Response via : Initial Calibration

Calibration Files
1 =OP32707.D 2 =OP32708.D 3 =OP32709.D
4 =OP32710.D 5 =OP32711.D 6 =OP32712.D 7 =OP32713.D

Compound	1	2	3	4	5	6	7	Avg	%RSD
1)S O-TERPHENYL	2.815	2.753	2.704	2.687	2.747			2.741 E4	1.82
2)H TPH (C8-C40)	2.562	2.475	2.419	2.399	2.447	2.096	2.161	2.365 E4	7.23

Average % RSD = 4.5

(#) = Out of Range

FL_PRO_F.M Mon Oct 27 14:23:42 2003

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\2\DATA\1113PRO\OP33208.D
Acq On : 13 Nov 2003 4:15 pm
Sample : cc1094-1020
Misc : op9061,gop1108,30.2,,,1,1,soil
IntFile : events.e

Vial: 1
Operator: sarahm
Inst : FID 2
Multiplr: 1.00

Method : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title : TPH by FL_PRO
Last Update : Fri Nov 14 07:55:38 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	66.390	-10.7	112	0.00
2 H	TPH (C8-C40)	1020.000	1177.188	-15.4	113	0.00

Average % D = 13.0

(#) = Out of Range
OP32709.D FL_PRO_F.M

SPCC's out = 0 CCC's out = 0
Fri Nov 14 08:02:55 2003

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\2\DATA\1113PRO\OP33218.D
Acq On : 13 Nov 2003 7:43 pm
Sample : cc1094-1020
Misc : op9061,gop1108,30.4,,,1,4,soil
IntFile : events.e

Vial: 1
Operator: sarahm
Inst : FID 2
Multiplr: 1.00

Method : C:\HPCHEM\2\METHODS\FL_PRO_F.M (Chemstation Integrator)
Title : TPH by FL_PRO
Last Update : Fri Nov 14 07:55:38 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	67.215	-12.0	114	0.00
2 H	TPH (C8-C40)	1020.000	1189.279	-16.6	114	0.00

Average % D = 14.3

(#) = Out of Range SPCC's out = 0 CCC's out = 0
OP32709.D FL_PRO_F.M Fri Nov 14 08:02:56 2003

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	M. SPERANZA	DATE:	JANUARY 31, 2005
FROM:	BERNARD F SPADA III	COPIES:	DV FILE
SUBJECT:	ORGANIC DATA VALIDATION- VOC/PAH/TPH CTO 078, NAS CECIL FIELD SDG F28473/F28239		
SAMPLES:	3/Soil		

CEF-P49-SS-803-02 CEF-P49-SS-812-02 CEF-037-SU-CS-3-5

OVERVIEW

The sample set for CTO 078, NAS Cecil Field, SDGs F28473/F28239 consist of three (3) environmental soil samples. Samples CEF-P49-SS-803-02 and CEF-P49-SS-812-02 were analyzed for polynuclear aromatic hydrocarbons (PAH) and sample CEF-037-SU-CS-3-5 was analyzed for 1,2,4-timethylbenzene, m+p-xylenes and total petroleum hydrocarbons (TPH).

The samples were collected by TetraTech NUS on November 17 and 30, 2004 and analyzed by Accutest Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B and 8310 and Florida-PRO analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

- Data completeness
- * Holding times
- * Initial and continuing calibration
- * Laboratory method and field quality control blank results
- * Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A.

VOC

The laboratory did not include the continuing calibration (CCAL) summary for the CCAL performed on December 1 at 12:32 in the data package. The laboratory was requested to submit the CCAL summary. The laboratory submitted the CCAL summary upon request. No action was taken on this basis.

PAH

No qualifications were assigned to this fraction.

TPH

The MS/MSD exceeded the percent recovery quality control criterion for TPH. No action was taken on this basis because the un-spiked sample was not associated with this SDG.

TO: **M. SPERANZA – PAGE 2**
DATE: **JANUARY 31, 2005**

EXECUTIVE SUMMARY

Laboratory Performance Issues: 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 (10/99) and the NFESC guidelines (September, 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

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

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

PROJ_NO: 0039

SDG: F28473 MEDIA: SOIL DATA FRACTION: PAH

nsample	CEF-P49-SS-803-02	nsample	CEF-P49-SS-812-02
samp_date	11/30/2004	samp_date	11/30/2004
lab_id	F28473-2	lab_id	F28473-1
qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG
Pct_Solids	78.1	Pct_Solids	93.0
DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	110	U	
2-METHYLNAPHTHALENE	110	U	
ACENAPHTHENE	210	U	
ACENAPHTHYLENE	210	U	
ANTHRACENE	210	U	
BENZO(A)ANTHRACENE	110	U	
BENZO(A)PYRENE	21	U	
BENZO(B)FLUORANTHENE	21	U	
BENZO(G,H,I)PERYLENE	21	U	
BENZO(K)FLUORANTHENE	21	U	
CHRYSENE	110	U	
DIBENZO(A,H)ANTHRACENE	21	U	
FLUORANTHENE	110	U	
FLUORENE	210	U	
INDENO(1,2,3-CD)PYRENE	21	U	
NAPHTHALENE	110	U	
PHENANTHRENE	210	U	
PYRENE	110	U	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	88	U	
2-METHYLNAPHTHALENE	88	U	
ACENAPHTHENE	180	U	
ACENAPHTHYLENE	180	U	
ANTHRACENE	180	U	
BENZO(A)ANTHRACENE	88	U	
BENZO(A)PYRENE	18	U	
BENZO(B)FLUORANTHENE	18	U	
BENZO(G,H,I)PERYLENE	18	U	
BENZO(K)FLUORANTHENE	18	U	
CHRYSENE	88	U	
DIBENZO(A,H)ANTHRACENE	18	U	
FLUORANTHENE	88	U	
FLUORENE	180	U	
INDENO(1,2,3-CD)PYRENE	18	U	
NAPHTHALENE	88	U	
PHENANTHRENE	180	U	
PYRENE	88	U	

PROJ_NO: 0039

SDG: F28239 MEDIA: SOIL DATA FRACTION: OV

nsample	CEF-037-SU-CS-3-5
samp_date	11/17/2004
lab_id	F28239-1
qc_type	NM
units	UG/KG
Pct_Solids	80.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRIMETHYLBENZENE	1.8	U	
M+P-XYLENES	2.3	U	

PROJ_NO: 0039

SDG: F28239 MEDIA: SOIL DATA FRACTION: PET

nsample	CEF-037-SU-CS-3-5
samp_date	11/17/2004
lab_id	F28239-1
qc_type	NM
units	MG/KG
Pct_Solids	80.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	66		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-P49-SS-803-02		
Lab Sample ID:	F28473-2	**Date Sampled:**	11/30/04
Matrix:	SO - Soil	**Date Received:**	12/01/04
Method:	SW846 8310 SW846 3550B	**Percent Solids:**	78.1
Project:	Site 49, NASCF		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE028727.D	1	12/02/04	MRE	12/01/04	OP11966	GEE1130
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	210 U	850	210	ug/kg	
208-96-8	Acenaphthylene	210 U	850	210	ug/kg	
120-12-7	Anthracene	210 U	430	210	ug/kg	
56-55-3	Benzo(a)anthracene	110 U	430	110	ug/kg	
50-32-8	Benzo(a)pyrene	21 U	85	21	ug/kg	
205-99-2	Benzo(b)fluoranthene	21 U	85	21	ug/kg	
191-24-2	Benzo(g,h,i)perylene	21 U	85	21	ug/kg	
207-08-9	Benzo(k)fluoranthene	21 U	85	21	ug/kg	
218-01-9	Chrysene	110 U	430	110	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	21 U	85	21	ug/kg	
206-44-0	Fluoranthene	110 U	430	110	ug/kg	
86-73-7	Fluorene	210 U	430	210	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	21 U	85	21	ug/kg	
91-20-3	Naphthalene	110 U	430	110	ug/kg	
90-12-0	1-Methylnaphthalene	110 U	430	110	ug/kg	
91-57-6	2-Methylnaphthalene	110 U	430	110	ug/kg	
85-01-8	Phenanthrene	210 U	430	210	ug/kg	
129-00-0	Pyrene	110 U	430	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	100%		49-124%
92-94-4	p-Terphenyl	104%		56-141%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-P49-SS-812-02		
Lab Sample ID:	F28473-1	**Date Sampled:**	11/30/04
Matrix:	SO - Soil	**Date Received:**	12/01/04
Method:	SW846 8310 SW846 3550B	**Percent Solids:**	93.0
Project:	Site 49, NASCF		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE028726.D	1	12/02/04	MRE	12/01/04	OP11966	GEE1130
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	180 U	710	180	ug/kg	
208-96-8	Acenaphthylene	180 U	710	180	ug/kg	
120-12-7	Anthracene	180 U	350	180	ug/kg	
56-55-3	Benzo(a)anthracene	88 U	350	88	ug/kg	
50-32-8	Benzo(a)pyrene	18 U	71	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	18 U	71	18	ug/kg	
191-24-2	Benzo(g,h,i)perylene	18 U	71	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	18 U	71	18	ug/kg	
218-01-9	Chrysene	88 U	350	88	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	18 U	71	18	ug/kg	
206-44-0	Fluoranthene	88 U	350	88	ug/kg	
86-73-7	Fluorene	180 U	350	180	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	18 U	71	18	ug/kg	
91-20-3	Naphthalene	88 U	350	88	ug/kg	
90-12-0	1-Methylnaphthalene	88 U	350	88	ug/kg	
91-57-6	2-Methylnaphthalene	88 U	350	88	ug/kg	
85-01-8	Phenanthrene	180 U	350	180	ug/kg	
129-00-0	Pyrene	88 U	350	88	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	90%		49-124%
92-94-4	p-Terphenyl	99%		56-141%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-037-SU-CS-3-5		
Lab Sample ID:	F28239-1	**Date Sampled:**	11/17/04
Matrix:	SO - Soil	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	80.0
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K019544.D	1	12/01/04	NAF	n/a	n/a	VK888
Run #2							

	Initial Weight
Run #1	6.84 g
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-63-6	1,2,4-Trimethylbenzene	1.8 U	4.6	1.8	ug/kg	
	m,p-Xylene	2.3 U	9.1	2.3	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		78-123%
2037-26-5	Toluene-D8	103%		71-137%
460-00-4	4-Bromofluorobenzene	112%		61-157%
17060-07-0	1,2-Dichloroethane-D4	108%		74-125%

000015

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-037-SU-CS-3-5		
Lab Sample ID:	F28239-1	**Date Sampled:**	11/17/04
Matrix:	SO - Soil	**Date Received:**	11/18/04
Method:	FLORIDA-PRO SW846 3550B	**Percent Solids:**	80.0
Project:	Cecil Field-Site 36/37		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP44396.D	1	11/19/04	AA	11/19/04	OP11871	GOP1331
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	66.0	10	7.1	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	85%		59-121%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

APPENDIX C

SUPPORT DOCUMENTATION

SDG F28473

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	CEF-P49-SS-812-02	F28473-1	NM	11/30/2004	12/02/2004	12/02/2004	2	0	2
PCS	%	CEF-P49-SS-803-02	F28473-2	NM	11/30/2004	12/02/2004	12/02/2004	2	0	2
PAH	%	CEF-P49-SS-812-02	F28473-1	NM	11/30/2004	12/01/2004	12/02/2004	1	1	2
PAH	%	CEF-P49-SS-803-02	F28473-2	NM	11/30/2004	12/01/2004	12/02/2004	1	1	2
PAH	UG/KG	CEF-P49-SS-812-02	F28473-1	NM	11/30/2004	12/01/2004	12/02/2004	1	1	2
PAH	UG/KG	CEF-P49-SS-803-02	F28473-2	NM	11/30/2004	12/01/2004	12/02/2004	1	1	2

SDG F28239

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCS	%	CEF-037-SU-CS-3-5	F28239-1	NM	11/17/2004	11/29/2004	11/29/2004	12	0	12
OV	%	CEF-037-SU-CS-3-5	F28239-1	NM	11/17/2004	12/01/2004	12/01/2004	14	0	14
OV	UG/KG	CEF-037-SU-CS-3-5	F28239-1	NM	11/17/2004	12/01/2004	12/01/2004	14	0	14
TPH	MG/KG	CEF-037-SU-CS-3-5	F28239-1	NM	11/17/2004	11/19/2004	11/19/2004	2	0	2

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Tetra Tech NUS **Job No:** F28239

Site: Cecil Field-Site 36/37 **Report Date:** 12/14/2004 6:31:26

1 Sample was collected on 11/17/2004 and was received at Accutest on 11/18/2004 properly preserved, at 2.6 Deg. C and intact. The Sample received an Accutest job number of F28239. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS by Method SW846 8260B

Matrix: SO **Batch ID:** VK888

All samples were analyzed within the recommended method holding time.

Samples F28239-1MS, F28239-1MSD were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

Extractables by GC by Method FLORIDA-PRO

Matrix: SO **Batch ID:** OP11871

All samples were extracted within the recommended method holding time.

Samples F28260-1MS, F28260-1MSD were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

Matrix Spike Recovery for TPH (C8-C40) are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Wet Chemistry by Method EPA 160.3 M

Matrix: SO **Batch ID:** GN16272

Sample F28370-1DUP was used as the QC sample for Solids, Percent.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Date: December 14, 2004

Ellen Pampel, Inorganic QA (signature on file)

Tuesday, December 14, 2004

ACCUTEST LABORATORIES SOUTHEAST SAMPLE RECEIPT CONFIRMATION

Accutest's Job Number: F28239

Client: Tetra Tech. Project: NASCF

Date Received: 11/17/04 Time Received: 18:45

# of Coolers Received: 1 Cooler Temperatures: 2.6

Delivery Method: FedEx UPS (Accutest Courier) Greyhound Delivery Other

Air Bill Number:

Cooler Custody Seals Intact ?	(Yes)	No	
Chain of Custody Provided ?	(Yes)	No	
COC Match Bottle Label ID's ?	(Yes)	No	
Sample Labels Present on all bottles ?	(Yes)	No	
All Analyses Marked On COC ?	(Yes)	No	
Are All Bottles Intact ?	(Yes)	No	
Samples Preserved Correctly ?	(Yes)	No	
Correct Number of Containers Used ?	(Yes)	No	
Sufficient Sample Volume ?	(Yes)	No	
Trip Blank Provided ?	Yes	(No)	
Trip Blank on COC ?	Yes	(No)	
Trip Blank Intact ?	Yes	No	(N/A)
Trip Blank Matrix ?	Soil	Water	(N/A)
Number of Encores ?	Ø		
Number of Soil Field Kits ?	2		

Summary of Comments:

Signature: Date: 11/17/04

Review Signature:

ASBD/HW 05/11/03

000006

TETRA TECH NUS, INC. F282391 CHAIN OF CUSTODY | NUMBER 37-111704 | PAGE 1 OF 1

000008

PROJECT NO: N0039, CT078	FACILITY: SITE 37, NASCF	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916	LABORATORY NAME AND CONTACT: ACCUTEST H. WANDREY
SAMPLERS (SIGNATURE): C Sleat		FIELD OPERATIONS LEADER: MERV DALE	PHONE NUMBER: 904 636 6125	ADDRESS: 4405 Vineland Rd., C-15
		CARRIER/WAYBILL NUMBER: Courier		CITY, STATE: ORLANDO, FL 32811

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

DATE YEAR 2004	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	Select VOCs	Select VOCs	TRPH					COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)									G	G	G					
PRESERVATIVE USED									H_2O	CH_3OH	None					
TYPE OF ANALYSIS									*	*	*					
1	11/17	1200	CEF-037-SA-CS-3-5	CS3	4	5	SO	G	4	✓	✓	✓				Cool to 4°C

Work Release N8925-WR480 (5.5")

* See attached Table 1 for list of analytes and methods.

1. RELINQUISHED BY: Mervin W. Dale	DATE 11/17/04	TIME 1230	1. RECEIVED BY: M. Vil.	DATE 11/17/04	TIME 12:30
2. RELINQUISHED BY: M. Vil.	DATE 11/17/04	TIME 18:45	2. RECEIVED BY: [signature]	DATE 11/19/04	TIME 18:45
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

2.6

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

4/02R

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Tetra Tech NUS **Job No:** F28473

Site: Site 49, NASCF **Report Date** 12/14/2004 2:41:05

2 Samples were collected on 11/30/2004 and were received at Accutest on 12/01/2004 properly preserved, at 2.6 Deg. C and intact. These Samples received an Accutest job number of F28473.A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Extractables by GC By Method SW846 8310

Matrix: SO **Batch ID:** OP11966

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) F28395-1MS, F28395-1MSD were used as the QC samples indicated.

Wet Chemistry By Method EPA 160.3 M

Matrix: SO **Batch ID:** GN16301

Sample(s) F28467-1DUP were used as the QC samples for Solids, Percent.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

Svetlana Izosimova, QAO

Date: December 14, 2004

ACCUTEST LABORATORIES SOUTHEAST SAMPLE RECEIPT CONFIRMATION

Accutest's Job Number: F28473

Client: TETRA TECH Project: N0039 CTO 78

Date Received: 12/1/04 Time Received: 09:00

# of Coolers Received: 1 Cooler Temperatures: 2.6

Delivery Method: (FedEx) UPS Accutest Courier Greyhound Delivery Other

Air Bill Number:

Cooler Custody Seals Intact ?	(Yes)	No	
Chain of Custody Provided ?	(Yes)	No	
COC Match Bottle Label ID's ?	(Yes)	No	
Sample Labels Present on all bottles ?	(Yes)	No	
All Analyses Marked On COC ?	(Yes)	No	
Are All Bottles Intact ?	(Yes)	No	
Samples Preserved Correctly ?	(Yes)	No	
Correct Number of Containers Used ?	(Yes)	No	
Sufficient Sample Volume ?	(Yes)	No	
Trip Blank Provided ?	Yes	(No)	
Trip Blank on COC ?	Yes	(No)	
Trip Blank Intact ?	Yes	No	(N/A)
Trip Blank Matrix ?	Soil	Water	(N/A)

Number of Encores ? Ø

Number of Soil Field Kits ? Ø

Summary of Comments:

Signature: Carlos A Date: 12/1/04

Review Signature:

ASBD 12/30/03

TETRA TECH NUS, INC.

CHAIN OF CUSTODY

F28473

NUMBER 49-1130-4A

PAGE 1 OF 1

PROJECT NO: N0039, CTO 78	FACILITY: SITE 49, NASCF	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916	LABORATORY NAME AND CONTACT: ACCUTEST H. WANDREE
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER: MERV DALE	PHONE NUMBER: 904 636 6125	ADDRESS: 4405 Vineland Rd, Ste C-15
		CARRIER/WAYBILL NUMBER: Fedex 8427 1834 9292		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

PRESERVATIVE USED: None

TYPE OF ANALYSIS: PAHs 8310

DATE YEAR 2004	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	PAHs 8310	COMMENTS
11/30	1440	CEF-P49-SS-812-02				SO	G	1	1	Cool to 4°C
11/30	1451	CEF-P49-SS-803-02				SO	G	1	1	
										Work Release N0039-WR 457 Mod 1

1. RELINQUISHED BY	DATE 11/30/04	TIME 1600	1. RECEIVED BY FX	DATE	TIME
2. RELINQUISHED BY FX	DATE	TIME	2. RECEIVED BY	DATE 12-1-04	TIME 0910
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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

2-6

4/02R

FORM NO. TNUS-001

Instrument Performance Check (BFB)

Job Number: F28239
Account: TETRPAPT Tetra Tech NUS
Project: Cecil Field-Site 36/37

Sample:	VK887-BFB	**Injection Date:**	11/30/04
Lab File ID:	K019529.D	**Injection Time:**	14:46
Instrument ID:	GCMSK		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	9589	19.8		Pass
75	30.0 - 60.0% of mass 95	23637	48.7		Pass
95	Base peak, 100% relative abundance	48539	100.0		Pass
96	5.0 - 9.0% of mass 95	3520	7.3		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 100.0% of mass 95	39947	82.3		Pass
175	5.0 - 9.0% of mass 174	3221	6.6	(8.1) [a]	Pass
176	95.0 - 101.0% of mass 174	39797	82.0	(99.6) [a]	Pass
177	5.0 - 9.0% of mass 176	2482	5.1	(6.2) [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
VK887-IC887	K019532.D	11/30/04	16:34	01:48	Initial cal 5
VK887-IC887	K019533.D	11/30/04	17:09	02:23	Initial cal 10
VK887-IC887	K019534.D	11/30/04	17:44	02:58	Initial cal 20
VK887-ICC887	K019535.D	11/30/04	18:19	03:33	Initial cal 40
VK887-IC887	K019536.D	11/30/04	18:54	04:08	Initial cal 100
VK887-IC887	K019537.D	11/30/04	19:29	04:43	Initial cal 200

Instrument Performance Check (BFB)

Job Number: F28239
Account: TETRPAPT Tetra Tech NUS
Project: Cecil Field-Site 36/37

Sample: VK888-BFB
Lab File ID: K019539.D
Instrument ID: GCMSK
Injection Date: 12/01/04
Injection Time: 12:14

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	5490	22.2		Pass
75	30.0 - 60.0% of mass 95	12852	52.0		Pass
95	Base peak, 100% relative abundance	24693	100.0		Pass
96	5.0 - 9.0% of mass 95	1875	7.6		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 100.0% of mass 95	20235	81.9		Pass
175	5.0 - 9.0% of mass 174	1597	6.5	(7.9) [a]	Pass
176	95.0 - 101.0% of mass 174	20331	82.3	(100.5) [a]	Pass
177	5.0 - 9.0% of mass 176	1519	6.2	(7.5) [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
VK888-CC887	K019540.D	12/01/04	12:32	00:18	Continuing cal 40
VK888-MB	K019542.D	12/01/04	14:52	02:38	Method Blank
VK888-BS	K019543.D	12/01/04	15:27	03:13	Blank Spike
F28239-1	K019544.D	12/01/04	16:03	03:49	CEF-037-SU-CS-3-5
ZZZZZZ	K019545.D	12/01/04	16:46	04:32	(unrelated sample)
F28239-1MS	K019546.D	12/01/04	17:21	05:07	Matrix Spike
F28239-1MSD	K019547.D	12/01/04	17:56	05:42	Matrix Spike Duplicate
ZZZZZZ	K019548.D	12/01/04	18:31	06:17	(unrelated sample)
ZZZZZZ	K019549.D	12/01/04	19:07	06:53	(unrelated sample)
ZZZZZZ	K019550.D	12/01/04	19:42	07:28	(unrelated sample)
ZZZZZZ	K019551.D	12/01/04	20:16	08:02	(unrelated sample)
ZZZZZZ	K019552.D	12/01/04	20:52	08:38	(unrelated sample)
ZZZZZZ	K019553.D	12/01/04	21:26	09:12	(unrelated sample)
ZZZZZZ	K019554.D	12/01/04	22:01	09:47	(unrelated sample)
ZZZZZZ	K019555.D	12/01/04	22:37	10:23	(unrelated sample)

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F28239
Account: TETRPAPT Tetra Tech NUS
Project: Cecil Field-Site 36/37

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11871-MS	OP44436.D	8	11/20/04	AA	11/19/04	OP11871	GOP1331
OP11871-MSD	OP44437.D	8	11/20/04	AA	11/19/04	OP11871	GOP1331
F28260-1 [a]	OP44407.D	1	11/20/04	AA	11/19/04	OP11871	GOP1331

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

F28239-1

CAS No.	Compound	F28260-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C8-C40)	120		29.6	279	537* [b]	237	396* [b]	16	42-131/28

CAS No.	Surrogate Recoveries	MS	MSD	F28260-1	Limits
84-15-1	o-Terphenyl	88%	85%	74%	59-121%

(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
(b) Outside control limits due to high level in sample relative to spike amount.

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