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NAS CECIL FIELD, FL  
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SOURCE REMOVAL REPORT FOR EXCAVATION OF PETROLEUM CONTAMINATED SOIL  
AT BUILDINGS 502 AND 290A NAS CECIL FIELD FL  
11/01/2010  
CH2MHILL CONSTRUCTORS INC

# Source Removal Report Excavation of Petroleum Contaminated Soil at Buildings 502 and 290A

Revision No. 00

Former Naval Air Station Cecil Field  
Jacksonville, Florida

Contract No. N62467-01-D-0331  
Contract Task Order No. 0060

Submitted to

BRAC Program Management Office Southeast  
4130 Faber Place Drive, Suite 202  
North Charleston, SC 29405

Under contract to



U.S. Naval Facilities Engineering Command  
Southeast

Prepared by



1000 Abernathy Road  
Suite 1600  
Atlanta, GA 30328

November 2010

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1000 Abernathy Road  
Suite 1600  
Atlanta, GA 30328

November 2010

Prepared/Approved By:

Jeffery Marks, Project Manager

November 2, 2010

Date

Approved By:

Michael D. Halil, P.E., Senior Project Manager

November 2, 2010

Date

Client Acceptance:

U.S. Navy Responsible Authority

Date



## Certificate of Completion

CH2M HILL Constructors, Inc., attests that, to the best of its knowledge and belief, the excavation of petroleum contaminated soil at Buildings 502 and 290A, delivered under Contract No. N62467-01-D-0331, Contract Task Order No. 0060, Former Naval Air Station Cecil Field, Jacksonville, Florida, has been completed, inspected, and tested, and is in compliance with the contract.

A handwritten signature in black ink, appearing to read "N. H. W. Long".

\_\_\_\_\_  
**Project Quality Control Manager**

\_\_\_\_\_  
November 2, 2010

**Date**

# Contents

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<b>1.0</b>	<b>Introduction.....</b>	<b>1-1</b>
1.1	Site Background.....	1-1
1.2	Project Objectives and Summary .....	1-2
<b>2.0</b>	<b>Excavation Activities.....</b>	<b>2-1</b>
2.1	Site Preparation.....	2-1
2.1.1	Geotechnical Investigation.....	2-1
2.1.2	Excavation Limits .....	2-2
2.1.3	Excavation Permit .....	2-2
2.1.4	Helical Pin Pile Installation at Building 502 .....	2-2
2.2	Soil Excavation, Transportation, and Disposal .....	2-2
2.2.1	Waste Characterization.....	2-2
2.2.2	Soil Excavation, Transportation, and Disposal .....	2-3
2.3	Backfill and Site Restoration .....	2-3
2.3.1	Fill Material Characterization.....	2-3
2.3.2	Backfill.....	2-3
2.3.3	Site Restoration.....	2-4
2.4	Problems Encountered.....	2-4
<b>3.0</b>	<b>Conclusions .....</b>	<b>3-1</b>
<b>4.0</b>	<b>References .....</b>	<b>4-1</b>

## Tables

2-1	General Soil Profile.....	2-1
-----	---------------------------	-----

## Figures

1-1	Regional Map of Former NAS Cecil Field .....	1-3
1-2	Site Map .....	1-4
1-3	Soil Removal Area, Building 502.....	1-5
1-4	Schematic of Excavation Limits, Building 502.....	1-6
1-5	Soil Removal Area, Building 2905 and Tank G290A.....	1-7

## Appendices

- A Site Photographs
- B Building 502 Support Plan
- C Requests for Information
- D Waste Characterization Laboratory Analytical Reports
- E Waste Profiles
- F Non-Hazardous Waste Manifests and Weight Tickets
- G Certificates of Disposal
- H Transportation and Disposal Log
- I Clean Fill Laboratory Analytical Reports and Certifications
- J Excavation Permit
- K Final Dig and Haul Package, Building 502, Tank 502 (Tetra Tech NUS, Inc., September 2007)
- L Final Site Assessment Report Addendum, Building 502, Tank 502 (Tetra Tech NUS, Inc., December 2007)
- M Dig and Haul Package, Building 290A, Tank G290A (Tetra Tech NUS, Inc., November 2007)
- N Supplemental Soil Assessment Letter Report for Tank G290-A (Tetra Tech NUS, Inc., November 2006)

# Acronyms and Abbreviations

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ASTM	American Society for Testing and Materials
bgs	below ground surface
CH2M HILL CTO	CH2M HILL Constructors, Inc. Contract Task Order
EPA	U.S. Environmental Protection Agency
FDOT	Florida Department of Transportation
JAA	Jacksonville Aviation Authority
MOP	Monitoring Only Plan
NAS NAVFAC SE	Naval Air Station U.S. Naval Facilities Engineering Command Southeast
PAH PCB	polynuclear aromatic hydrocarbon polychlorinated biphenyl
QC	quality control
SPT SVOC	Standard Proctor Test semivolatile organic compound
TAL TCL TCLP TtNUS	Target Analyte List Target Compound List Toxicity Characteristic Leaching Procedure Tetra Tech NUS, Inc.
VOC	volatile organic compound

# 1.0 Introduction

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CH2M HILL Constructors, Inc. (CH2M HILL) has been contracted by the U.S. Naval Facilities Engineering Command, Southeast (NAVFAC SE), to conduct remedial activities under Contract No. N62467-01-D-0331, Contract Task Order (CTO) No. 0060. As part of the remedial activities to be performed under CTO No. 0060, CH2M HILL has been tasked with conducting excavation of petroleum contaminated soils at Building 502 and Building 290A at the former Naval Air Station (NAS) Cecil Field, Jacksonville, Florida. The source removal was conducted in accordance with the *Final Dig and Haul Package, Building 502, Tank 502, NAS Cecil Field* (Tetra Tech NUS, Inc. [TtNUS], 2007a) provided in Appendix K and the *Dig and Haul Package, Building 290A, Tank G290A, NAS Cecil Field* (TtNUS, 2007b) provided in Appendix M.

The scope of services for the excavation of petroleum contaminated soils at Building 502 and Building 290A is described in detail in the *NAS Cecil Field Basewide Work Plan, Revision 01* (CH2M HILL, 1998); *Work Plan, Excavation of Petroleum Contaminated Soil at Buildings 502 and 290A, Naval Air Station Cecil Field* (CH2M HILL, 2010); and *Final Dig and Haul Package, Building 502, Tank 502, NAS Cecil Field* (TtNUS, 2007a) provided in Appendix K; and the *Dig and Haul Package, Building 290A, Tank G290A, NAS Cecil Field* (TtNUS, 2007b) provided in Appendix M.

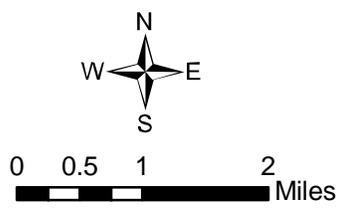
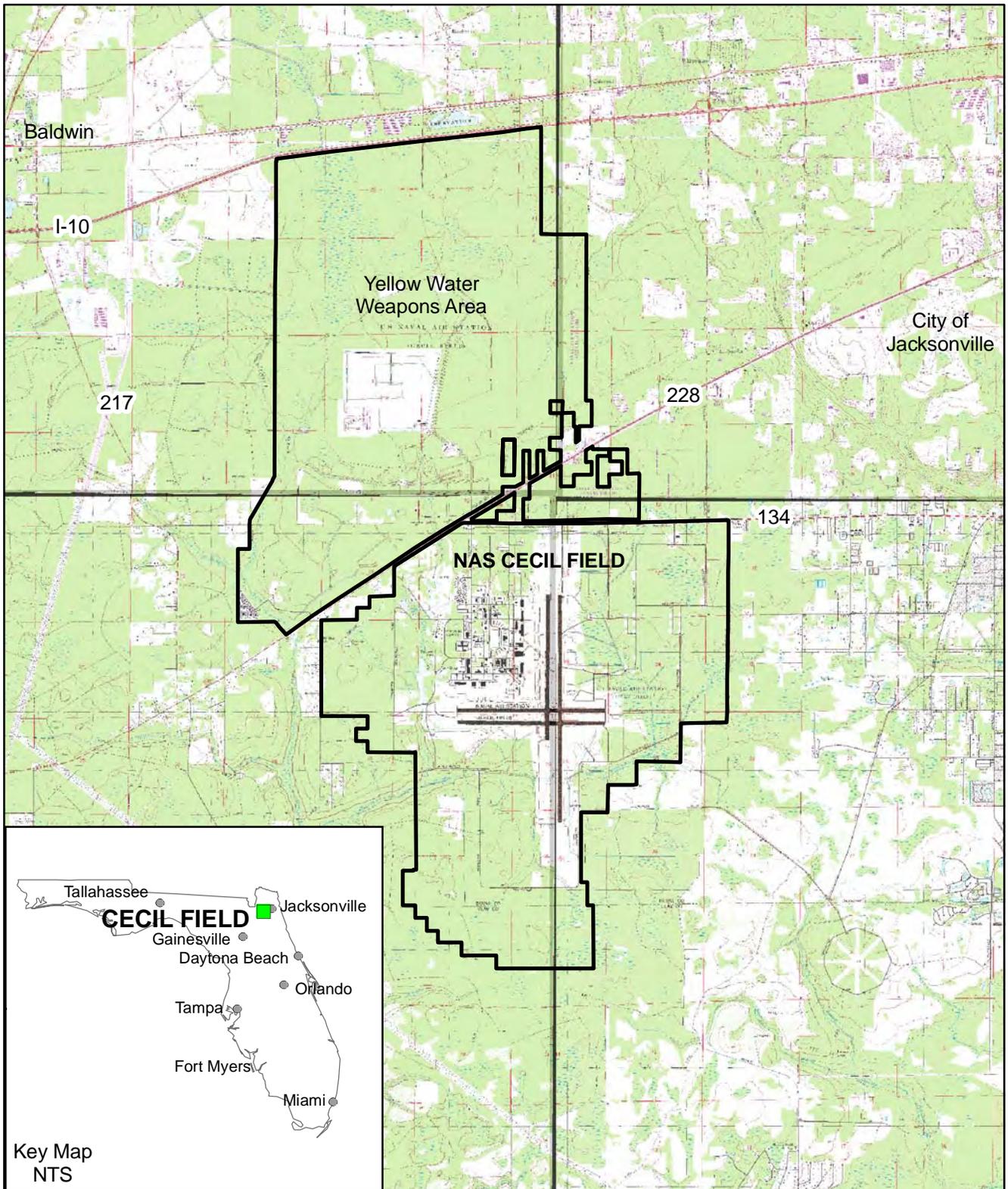
## 1.1 Site Background

Buildings 502 and 290A are located at the former NAS Cecil Field in Jacksonville, Florida. Figure 1-1 shows the location of NAS Cecil Field. Both building locations, shown on Figure 1-2, had fuel storage tanks associated with them, which have been removed. Building 502 had an underground fuel oil storage tank (Tank 502) immediately to its west, while Building 290A housed a backup power generator for Building 290 with an underground diesel storage tank (G290-U) immediately north of Building 290A. Pre and post tank-removal site assessments were performed, and groundwater compliance monitoring plans were initiated. In July 1995, Building 290A received a Clean Closure from the Florida Department of Environmental Protection (FDEP), and in 1999, the FDEP approved a Monitoring Only Plan (MOP) for Building 502. However, subsequent groundwater monitoring and well installation activities during the years that followed revealed persistent soil contamination at both sites. TtNUS has characterized the extent of soil contamination and recommended additional soil excavation to remove the impacted soil.

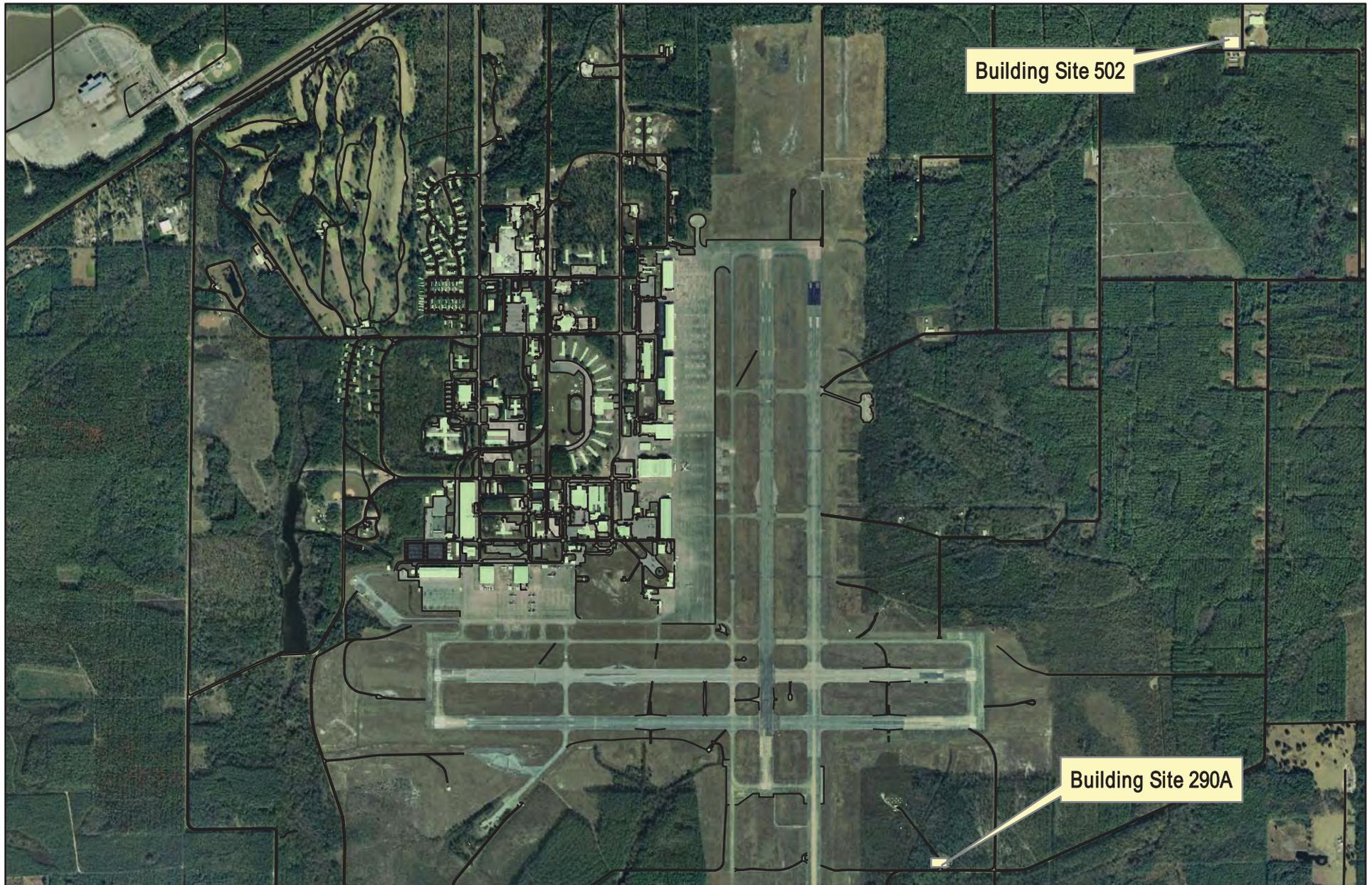
Additional site history and background along with the contaminants of concern for each site are presented in the *Final Dig and Haul Package, Building 502, Tank 502, NAS Cecil Field* (TtNUS, 2007a); *Final Site Assessment Report Addendum, Building 502, Tank 502, NAS Cecil Field* (TtNUS, 2007c); *Dig and Haul Package, Building 290A, Tank G290A, NAS Cecil Field* (TtNUS, 2007b); and *Supplemental Soil Assessment Letter Report for Tank G290-A* (TtNUS, 2006), provided in Appendices K, L, M, and N, respectively.

## 1.2 Project Objectives and Summary

The project objectives at Building 502 and Building 290A were to excavate the petroleum contaminated soil to the horizontal and vertical limits shown on Figures 1-3 through 1-5; transport and dispose of the contaminated soil at a facility(ies) permitted to accept the waste; and restore the site in accordance with the *Final Dig and Haul Package, Building 502, Tank 502, NAS Cecil Field* (TtNUS, 2007a) and the *Dig and Haul Package, Building 290A, Tank G290A, NAS Cecil Field* (TtNUS, 2007b).

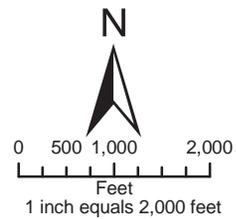


**FIGURE 1-1**  
Regional Map of  
Former NAS  
Cecil Field

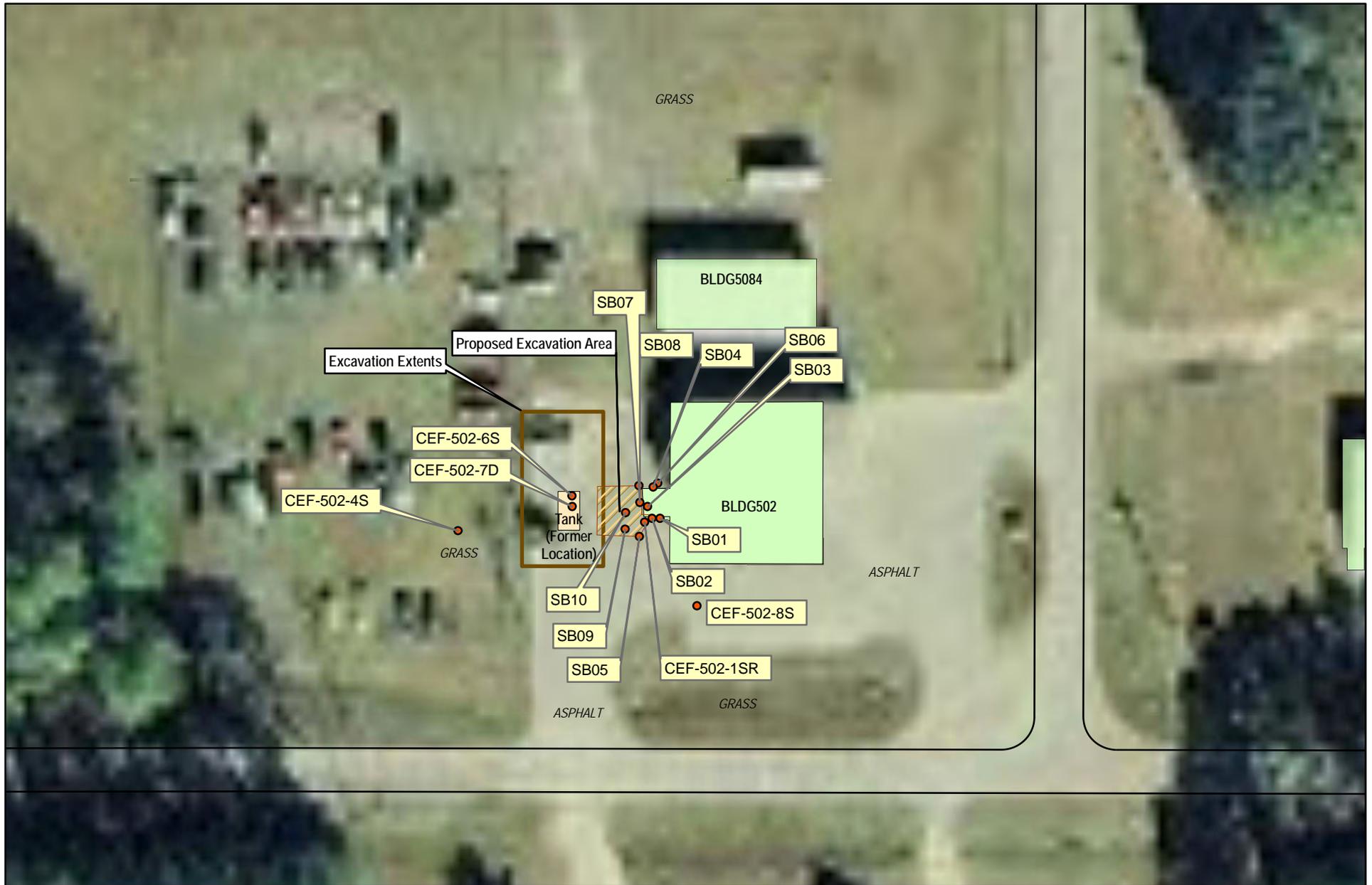


**Legend**

- Soil Borings
- ▨ Proposed Excavation Area
- Permanent Building
- Tank
- ▭ Excavation Extent
- Roads

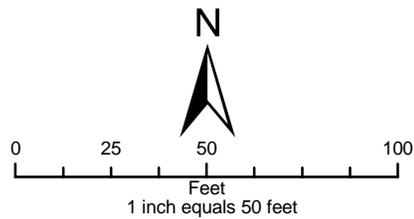


**FIGURE 1-2**  
 Site Map  
 Proposed Soil Removal Areas  
 Buildings 290A and 502  
 Naval Air Station Cecil Field  
 Jacksonville, FL



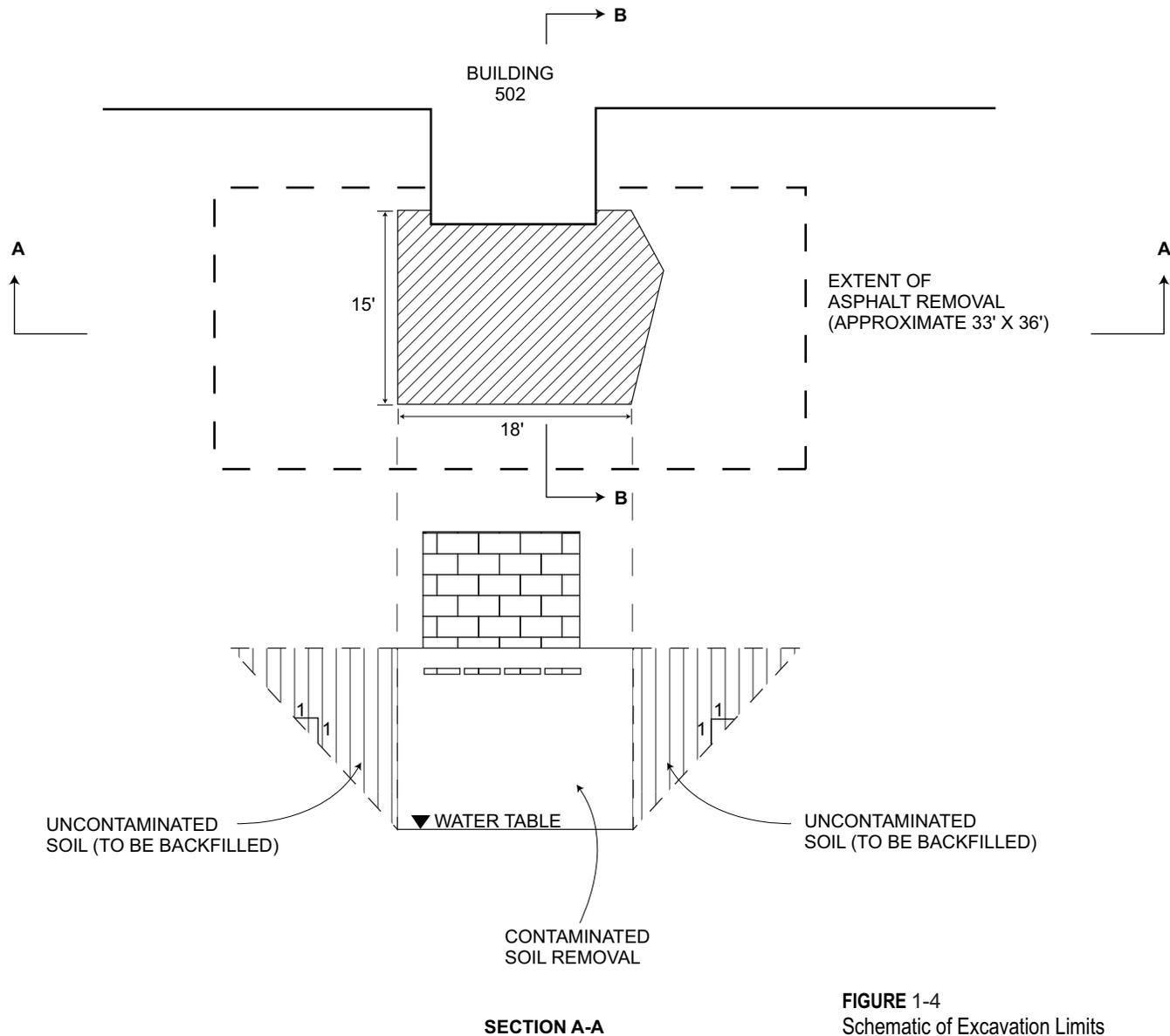
**Legend**

- Soil Borings
- ▨ Proposed Excavation Area
- Permanent Building
- Tank
- ▭ Excavation Extent
- Roads

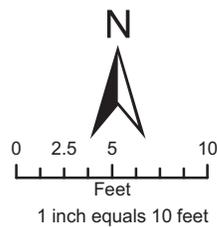
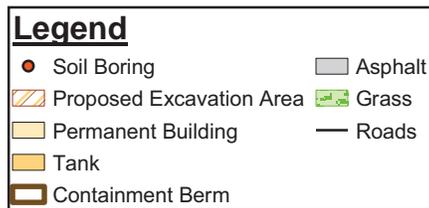
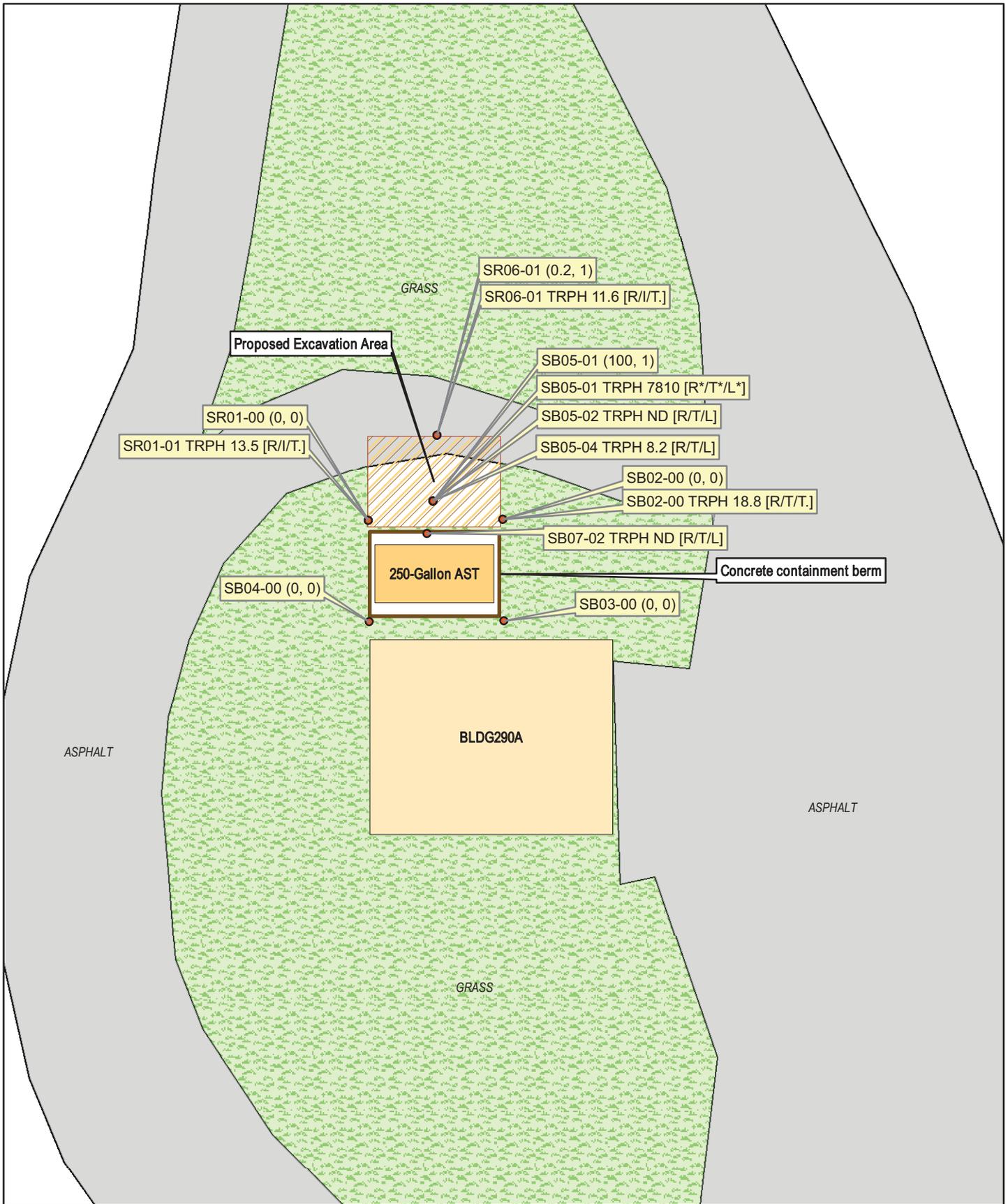


**FIGURE 1-3**

Proposed Soil Removal Area  
 Building 502  
 Naval Air Station Cecil Field  
 Jacksonville, FL



**FIGURE 1-4**  
 Schematic of Excavation Limits  
 Building 502 Area  
 NAS Cecil Field, Jacksonville, FL



**FIGURE 1-5**  
Proposed Soil Removal Area  
Building 290A and Tank G290A  
Naval Air Station Cecil Field  
Jacksonville, FL

## 2.0 Excavation Activities

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Excavation activities were conducted at Building 502 and Building 290A on April 1, 2010, and June 14 through June 24, 2010. Site photographs of the field activities are presented in Appendix A.

### 2.1 Site Preparation

#### 2.1.1 Geotechnical Investigation

On April 1, 2010, Universal Engineering Sciences, Inc. (subcontractor to CH2M HILL) completed a subsurface investigation at Building 502. The purpose of this investigation was to explore the general subsurface conditions at the site and provide soil data for the design and implementation of the support plan for the west side of Building 502 during excavation activities.

To explore the subsurface conditions at the site, two Standard Penetration Test (SPT) borings were drilled to depths of 40 feet below ground surface (bgs) in general accordance with the methodology outlined in American Society for Testing and Materials (ASTM) D 1586. Soil samples recovered during the performance of the borings were visually classified in the field and representative portions of the samples were transported to the Universal Engineering Sciences, Inc. Laboratory for further evaluation. The laboratory investigation consisted of the following tests to help quantify and correlate the soil engineering properties:

- Visual classification by a geotechnical engineer in accordance with ASTM D 2488
- Fines tests (11)
- Moisture content tests (11)
- Attenberg limits tests (2)

The results of these tests and the general test procedures are presented in the Universal Engineering Sciences, Inc. Report of Exploratory Borings (Appendix B). The general soil profile is shown in Table 2-1.

**TABLE 2-1**  
General Soil Profile

Typical Depth		Soil Description	USC <sup>1</sup>
From	To		
0	0.6 – 0.8	Asphalt (2 to 2-1/4") and Limerock (5 to 7")	---
0.6 - 0.8	6	Loose sand, sand with silt	SP, SP-SM
6	12.5 – 17.5	Dense to very dense weakly cemented silty sand (hardpan)	SM
12.5-17.5	22 – 22.5	Dense to medium dense sand	SP
22 – 22.5	32.5	Very loose to loose sand with clay, clayey sand	SP-SC, SC
32.5	40	Loose to medium dense sand with clay	SP-SC

<sup>1</sup> Unified Soil Classification

## **2.1.2 Excavation Limits**

On June 8, 2010, prior to excavation activities, TtNUS located and marked the horizontal excavation limits (see Figures 1-3 through 1-5) using survey stakes and marking paint. TtNUS representatives remained onsite for the duration of excavation activities to verify the horizontal and vertical excavation limits.

## **2.1.3 Excavation Permit**

In preparation for excavation at Building 502 and Building 290A, excavation permits (Appendix J) were completed in accordance with facility procedures. Sunshine State One-call of Florida and Jacksonville Aviation Authority (JAA) conducted the facility utility locates for the completion of the excavation permit. In addition to the facility locates, CH2M HILL subcontracted Bowyer Singleton and Associates, Inc. to perform a third party utility locate March 15, 2010. No utilities were located in the excavation areas.

## **2.1.4 Helical Pin Pile Installation at Building 502**

In order to preserve the integrity of the western portion of Building 502 (which lies adjacent to the excavation area), five helical pin piles were installed along the western edge of Building 502 on June 15 through June 17, 2010 to provide temporary support of the western wall during soil excavation and backfilling. Each helical pin pile was installed to a minimum depth of 11 feet below existing ground surface with a minimum installation torque of 5,000 foot-pounds. The helical pin pile support plan and design drawings are provided in Appendix B.

# **2.2 Soil Excavation, Transportation, and Disposal**

## **2.2.1 Waste Characterization**

The procedures utilized for waste characterization sampling and analysis are outlined in the *Work Plan, Excavation of Petroleum Contaminated Soil at Buildings 502 and 290A* (CH2M HILL, 2010). Each excavation area was sampled independently for waste characterization following delineation by TtNUS.

Waste characterization sampling was performed on June 10, 2010 with one 5-point composite sample collected per site, and the samples analyzed by Gulf Coast Laboratories for toxicity characteristic leaching procedure (TCLP) volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method SW-846 1311/8260B, TCLP semivolatile organic compounds (SVOCs) by EPA Method SW-846 1311/8270C, TCLP pesticides by SW-846 1311/8081A, polychlorinated biphenyls (PCBs) by EPA Method SW-846 8082, TCLP herbicides by EPA Method SW-846 1311/8151A, TCLP metals by EPA Method SW-846 1311/6010A/7470A, corrosivity by EPA Method 9045D, and ignitability by EPA Method 1010.

The soil from each site was characterized as non-hazardous petroleum impacted soil and debris. The disposal characterization laboratory analytical reports are provided in Appendix D, and the Non-Hazardous Waste Profile is provided in Appendix E.

## **2.2.2 Soil Excavation, Transportation, and Disposal**

Soil from Building 502 and Building 290A was excavated using an excavator from June 18 to 21, 2010 to the specified excavation limits marked by TtNUS and shown on Figures 1-3 through 1-5. During excavation activities, the depth of each excavation area was verified by the Project Quality Control (QC) Manager and TtNUS field personnel at regular intervals using a standard tape measure. Following excavation of each area and prior to backfilling, the specified excavation limits were verified by the Project Manager, Project QC Manager, and TtNUS field personnel. The non-hazardous soil from both sites was stockpiled in a containment area lined with 20-mil polyethylene sheeting located near Building 502. The stockpiled soil was either loaded directly into tandem trailer trucks for transportation by Beaver Bulk Trucking and disposal at Chesser Island Landfill, Inc., or relocated in one roll-off container and transported by Environmental Remediation Services for disposal at Chesser Island Landfill, Inc. Based on the weight tickets, 201.1 tons of non-hazardous petroleum impacted soil was excavated and transported for disposal. The waste disposal profile, waste manifests, weight tickets, and certificates of disposal, and Transportation and Disposal Log are provided in Appendices E, F, G, and H, respectively.

## **2.3 Backfill and Site Restoration**

### **2.3.1 Fill Material Characterization**

The procedures utilized for fill material characterization sampling and analysis are outlined in the Work Plan, Excavation of Petroleum Contaminated Soil at Buildings 502 and 290A (CH2M HILL, 2010). Each fill material source was sampled independently for fill material characterization and verified free of contamination with the exception of the FDOT #57 stone. A letter from the source of the stone was obtained stating that all FDOT #57 material was from below surface mining operations and that no material is accepted from outside mining operations (see Appendix I).

Fill material characterization sampling was performed on June 9, 2010, and analyzed by Enco Laboratories for target compound list (TCL) VOCs by EPA Method 8260B, TCL SVOCs by EPA Method 8270C, 16-listed polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8310, TCL pesticides by EPA Method 8081A, PCBs by EPA Method 8082, TCL herbicides by EPA Method 8151A, Target Analyte List (TAL) metals by EPA Method 6010A/7470A, and pH by EPA Method 9045B.

The fill material characterization laboratory analytical reports are provided in Appendix I.

### **2.3.2 Backfill**

#### **Building 502**

Following excavation at Building 502, FDOT #57 stone was placed in 8-inch lifts to 12 inches above the groundwater table (approximately 4 feet bgs) without compaction. Following the placement of FDOT #57 stone, clean soil was placed in 8-inch lifts with each lift proof rolled with overlapping passes using a plate vibratory compactor. Each lift was compacted to 98 percent of the Standard Proctor Maximum Density (ASTM D698) and field verified by one compaction test per lift performed by Universal Engineer Services prior to placing the next lift. This procedure was repeated until the excavation area was backfilled to

approximately 6 inches below the previous grade. Crushed limestone was used to complete the excavation area and to act as a suitable road base for asphalt placement. The crushed limestone was compacted in the same manner as the clean soil and a compaction test was performed to verify that 98 percent of the Standard Proctor Maximum Density (ASTM D698) had been achieved.

### **Building 290A**

Following excavation at Building 290A, clean soil was placed in 8-inch lifts and machine compacted using an excavator. No compaction testing was required. The excavation area was backfilled with clean soil until the previous grade had been achieved.

## **2.3.3 Site Restoration**

### **Building 502**

Following backfill of the excavation area, all existing edges designated for new pavement were trimmed to straight and neat lines to the required depth and all loose material was removed. A tack coat made of bituminous, emulsified asphalt material was then applied uniformly. Following the application of the tack coat, a Class 2 asphalt concrete was then placed in two layers, approximately 3 inches per layer, with each layer rolled using a vibratory machine roller.

### **Building 290A**

Following backfill of the excavation area, the area was graded and smoothed to match surrounding conditions. Straw was placed over the backfill material to deter soil erosion.

## **2.4 Problems Encountered**

On June 17, 2010, CH2M HILL submitted a Request for Information (Appendix C), and requested the excavation depth at Building 502 be changed to a depth of at least 1 foot below the water table (approximately 8 feet bgs). This request was a change from the *Final Dig and Haul Package, Building 502, Tank 502 Naval Air Station Cecil Field* (TtNUS, 2007a), which specified an excavation depth to the depth of the water table (approximately 9 feet bgs). This modification was requested due to depth of water measurements collected on June 15, 2010 from two onsite piezometers that showed the water table to be 6.91 feet bgs and 7.11 feet bgs.

In addition, CH2M HILL also requested that the excavation method specified in the above referenced Dig and Haul Package be modified from excavating in 4-foot trenches running 15 feet east to west to provide support for the western wall of Building 502 to completing the entire excavation at once. This modification was requested because the five helical pin piles installed on the western wall of Building 502 provided adequate support.

## 3.0 Conclusions

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The source removal at Building 502 and Building 290A was completed from April 1, 2010 to June 24, 2010, in accordance with the *Final Dig and Haul Package, Building 502, Tank 502, NAS Cecil Field* (TtNUS, 2007a) and the *Dig and Haul Package, Building 290A, Tank G290A, NAS Cecil Field* (TtNUS, 2007b). The source removal included the following:

- Site preparation activities, to include a geotechnical investigation to explore the general subsurface conditions at the Building 502 site, and provide soil data for the design and implementation of the support plan for the west side of Building 502 during excavation activities
- Completing the excavation permits and conducting a third party utility locate for each site
- Installation of five helical pin piles in accordance with the support plan and design drawings along the western edge of Building 502 to provide temporary support of the western wall during soil excavation and backfilling
- Excavation, transportation, and disposal of 201.1 tons of non-hazardous petroleum contaminated soil from the specified excavation limits shown on Figures 1-3 through Figure 1-5
- Backfilling each of the excavated areas with backfill verified free of contamination and restoring each site to match pre-excavation conditions

Based on the source removal activities documented in this report, the specified project objectives were achieved.

## 4.0 References

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CH2M HILL Constructors, Inc. 1998. *Basewide Work Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. March.

CH2M HILL Constructors, Inc. 2010. *CTO No. 0060 Work Plan, Excavation of Petroleum Contaminated Soil, Building 502 and 290A, Former Naval Air Station Cecil Field, Jacksonville, Florida*. March.

Tetra Tech NUS, Inc. (TtNUS). 2006. *Supplemental Soil Assessment Letter Report for Tank G290-A*. November.

Tetra Tech NUS, Inc. (TtNUS). 2007a. *Final Dig and Haul Package, Building 502, Tank 502, NAS Cecil Field*. September.

Tetra Tech NUS, Inc. ( TtNUS). 2007b. *Dig and Haul Package, Building 290A, Tank G290A, NAS Cecil Field*. November.

Tetra Tech NUS, Inc. ( TtNUS). 2007c. *Final Site Assessment Report Addendum, Building 502, Tank 502, NAS Cecil Field*. December.

Appendix A  
Site Photographs

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**Appendix A**  
**Site Photographs**



Photograph 1: Excavation of trench at Building 502 to facilitate the installation of helical pin piles.



Photograph 2: Phone utilities at Building 502.



Photograph 3: Installation of helical pin piles at Building 502.



Photograph 4: Torque tests of helical pin piles Building 502.



Photograph 5: Pressure test of helical pin piles at Building 502.



Photograph 6: Two installed helical pin piles at Building 502.



Photograph 7: Excavation activities at Building 502.



Photograph 8: Contaminated soil containment area at Building 502.



Photograph 9: Backfilling with FDOT #57 stone at Building 502.



Photograph 10: Backfilling activities at Building 502.



Photograph 11: Mechanical compacting of backfill soil at Building 502.



Photograph 12: Soil density test at Building 502.



Photograph 13: Final soil compaction at Building 502.



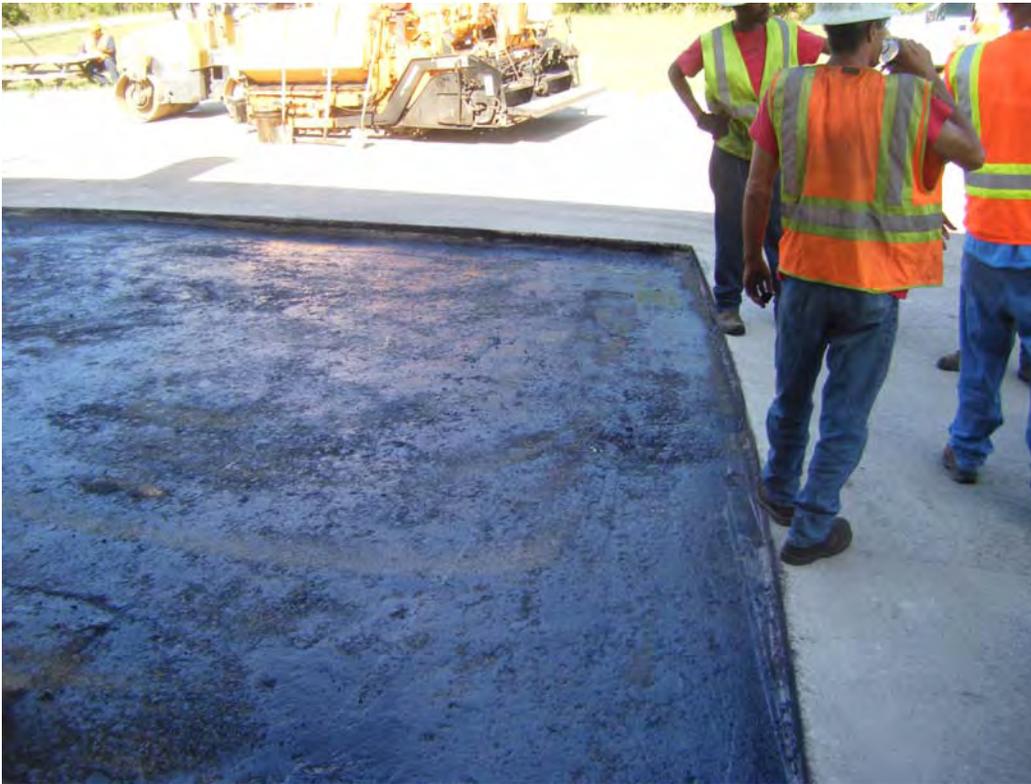
Photograph 14: Placing crushed limestone for road base at Building 502.



Photograph 15: Transportation and disposal activities at Building 502.



Photograph 16: Backfill and compaction complete at Building 502.



Photograph 17: Asphalt tack coat completed at Building 502.



Photograph 18: Placing 1<sup>st</sup> asphalt layer at Building 502.



Photograph 19: Rolling 1<sup>st</sup> asphalt layer at Building 502.



Photograph 20: Placing final asphalt layer at Building 502.



Photograph 21: Site restoration complete at Building 502.



Photograph 22: Excavation activities at Building 290A.



Photograph 23: Excavation activities at Building 290A.



Photograph 24: Excavation activities at Building 290A.



Photograph 25: Placement of plastic barrier at Building 290A.



Photograph 26: Backfill activities at Building 290A.



Photograph 27: Completed excavation at Building 290A.

Appendix B  
Building 502 Support Plan

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# UNIVERSAL ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Engineering • Construction Materials Testing •  
Threshold Inspection • Private Provider Inspection • Geophysical Studies

Offices In:  
• Daytona Beach, FL  
• Fort Myers, FL  
• Fort Pierce, FL  
• Gainesville, FL  
• Jacksonville, FL  
• Leesburg, FL  
• Miami, FL  
• Norcross, GA  
• Ocala, FL  
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• Palm Coast, FL  
• Panama City, FL  
• Pensacola, FL  
• Rockledge, FL  
• Sarasota, FL  
• St. Augustine, FL  
• Tampa, FL  
• West Palm Beach, FL

April 19, 2010

## CH2M Hill

9311 San Pedro Avenue – Suite 800  
San Antonio, Texas 78216

Attention: Ms. Colleen Kurtz

Reference: **REPORT OF EXPLORATORY BORINGS**  
Building 502 Cecil Field Naval Air Station  
Prime Contract No. N62467-01-D-0331-CTO 60  
Jacksonville, Florida  
UES Project No. 0930.1000055.0000 and Report No. 833290

Dear Ms. Kurtz:

Universal Engineering Sciences, Inc. has completed the subsurface investigation of the subject site located along 10<sup>th</sup> Street at Cecil Field Naval Air Station in Jacksonville, Florida. This report presents a summary of the field exploration and laboratory testing procedures and contains the results of our exploration.

### PROJECT INFORMATION

The purposes of this investigation were to explore the general subsurface conditions at the site. It was not the purpose of this investigation to interpret and review the subsurface conditions with respect to the proposed construction. We will be pleased to provide these services if requested.

This report presents the soil conditions encountered on the basis of traditional geotechnical procedures for site characterization. The recovered samples were not examined, either visually or analytically, for chemical composition or environmental hazards. Universal Engineering Sciences would be pleased to perform these services if you desire.

Our investigation was confined to the zone of soil within the upper 40 feet below the ground surface. Our work did not address the potential for surface expression of deep geological conditions. This evaluation requires a more extensive range of field services than performed in this study. We will be pleased to conduct an investigation to evaluate the probable effect of the regional geology upon the proposed construction if you desire.

### FIELD EXPLORATION

To explore the subsurface conditions at the site, we located and performed two Standard Penetration Test (SPT) borings, drilled to depths of 40 feet below the existing ground surface in

general accordance with the methodology outlined in ASTM D 1586. A summary of these field procedures is included in Appendix A. Soil samples recovered during performance of the borings were visually classified in the field and representative portions of the samples were transported to our laboratory for further evaluation.

### LABORATORY INVESTIGATION

Representative soil samples obtained during our field exploration were returned to our office and reviewed by a geotechnical engineer. The samples were visually classified in general accordance with ASTM D 2488 (Unified Soil Classification System).

Eleven (11) fines content tests, eleven (11) moisture content tests, and two (2) Atterberg limits tests were conducted in the laboratory on representative soil samples obtained from the borings. These tests were performed to aid in classifying the soils and to help quantify and correlate engineering properties. The results of these tests are presented on the Boring Logs in Appendix A. A brief description of the laboratory procedures used is also provided in Appendix A.

### GENERAL SUBSURFACE CONDITIONS

#### General Soil Profile

The boring locations and detailed subsurface conditions are included in Appendix A on the Boring Location Plan and Boring Logs. The classifications and descriptions shown on the logs are generally based upon visual characterizations of the recovered soil samples. When reviewing these logs, it should be understood that the soil conditions will vary away from and between the boring locations. The following table summarizes the soil conditions encountered.

<b>TABLE 1 GENERAL SOIL PROFILE</b>			
<b>Typical Depth</b>		<b>Soil Description</b>	<b>USC<sup>1</sup></b>
<b>From</b>	<b>To</b>		
0	0.6-0.8	Asphalt (2 – 2-1/4”) and Limerock (5 to 7”)	---
0.6-0.8	6	Loose sand, sand with silt	SP, SP-SM
6	12.5-17.5	Dense to very dense weakly cemented silty sand (hardpan)	SM
12.5-17.5	22-22.5	Dense to medium dense sand	SP
22-22.5	32.5	Very loose to loose sand with clay, clayey sand	SP-SC, SC
32.5	40	Loose to medium dense sand with clay	SP-SC

<sup>1</sup> Unified Soil Classification



## **Groundwater Level**

The groundwater level was encountered at the boring locations and recorded at the time of drilling at depths ranging from 4.9 to 5.0 feet below the existing ground surface. The groundwater should be anticipated to fluctuate due to seasonal climatic variations, surface water runoff patterns, construction operations and other interrelated factors. Based upon our review of the Duval County Soils Survey and regional hydrogeology, it is our opinion the seasonal high water level will occur at a depth range of 0.0 to 0.5 feet below the existing ground surface.

### **LIMITATIONS**

During the early stages of most construction projects, geotechnical issues not addressed in this report may arise. Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. An Association of Engineering Firms Practicing in the Geosciences (ASFE) publication, "Important Information About Your Geotechnical Engineering Report" appears in Appendix B, and will help explain the nature of geotechnical issues.

We trust this report meets your needs and addresses the geotechnical issues associated with the proposed construction. We appreciate the opportunity to have worked with you on this project and look forward to a continued association. Please do not hesitate to contact us if you should have any questions, or if we may further assist you as your plans proceed.

Respectfully submitted,

**UNIVERSAL ENGINEERING SCIENCES, INC.**



Stephen R. Weaver, P.E.  
Geotechnical Services Manager  
Florida P.E. Number 37389

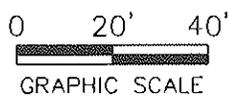
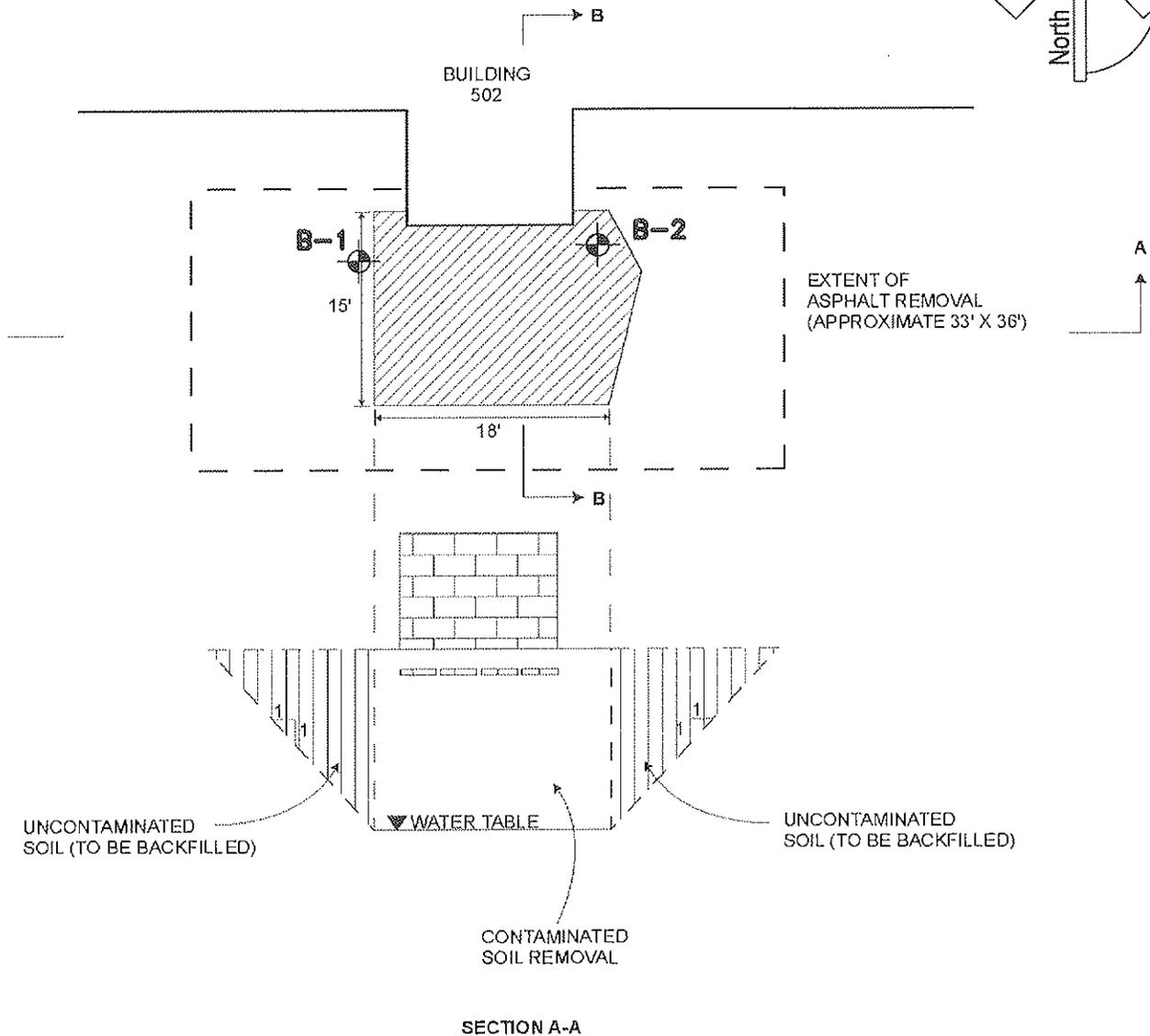
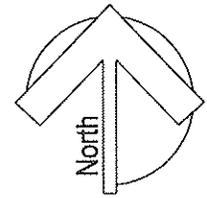
SRW/srw

Cc: Mr. Jeff Marks  
CH2M Hill



**APPENDIX A**

**BORING LOCATION PLAN  
BORING LOGS  
KEY TO BORING LOGS  
FIELD EXPLORATION PROCEDURES  
LABORATORY TESTING PROCEDURES**



 SPT BORING LOCATIONS

LEGEND



UNIVERSAL  
ENGINEERING SCIENCES

GEOTECHNICAL EXPLORATION  
BUILDING 502-CECIL FIELD NAS  
JACKSONVILLE, FLORIDA

BORING LOCATION PLAN

REVISED BY: TW	DATE: 4/9/10	CHECKED BY: MM	DATE: 4/9/10
SCALE: N.T.S.	PROJECT NO: 0940.1000055.0000	REPORT NO:	PAGE NO: A-1



# UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.:	0930.1000055.0000
REPORT NO.:	
PAGE:	A-2

PROJECT: GEOTECHNICAL EXPLORATION  
BUILDING 502 - CECIL FIELD NAS  
JACKSONVILLE, FL

BORING DESIGNATION: **B-1**  
SECTION: TOWNSHIP:

SHEET: **1 of 1**  
RANGE:

CLIENT: CH2M HILL  
LOCATION: SEE BORING LOCATION PLAN  
REMARKS:

G.S. ELEVATION (ft): DATE STARTED: 4/1/10  
WATER TABLE (ft): 4.9 DATE FINISHED: 4/1/10  
DATE OF READING: 4/1/2010 DRILLED BY: PB/DB  
EST. W.S.W.T. (ft): TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0						2 1/4" Asphalt 7" Limerock						
2-3		3	6			Loose grayish brown fine SAND with Silt (SP-SM)						
2-2		3	5	▼		Loose light brown fine SAND with Silt (SP-SM)	7.8	17.4				
4-4		4	8			Loose gray fine SAND with Silt (SP-SM)	11.9	21.0				
3-12		13	25			Medium dense brown fine SAND with Silt (SP-SM)						
13-26		40	66			Very dense to dense dark brown Silty fine SAND with weakly cemented hardpan layers (SM)						
19-38		52	90				15.1	24.3				
16-26		38	64									
11-13		14	27			Medium dense brown fine SAND (SP)						
2-1		2	3			Very loose to medium dense light brown fine SAND with Clay (SP-SC)	11.3	30.3		NP		
4-5		6	11									
4-6		9	15			Medium dense brown fine SAND with Clay (SP-SC)	9.1	25.9				
6-7		7	14									

BORING LOG 0930.1000055.0000 BUILDING 502 - CECIL FIELD NAS GPJ UNIENSC GDT 4/19/10



# UNIVERSAL ENGINEERING SCIENCES BORING LOG

PROJECT NO.: 0930.1000055.0000

REPORT NO.:

PAGE: A-3

PROJECT: GEOTECHNICAL EXPLORATION  
BUILDING 502 - CECIL FIELD NAS  
JACKSONVILLE, FL

BORING DESIGNATION: **B-2**  
SECTION: TOWNSHIP:

SHEET: **1 of 1**  
RANGE:

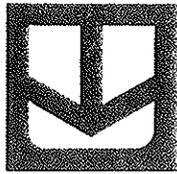
CLIENT: CH2M HILL  
LOCATION: SEE BORING LOCATION PLAN  
REMARKS:

G.S. ELEVATION (ft):  
WATER TABLE (ft): 5.0  
DATE OF READING: 4/1/2010  
EST. W.S.W.T. (ft):

DATE STARTED: 4/1/10  
DATE FINISHED: 4/1/10  
DRILLED BY: PB/DB  
TYPE OF SAMPLING: ASTM D 1586

DEPTH (FT.)	SAMPLING	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	SYMBOL	DESCRIPTION	-200 (%)	MC (%)	ATTERBERG LIMITS		K (FT./ DAY)	ORG. CONT. (%)
									LL	PI		
0						2" Asphalt 5" Limerock Loose gray fine SAND with Silt (SP-SM)						
3-3-3		6				Loose grayish brown fine SAND with Silt (SP-SM)	6.7	9.6				
2-3-3		6										
2-2-3		5										
4-13-20		33				Dense to very dense dark brown weakly cemented Silty fine SAND (SM) (hardpan)						
13-36-48		84					14.3	23.1				
18-43-50/4"		100+										
						Dense light brown fine SAND with Silt (SP-SM)						
10-17-22		39										
7-11-14		25					6.9	26.9				
						Very loose brown fine SAND with Clay (SP-SC)						
1-1-2		3					11.9	35.7				
3-4-5		9				Loose gray Clayey fine SAND (SC)						
2-2-4		6				Loose to medium dense light brown fine SAND with Clay (SP-SC)	7.6	26.3				
2-3-12		15					10.2	23.8			NP	

BORING LOG 0930.1000055.0000 BUILDING 502 - CECIL FIELD NAS.GPJ UNIENSCS.GDT 4/19/10



**SYMBOLS AND ABBREVIATIONS**

SYMBOL	DESCRIPTION
N-Value	No. of Blows of a 140-lb. Weight Falling 30 Inches Required to Drive Standard Spoon 1Foot
WOR	Weight of Drill Rods
WOH	Weight of Drill Rods and Hammer
	Sample From Auger Cuttings
	Standard Penetration Test Sample
	Thin-wall Shelby Tube Sample (Undisturbed Sampler Used)
% REC	Percent Core Recovery from Rock Core Drilling
RQD	Rock Quality Designation
	Stabilized Groundwater Level
	Seasonal High Groundwater Level
NE	Not Encountered
BT	Boring Terminated
-200	Fines Content or % Passing No. 200 Sieve
MC	Moisture Content
LL	Liquid Limit
PI	Plasticity Index
K	Coefficient of Permeability
Org. Cont.	Organic Content

**UNIFIED SOIL CLASSIFICATION SYSTEM**

MAJOR DIVISIONS		GROUP SYMBOLS	TYPICAL NAMES	
COARSE-GRAINED SOILS More than 50% retained on the No. 200 sieve *	GRAVELS 50% or more of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS	GW Well-graded gravels and gravel-sand mixtures, little or no fines	
			GP Poorly graded gravels and gravel-sand mixtures, little or no fines	
	GRAVELS WITH FINES	GM	Silty gravels and gravel-sand-silt mixtures	
		GC	Clayey gravels and gravel-sand-clay mixtures	
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS 5% or less passing No. 200 sieve	SW** SP**	Well-graded sands and gravelly sands, little or no fines Poorly graded sands and gravelly sands, little or no fines
		SANDS with 12% or more passing No. 200 sieve	SM**	Silty sands, sand-silt mixtures
SC**			Clayey sands, sand-clay mixtures	
FINE-GRAINED SOILS 50% or more passes the No. 200 sieve *		SILTS AND CLAYS Liquid limit 50% or less	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
	CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays	
	OL		Organic silts and organic silty clays of low plasticity	
	SILTS AND CLAYS Liquid limit greater than 50%	MH	Inorganic silts, micaceous or diamicaceous fine sands or silts, elastic silts	
		CH	Inorganic clays or clays of high plasticity, fat clays	
		OH	Organic clays of medium to high plasticity	
	PT	Peel, muck and other highly organic soils		

\* Based on the material passing the 3-inch (75 mm) sieve  
\*\* Use dual symbol (such as, SP-SM and SP-SC) for soil with more than 5% but less than 12% passing the No. 200 sieve

**RELATIVE DENSITY**  
(Sands and Gravels)

- Very Loose - Less than 4 Blows / Foot
- Loose - 4 to 10 Blows / Foot
- Medium Dense - 11 to 30 Blows / Foot
- Dense - 31 to 50 Blows / Foot
- Very Dense - More than 50 Blows / Foot

**CONSISTENCY**  
(Silts and Clays)

- Very Soft - Less than 2 Blows / Foot
- Soft - 2 to 4 Blows / Foot
- Firm - 5 to 8 Blows / Foot
- Stiff - 9 to 15 Blows / Foot
- Very Stiff - 16 to 30 Blows / Foot
- Hard - More than 30 Blows / Foot

**RELATIVE HARDNESS**  
(Limestone)

- Soft - 100 Blows for more than 2"
- Hard - 100 Blows for less than 2"

**MODIFIERS**

These Modifiers Provide Our Estimate of the Amount of Minor Constituents (Silt or Clay Size Particles) in the Soil Sample

- Trace - 5% or Less
- With Silt or With Clay - 6% to 11%
- Silty or Clayey - 12% to 30%
- Very Silty or Very Clayey - 31% to 50%

These Modifiers Provide Our Estimate of the Amount of Organic Components in the Soil Sample

- Trace - Less than 3%
- Few - 3% to 4%
- Some - 5% to 8%
- Many - Greater than 8%

These Modifiers Provide Our Estimate of the Amount of Other Components (Shell, Gravel, Etc.) in the Soil Sample

- Trace - 5% or Less
- Few - 6% to 12%
- Some - 13% to 30%
- Many - 31% to 50%

## FIELD EXPLORATION PROCEDURES

### Standard Penetration Test Boring

The penetration boring was made in general accordance with the latest revision of ASTM D 1586, "Penetration Test and Split-Barrel Sampling of Soils". The boring was advanced by rotary drilling techniques using a circulating bentonite fluid for borehole flushing and stability. At 2 ½ to 5 foot intervals, the drilling tools were removed from the borehole and a split-barrel sampler inserted to the borehole bottom and driven 18 inches into the soil using a 140 pound hammer falling on the average 30 inches per hammer blow. The number of blows for the final 12 inches of penetration is termed the "penetration resistance, blow count, or N-value". This value is an index to several in-place geotechnical properties of the material tested, such as relative density and Young's Modulus.

After driving the sampler 18 inches (or less if in hard rock-like material), the sampler was retrieved from the borehole and representative samples of the material within the split-barrel were placed in glass jars and sealed. After completing the drilling operations, the samples for each boring were transported to our laboratory where they were examined by our engineer in order to verify the driller's field classification.

## **LABORATORY TESTING PROCEDURES**

### **Natural Moisture Content**

The water content of the sample tested was determined in general accordance with the latest revision of ASTM D 2216. The water content is defined as the ratio of “pore” or “free” water in a given mass of material to the mass of solid material particles.

### **Percent Fines Content**

The percent fines or material passing the No. 200 mesh sieve of the sample tested was determined in general accordance with the latest revision of ASTM D 1140. The percent fines are the soil particles in the silt and clay size range.

### **Atterberg Limits**

The Atterberg Limits consist of the Liquid Limit (LL) and the Plastic Limit (PL). The LL and PL were determined in general accordance with the latest revision of ASTM D 4318. The LL is the water content of the material denoting the boundary between the liquid and plastic states. The PL is the water content denoting the boundary between the plastic and semi-solid states. The Plasticity Index (PI) is the range of water content over which a soil behaves plastically and is denoted numerically by as the difference between the LL and the PL. The water content of the sample tested was determined in general accordance with the latest revision of ASTM D 2216. The water content is defined as the ratio of “pore” or “free” water in a given mass of material to the mass of solid material particles.

**APPENDIX B**

**IMPORTANT INFORMATION ABOUT YOUR  
GEOTECHNICAL ENGINEERING REPORT**

**CONSTRAINTS AND RESTRICTIONS**

# Important Information About Your Geotechnical Engineering Report

*Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.*

*The following information is provided to help you manage your risks.*

## Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. *No one except you* should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one—not even you*—should apply the report for any purpose or project except the one originally contemplated.

## Read the full report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

## A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, *do not rely on a geotechnical engineering report* that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

## Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

## Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions *only* at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an *opinion* about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

## **A Report's Recommendations Are *Not* Final**

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

## **A Geotechnical Engineering Report Is Subject To Misinterpretation**

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

## **Do Not Redraw the Engineer's Logs**

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

## **Give Contractors a Complete Report and Guidance**

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage

them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time to perform additional study.* Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

## **Read Responsibility Provisions Closely**

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce such risks, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations", many of the provisions indicate where geotechnical engineers responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

## **Geoenvironmental Concerns Are Not Covered**

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

## **Rely on Your Geotechnical Engineer for Additional Assistance**

Membership in ASFE exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.



8811 Colesville Road Suite G106 Silver Spring, MD 20910  
Telephone: 301-565-2733 Facsimile: 301-589-2017  
email: [info@asfe.org](mailto:info@asfe.org) [www.asfe.org](http://www.asfe.org)

## **CONSTRAINTS AND RESTRICTIONS**

### **WARRANTY**

Universal Engineering Sciences has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

### **UNANTICIPATED SOIL CONDITIONS**

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

### **CHANGED CONDITIONS**

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and Universal Engineering Sciences of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of Universal Engineering Sciences to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

### **MISINTERPRETATION OF SOIL ENGINEERING REPORT**

Universal Engineering Sciences is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data

presented are made by others, those conclusions or recommendations are not the responsibility of Universal Engineering Sciences.

### **CHANGED STRUCTURE OR LOCATION**

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by Universal Engineering Sciences.

### **USE OF REPORT BY BIDDERS**

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations.

Bidders are urged to make their own soil borings, test pits, test caissons or other investigations to determine those conditions that may affect construction operations. Universal Engineering Sciences cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

### **STRATA CHANGES**

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

### **OBSERVATIONS DURING DRILLING**

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

### **WATER LEVELS**

Water level readings have been made in the drill holes during drilling and they indicate normally occurring conditions. Water levels may not have been stabilized at the last

reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions of variations.

#### **LOCATION OF BURIED OBJECTS**

All users of this report are cautioned that there was no requirement for Universal Engineering Sciences to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by Universal Engineering Sciences to locate any such buried objects. Universal Engineering Sciences cannot be responsible for any buried man-made objects which are subsequently encountered during construction that are not discussed within the text of this report.

#### **TIME**

This report reflects the soil conditions at the time of investigation. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.

# FOUNDATION SYSTEMS AND EQUIPMENT COMPANY

---

CB C059308 Florida Building Contractor License CB C1252700

P.O. BOX 50545 • JACKSONVILLE BEACH, FL 32240  
OFC. 904-241-4425 • FAX 904-247-8553

June 2, 2010

Mr. John Anderson  
Environmental Remediation Services, Inc  
760 Talleyrand Avenue  
Jacksonville, FL 32202

RE: Support of Portion of  
Building 502  
Cecil Field Naval Air Station  
Jacksonville, FL

John,

Enclosed you will find the following documents:

1. Engineered Sealed Drawings
2. Engineered Sealed Pile Calculations

I believe you now have everything needed for this project.

Regards,



Bill C McMahan  
CBC 059308

Enclosures  
Bcm/trm

# HeliCAP-v2.0 SUMMARY REPORT

Job Name: cecl field-bldg.502

5/28/2010 9:55:22 AM

Job Number:

C:\Program Files\HeliCAP\Chance-UNTITLED.mdb

Boring Number: b-2

Water Table Depth: None

Application: Compression

## Capacity Summary

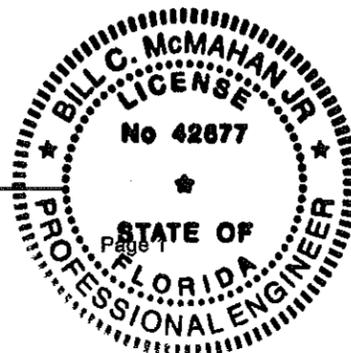
Pile Number	Helix Depth (ft)	Ult. Helix Bearing Capacity (kips)	Ultimate Recommended Helix Capacity (kips)	Installation Torque (ft-lbs)
Number: 1				
Product: RS2875.262				
Helix Strength: 40.0 kips				
Datum Depth: 0.0				
Helix Gr: 50				
Thk: 3/8"				
Length: 15.0				
Angle: 90.0				
12" helix	12.0	7.6t 17.3c	7.6t 17.3c	
10" helix	14.5	15.2t 25.6c	15.2t 25.6c	
Total Ult. Helix Tension (Qbt\Qht)		22.9t	22.9t	
Total Ult. Helix Compression (Qbc\Qhc)		43.0c	43.0c	3123

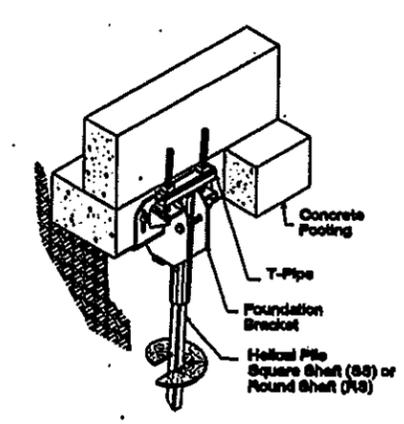
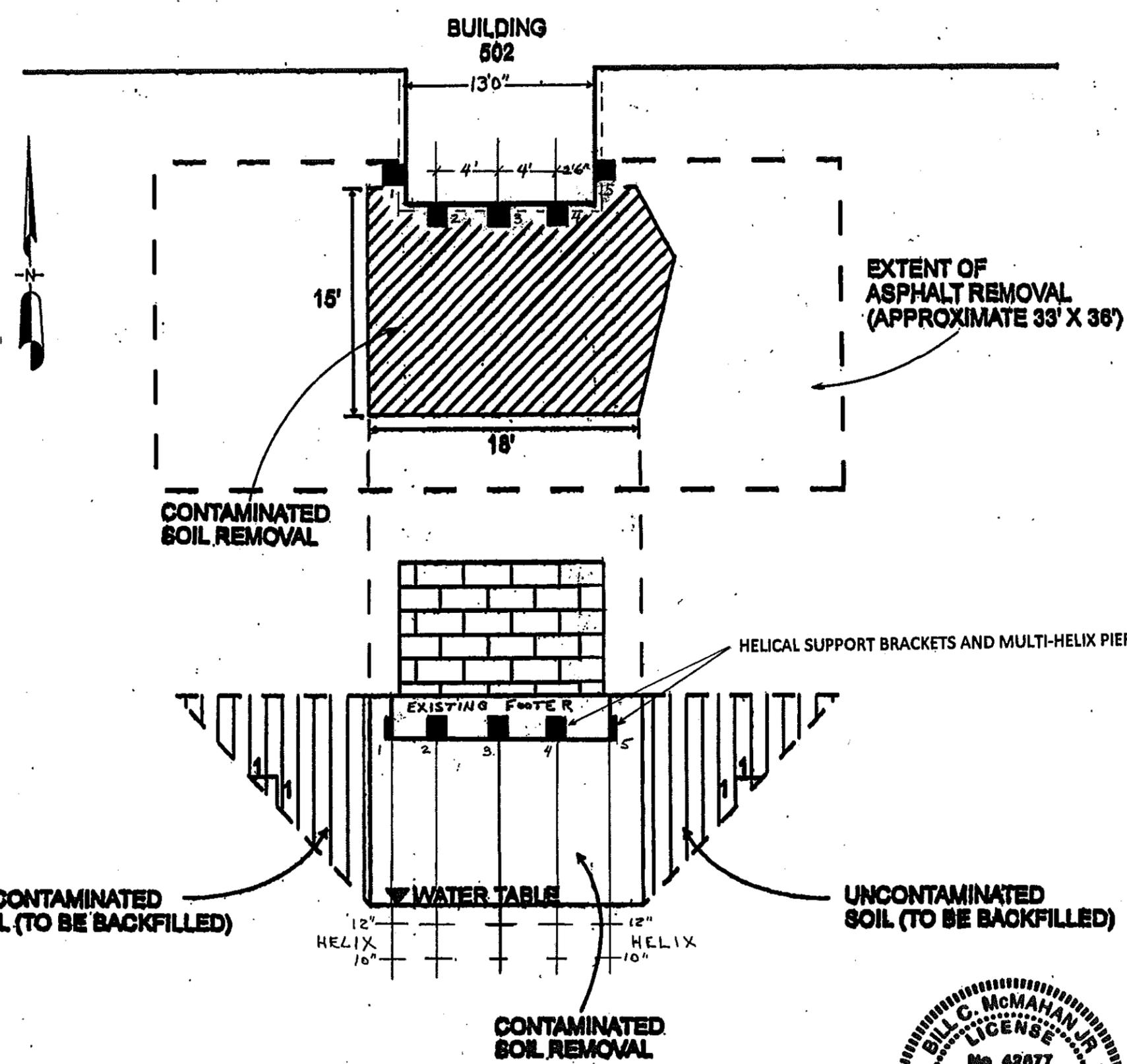
## Soil Profile

Top of Layer Depth (ft)	Soil Type	Cohesion (psf)	N	Angle of Internal Friction (Degrees)	Nc \ Nq	In-situ Unit Weight (pcf)	Effect. Unit Weight (pcf)
0.0	Sand	0	0	27.4	0 \ 9	65	65
3.0	Sand	0	6	29.0	0 \ 12	90	90
5.0	Sand	0	5	28.8	0 \ 11	85	85
12.0	Sand	0	27	34.9	0 \ 25	117	117
15.0	Sand	0	40	38.6	0 \ 40	130	130
20.0	Sand	0	25	34.4	0 \ 23	115	115

6/1/10

Bill C. McMahan Jr. - P.E.  
REG. FLA 42677





**Chance® Helical C150-0121 Standard Bracket and T-Pipe System**

- Use for lifts up to 4" (10 cm)
- All C150-0121 Standard Systems include:
  - Foundation bracket
  - T-pipe
  - Hardware

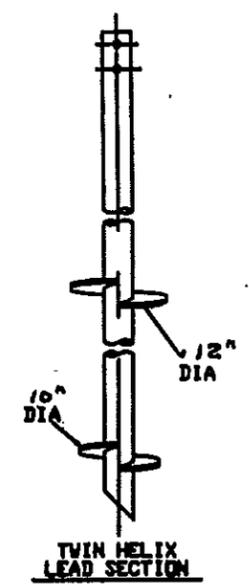
Order separately: Two 5/8" (16 mm) diameter anchor bolts per pier as required.

Standard finish is galvanized per ASTM A153.

Ultimate mechanical strength of bracket body is 80,000 lbs (358 kN). Working mechanical strength of bracket body is 40,000 lbs (178kN).

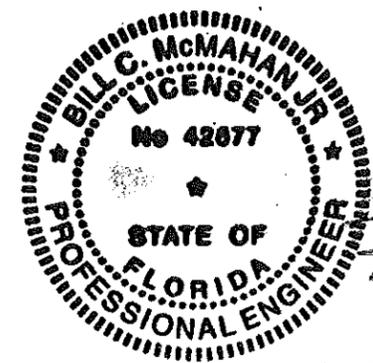
**SHEET NOTES:**

1. Chance 20 KIP capacity Helical Piers and 40 KIP Support Brackets. #s 1-5
2. NOTE: Chance Helical Piers shall be installed to a minimum depth of 15' below existing grade and to a minimum torque of 3000 Ft Lbs.
3. NOTE: Each Chance Helical Pier shall have a 10"/12" Twin Helix.
4. NOTE: All Chance Helical materials shall be Hot-dipped galvanized for corrosion protection.
5. NOTE: Pre-drilling at each Pier location will be Required to depths of approximately 12 ft below existing grade. Pre-drilling will be accomplished using a 12" diameter rotary drill.
6. NOTE: Pier installation records shall be kept using standard FSEC forms.
7. NOTE: Actual Pier locations may be moved as may be required by actual job conditions to avoid underground utilities, buried obstructions, etc.



CHANCE®  
RS2875.276 MULTI-HELIX

**Schematic of Excavation Limits  
Building 502 Area  
NAS Cecil Field, Jacksonville, FL**



*Bill C. McMahan Jr.*  
**Bill C. McMahan Jr., P.E.**  
Registered Florida #42677

New Foundation Support at Building 502		
Building 502 Cecil Field Naval Air Station, Jacksonville, Florida		
DRAWN BY <i>Bill</i>	SCALE 1/8" = 1 FT	MATERIAL
CHK'D	DATE June 1, 2010	DRAWING NO. S-1
TRACED	APP'D	

June 16, 2010

**ENVIRONMENTAL REMEDIATION SERVICES, INC.**

760 Talleyrand Avenue  
Jacksonville, Florida 32202  
Attn : Mr. John Anderson

Re: Revised Helical Pin Pile Installation Recommendations  
Building 502 Cecil Field Air Station  
Jacksonville, Florida

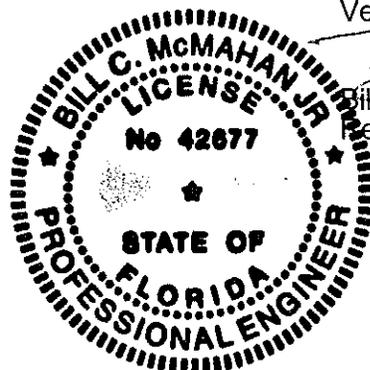
Gentlemen:

I recently prepared and submitted a Foundation Plan for the subject project. The intent of the recommendations presented on the Plan was to temporarily support the southern wall of an existing concrete block building during planned short-term soil remediation related excavation and backfilling operations. The original plan recommended that: (1) the building be supported on five(5) 2-7/8 diameter (0.276 wall thickness) 10"/12" Double Helix Chance Pin Piles, (2) the pin locations be pre-drilled to a depth of 12 feet below the ground surface due to the presence of dense hardpan soil, and (3) that the pin piles be installed to a minimum depth of 15 feet and to a minimum installation torque of 3000 ft-lbs. The pre-drilling and minimum depth recommendations were given to assure that the top helix bears at or below the maximum excavation depth which was presumed to be 12 feet or less. The torque requirement was designed to assure that the pins achieved an allowable axial compression capacity of 20 Kips (40 kip ultimate).

We understand that pin installation operations are currently underway. Two pin piles have been pre-drilled and installed to depths of approximately 12 to 13.5 feet below the ground surface. The installation torque for both pins maxed out at 7,500 ft-kips (64 kip ultimate compression capacity) prior to achieving the originally recommended 15 foot deep minimum pin bearing depth. As such, I have been asked to evaluate the installation data and the revised project information to determine whether the pins, as installed, will meet the intent of the original plans. Based upon a review of the installation records and our understanding that:(1) the maximum excavation depth is 8 feet, (2) minimal soil will be removed from beneath the building, (3) the excavation will be backfilled almost immediately, it is our opinion that the installation criteria may be relaxed slightly without hindering the piles ability to support the building as intended. Therefore, I have revised the minimum pin depth and installation torque requirements to reflect actual field conditions, our understanding that the maximum excavation depth will be limited to 8 feet below the ground surface, and the installation results for two of the planned production pin piles. Specifically, Note 2 on the attached revised Foundation Plan states that "helical pin piles can provide the necessary short term axial compression capacity (20 Kip Allowable, 40kip ultimate )needed to support the building during excavation and backfilling operations, provided the pins are installed to: (1) a revised minimum depth of 11 feet (below the existing ground surface) AND (2) a minimum installation torque of 5,000 ft. lb."

Please contact me at (904) 237-2943 if you have any questions or comments.

Very truly yours,



*[Handwritten Signature]*  
Bill C. McMahan, Jr., PE.  
Registered, Florida No. 42802

Attachments

June 16, 2010

**ENVIRONMENTAL REMEDIATION SERVICES, INC.**  
760 Talleyrand Avenue  
Jacksonville, Florida 32202  
Attn : Mr. John Anderson

Re: Revised Helical Pin Pile Installation Recommendations  
Building 502 Cecil Field Air Station  
Jacksonville, Florida

Gentlemen:

I recently prepared and submitted a Foundation Plan for the subject project. The intent of the recommendations presented on the Plan was to temporarily support the southern wall of an existing concrete block building during planned short-term soil remediation related excavation and backfilling operations. The original plan recommended that: (1) the building be supported on five(5) 2-7/8 diameter (0.276 wall thickness) 10"/12" Double Helix Chance Pin Piles, (2) the pin locations be pre-drilled to a depth of 12 feet below the ground surface due to the presence of dense hardpan soil, and (3) that the pin piles be installed to a minimum depth of 15 feet and to a minimum installation torque of 3000 ft-lbs. The pre-drilling and minimum depth recommendations were given to assure that the top helix bears at or below the maximum excavation depth which was presumed to be 12 feet or less. The torque requirement was designed to assure that the pins achieved an allowable axial compression capacity of 20 Kips (40 kip ultimate).

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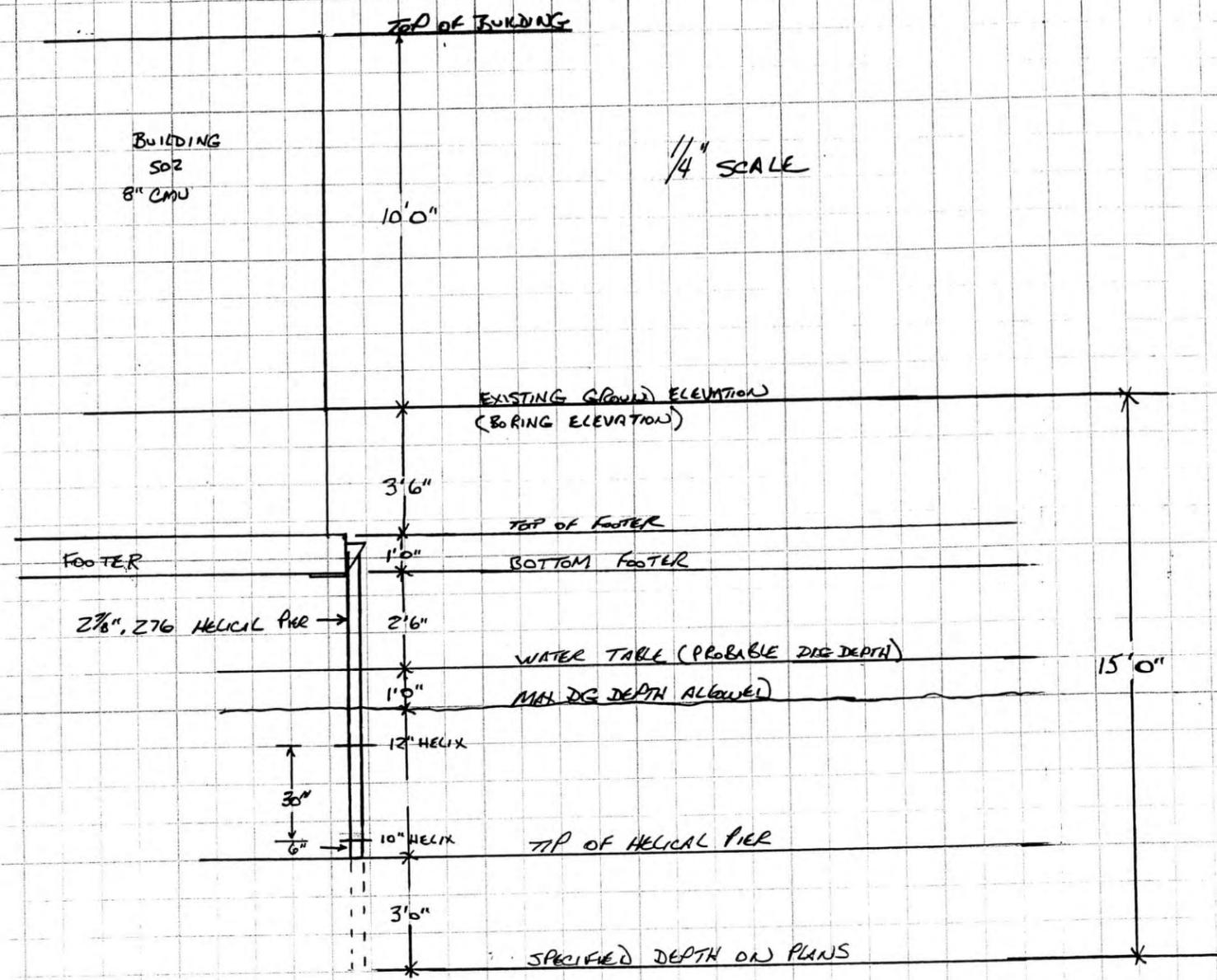
Please contact me at (904) 237-2943 if you have any questions or comments.

Very truly yours,

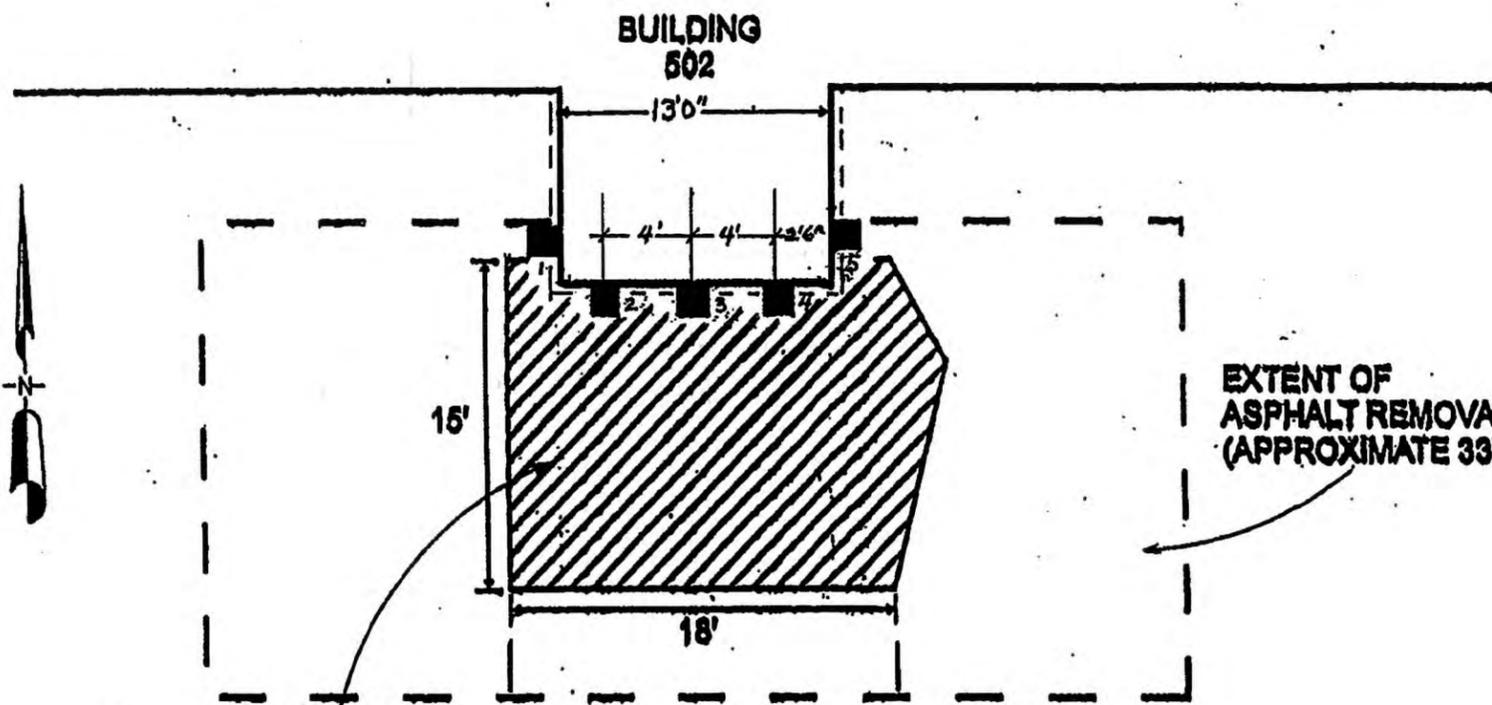


Bill C. McMahan, Jr., PE.  
Registered, Florida No. 42802

Attachments

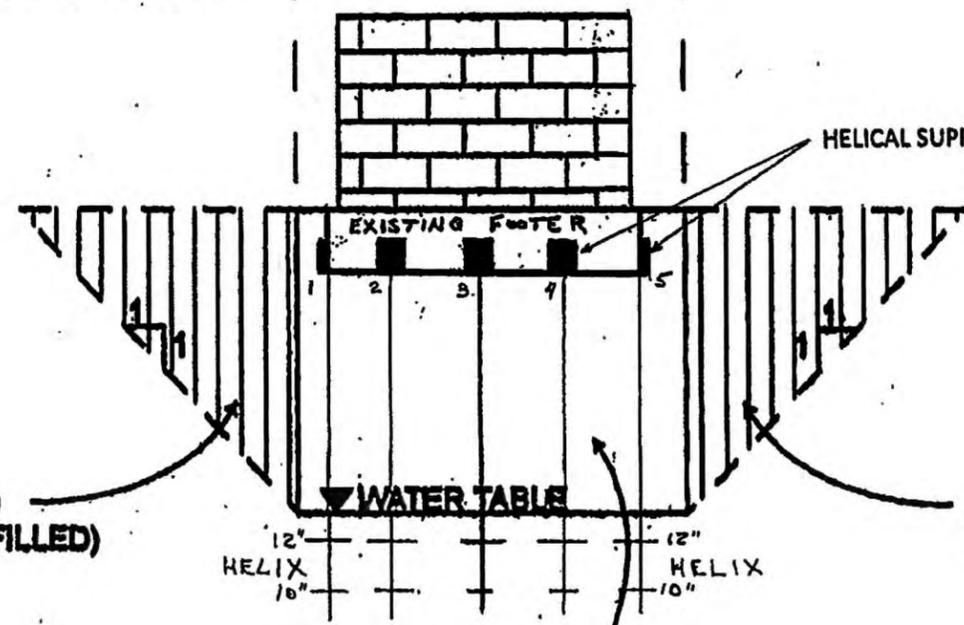


TO: MR JOHN ANDERSON  
 ENVIRONMENTAL REMEDIATION SERVICES, INC.  
 760 TRILLEY ROAD AVENUE  
 JACKSONVILLE, FL. 32202  
 FAX # 904-791-9833  
 PH. # 904-791-9992  
 EMAIL - J.ANDERSON@ERSFL.COM



**EXTENT OF ASPHALT REMOVAL (APPROXIMATE 33' X 36')**

**CONTAMINATED SOIL REMOVAL**

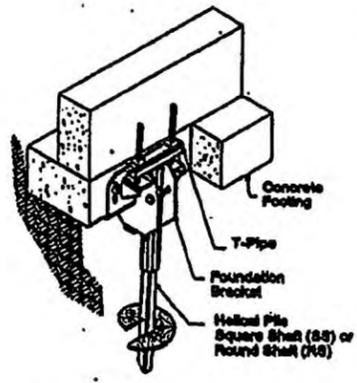


**UNCONTAMINATED SOIL (TO BE BACKFILLED)**

**UNCONTAMINATED SOIL (TO BE BACKFILLED)**

**CONTAMINATED SOIL REMOVAL**

**Schematic of Excavation Limits  
Building 502 Area  
NAS Cecil Field, Jacksonville, FL**



**Chance® Helical C150-0121 Standard Bracket and T-Pipe System**

- Use for lifts up to 4" (10 cm)
- All C150-0121 Standard Systems include:
  - Foundation bracket
  - T-pipe
  - Hardware

Order separately: Two 5/8" (16 mm) diameter anchor bolts per pier as required.

Standard finish is galvanized per ASTM A153.

Ultimate mechanical strength of bracket body is 80,000 lbs (358 kN). Working mechanical strength of bracket body is 40,000 lbs (178kN).

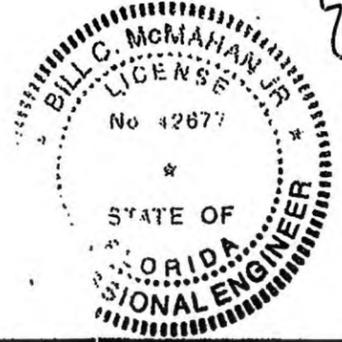


**SHEET NOTES:**

1. ■ — Chance 20 KIP capacity Helical Piers and 40 KIP Support Brackets, #s 1-5
2. NOTE: Chance Helical Piers shall be installed to a minimum depth of 15' below existing grade and to a minimum torque of 3000 Ft-Lbs. *SCM 6/16/10*
3. NOTE: Each Chance Helical Pier shall have a 10"/12" Twin Helix.
4. NOTE: All Chance Helical materials shall be Hot-dipped galvanized for corrosion protection.
5. NOTE: Pre-drilling at each Pier location will be Required to depths of approximately 12 ft below existing grade. Pre-drilling will be accomplished using a 12" diameter rotary drill.
6. NOTE: Pier installation records shall be kept using standard FSEC forms.
7. NOTE: Actual Pier locations may be moved as may be required by actual job conditions to avoid underground utilities, buried obstructions, etc.



**NOTE 2 (revised 6/16/2010):** I have revised the minimum pin depth and installation torque requirements to reflect actual field conditions, our understanding that the maximum excavation depth will be limited to 8 feet below the ground surface, and the installation results for two of the planned production pin piles. Specifically, the helical pin piles can provide the necessary short term axial compression capacity (20 Kip Allowable, 40kip ultimate) needed to support the building during excavation and backfilling operations, provided the pins are installed to: (1) a revised minimum depth of 11 feet (below the existing ground surface) AND (2) a minimum installation torque of 5,000 ft. lb.



*Bill C. McMahan Jr.*  
**Bill C. McMahan Jr., P.E.**  
Registered Florida #42677

<b>New Foundation Support at Building 502</b>		
<b>Building 502 Cecil Field Naval Air Station, Jacksonville, Florida</b>		
<b>DRAWN BY</b> <i>HR</i>	<b>SCALE</b> 1/8" = 1 FT	<b>DATUM</b>
<b>CHK'D</b>	<b>DATE</b> June 1, 2010	<b>DRAWING NO.</b>
<b>TRACED</b>	<b>APP'D</b>	<b>S-1</b>

---

**From:** Chang, K.R./GNV  
**Sent:** Thursday, June 03, 2010 4:04 PM  
**To:** Marks, Jeffery/JAX  
**Subject:** RE: Cecil Field Project - Support Plan Review

Jeff: I have reviewed the design drawings. The installation depth and spacing of the drilled piers seem appropriate to me.

Kou-Roung Chang, Ph.D., PE  
Design Manager and Senior Technologist  
CH2M HILL  
3011 SW Williston Road  
Gainesville, Florida, 32608  
Phone No. 352/384-7031  
Fax 352/629-4026

---

**From:** Marks, Jeffery/JAX  
**Sent:** Thursday, June 03, 2010 12:50 PM  
**To:** Chang, K.R./GNV  
**Cc:** Weinberg, Noah/JAX  
**Subject:** Cecil Field Project - Support Plan Review

K.R.  
We received the P.E. sealed drawing and plan for the support of Building 502 on Cecil Field, if you recall you helped me with the scope of work and work plan on the method that will be used to support the building while we excavated the contaminated soil. Can you take a look at the attached and let me know if it looks good to you? Thanks and call me anytime if you have any concerns or comments.

**Jeffery Marks, E.I.**  
Associate Project Manager  
**CH2M HILL**  
10142 103rd Street, Suite 105  
Jacksonville, FL 32210  
Direct 904/777-4812 x. 224  
Fax 352/381-3918  
Mobile 904/219-6253  
[www.ch2mhill.com](http://www.ch2mhill.com)

## Appendix C

### Requests for Information

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**REQUEST FOR INFORMATION**

Project Name/Description:	Excavation of Petroleum Contaminated Soil at Buildings 502 and 290A	RFI No.:	01 (Revision 01)	Date Submitted:	6/17/2010
Contract/TO No:	N62467-01-D-0331 / CTO No. 0060	Project No:	350277		
<b>To:</b>	Art Sanford Name		BRAC PMO SE RPM Title		
<b>From:</b>	Jeffery Marks Name		CH2M HILL Associate Project Manager Title		
<b>REFERENCES</b>					
Document ( <i>Work Plan, Scope of Work, etc.</i> ):	Work Plan Revision No. 00; Excavation of Petroleum Contaminated Soil at Buildings 502 and 290A				
Drawing(s)/Specification ( <i>Drawing No. Specification No., etc.</i> ):	Figures 1-3 and 2-1				
Detail/Section ( <i>Page No., Section No., Paragraph No., etc.</i> ):	Page No. 2-6, Section No. 2.1.6, Paragraphs 2 and 3				
Discipline ( <i>Architecture, Electrical, Mechanical, Chemical, Hydrogeology, etc.</i> ):	Environmental				
<b>POTENTIAL IMPACT:</b>	Cost <input checked="" type="checkbox"/>	Schedule <input checked="" type="checkbox"/>	Activity/Task Impacted: Excavation and Backfilling		
<b>REQUEST</b>	<p>Based on the Final Dig and Haul Package, Building 502, Tank 502 prepared by Tetra Tech NUS, Inc. (TtNUS) (submitted September 11, 2007), the above referenced Work Plan states that soil will be excavated to a depth of the water table (approximately 9 feet bgs). Depth to water measurements from two onsite piezometers (each approximately 35 to 40 feet from the excavation area) collected on 6/15/2010 were 6.91 feet bgs and 7.11 feet bgs, respectively. CH2M HILL proposes that the excavation depth be changed to a depth of at least one-foot below the water table (approximately 8 feet bgs).</p> <p>In addition, the above referenced Work Plan states that the soil be removed in 4-foot trenches running 15 feet east to west in order to provide support to Building 502. With the installation of five multi-helix piers to support Building 502 (Support Plan attached), CH2M HILL proposes to excavate the entire area as a whole, rather than in trenches. The five multi-helix piers provide adequate support of the building, making the requirement for trenches no longer necessary. Following excavation, FDOT #57 Stone (specification attached) will be used initially as backfill to bridge the water table. FDOT #57 Stone will be placed to 12 inches above the groundwater table without compaction. After that, the stone will be placed in 8-inch lifts and each lift proof rolled with five overlapping passes using a plate vibratory compactor. Compaction testing is not required on the stone. Soil fill will then be placed in layers not to exceed 8 inches, and machine compacted to 95% of the Standard proctor maximum density (ASTM D698) and field verified by one compaction test per lift prior to placing the next lift.</p> <p>It is CH2M HILL's understanding based on technical communications conducted on June 17, 2010 between CH2M HILL (Jeff Marks), BRAC PMO SE (Art Sanford), and TtNUS (Rob Simcik), that TtNUS will relocate in the field the excavation limits for Building 502 on June 18, 2010, and that CH2M HILL will excavate within these specified limits in accordance with the Final Dig and Haul Package, Building 502, Tank 502 and this Request for Information.</p>				
Requested By: <i>(Name/Company/Title)</i>	Jeffery Marks/CH2M HILL		Response Requested by Date:	6/17/2010	
<b>REPLY:</b>					
Responded By: <i>(Name/Company/Title)</i>	<del>Robert Simcik, TtNUS, Project Manager</del>		Date of Response:		
<b>RESPONSE DISPOSITION/ CONCURRENCE:</b>	Based on conversations with Tetra Tech and FDEP on June 18, 2010 BRAC PMO is satisfied with the change in depth to one foot below the water table. Also the distance from building 502 to the west on the work plan states 15 feet but during field measurements this was 19 feet. Rather than overlap the new backfill by one foot as shown on the plans this will now just overlap in new backfill from recent tank pull.				



**REQUEST FOR INFORMATION**

Project Name/Description:	Excavation of Petroleum Contaminated Soil at Buildings 502 and 290A	RFI No.:	01 (Revision 01)	Date Submitted:	6/17/2010
Response Dispositioned / Concurrred With By: (Name/Company/Title)	Art Sanford, BRAC PMO SE, RPM		Date Response Dispositioned Concurrred With: 6/18/2010		
<b>FURTHER ACTIONS REQUIRED:</b>					
<b>REVIEW DISTRIBUTION</b>			<b>FINAL DISTRIBUTION</b>		
<input checked="" type="checkbox"/> CH2M HILL PM	<input checked="" type="checkbox"/> Robert Simeik/TiNUS	<input type="checkbox"/>	<input checked="" type="checkbox"/> CH2M HILL PM	<input checked="" type="checkbox"/> Robert Simeik/TiNUS	<input type="checkbox"/>
<input checked="" type="checkbox"/> CH2M HILL CM	<input checked="" type="checkbox"/> Art Sanford/BRAC PMO SE	<input type="checkbox"/>	<input checked="" type="checkbox"/> CH2M HILL CM	<input checked="" type="checkbox"/> Art Sanford/BRAC PMO SE	<input type="checkbox"/>
<input checked="" type="checkbox"/> CH2M HILL QC	<input checked="" type="checkbox"/> Mike Halil/CH2M HILL	<input checked="" type="checkbox"/> Project Files	<input checked="" type="checkbox"/> CH2M HILL QC	<input checked="" type="checkbox"/> Mike Halil/CH2M HILL	<input checked="" type="checkbox"/> Project Files

Appendix D  
Waste Characterization Laboratory Analytical Reports

---

# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

**7979 GSRI Rd.**

**Baton Rouge, LA 70820**

**Report Date**

**GCAL Report 210061106**



**Deliver To** CH2M Hill Constructors, Inc  
Northpark 400  
1000 Abernathy Rd, Suite 1600  
Atlanta, GA 30328  
770-604-9182 Ext. 54385

**Attn** Kama White

**Project** CTO-60 - Site Remediation

# Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

## Common Abbreviations Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with [NELAC](#), this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

---

Robyn Miguez  
Technical Director  
**GCAL REPORT 210061106**

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21006110601	60502WCS061010	Solid	06/10/2010 16:00	06/11/2010 08:00
21006110602	60290AWCS061010	Solid	06/10/2010 16:45	06/11/2010 07:27

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21006110601	60502WCS061010	Solid	06/10/2010 16:00	06/11/2010 08:00

## SW-846 7470A TCLP

CAS#	Parameter	Result	RDL	MDL	Units
7439-97-6	Mercury	0.00007B	0.0020	0.000055	mg/L

## SW-846 6010B TCLP

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.38B	5.00	0.0015	mg/L
7440-47-3	Chromium	0.0040B	0.25	0.0016	mg/L
7439-92-1	Lead	0.069B	0.50	0.0073	mg/L

## SW-846 9045C pH

CAS#	Parameter	Result	RDL	MDL	Units
pH	pH	7.02	1.00	1.00	pH unit

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21006110602	60290AWCS061010	Solid	06/10/2010 16:45	06/11/2010 07:27

## SW-846 6010B TCLP

CAS#	Parameter	Result	RDL	MDL	Units
7440-39-3	Barium	0.21B	5.00	0.0015	mg/L
7439-92-1	Lead	0.074B	0.50	0.0073	mg/L
7782-49-2	Selenium	0.023B	0.50	0.019	mg/L
7440-22-4	Silver	0.0057B	0.25	0.0029	mg/L

## SW-846 9045C pH

CAS#	Parameter	Result	RDL	MDL	Units
pH	pH	6.15	1.00	1.00	pH unit

<b>GCAL ID</b> 21006110601	<b>Client ID</b> 60502WCS061010	<b>Matrix</b> Solid	<b>Collect Date/Time</b> 06/10/2010 16:00	<b>Receive Date/Time</b> 06/11/2010 08:00
-------------------------------	------------------------------------	------------------------	--	--

SW-846 8260B TCLP

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 40	<b>Analyzed</b> 06/16/2010 10:37	<b>By</b> AGC	<b>Analytical Batch</b> 434580
------------------	-------------------	--------------------	-----------------------	-------------------------------------	------------------	-----------------------------------

CAS#	Parameter	Result	RDL	MDL	Units
75-35-4	1,1-Dichloroethene	0.200U	0.200	0.00656	mg/L
107-06-2	1,2-Dichloroethane	0.200U	0.200	0.00344	mg/L
78-93-3	2-Butanone	0.200U	0.200	0.00373	mg/L
71-43-2	Benzene	0.200U	0.200	0.00217	mg/L
56-23-5	Carbon tetrachloride	0.200U	0.200	0.00592	mg/L
108-90-7	Chlorobenzene	0.200U	0.200	0.00110	mg/L
67-66-3	Chloroform	0.200U	0.200	0.00226	mg/L
127-18-4	Tetrachloroethene	0.200U	0.200	0.00484	mg/L
79-01-6	Trichloroethene	0.200U	0.200	0.00247	mg/L
75-01-4	Vinyl chloride	0.200U	0.200	0.00372	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	2000	1790	ug/L	90	62 - 130
1868-53-7	Dibromofluoromethane	2000	2000	ug/L	100	65 - 127
2037-26-5	Toluene d8	2000	2130	ug/L	107	71 - 134
17060-07-0	1,2-Dichloroethane-d4	2000	1970	ug/L	99	62 - 127

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21006110601	60502WCS061010	Solid	06/10/2010 16:00	06/11/2010 08:00

SW-846 8270C TCLP

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
06/14/2010 11:30	434193	3510C	1	06/15/2010 15:35	RLY	434475

CAS#	Parameter	Result	RDL	MDL	Units
106-46-7	1,4-Dichlorobenzene	0.0500U	0.0500	0.0006	mg/L
95-95-4	2,4,5-Trichlorophenol	0.0500U	0.0500	0.0006	mg/L
88-06-2	2,4,6-Trichlorophenol	0.0500U	0.0500	0.0008	mg/L
121-14-2	2,4-Dinitrotoluene	0.0500U	0.0500	0.0012	mg/L
1319-77-3	Cresols	0.1000U	0.1000	0.0024	mg/L
118-74-1	Hexachlorobenzene	0.0500U	0.0500	0.0013	mg/L
87-68-3	Hexachlorobutadiene	0.0500U	0.0500	0.0011	mg/L
67-72-1	Hexachloroethane	0.0500U	0.0500	0.0055	mg/L
98-95-3	Nitrobenzene	0.0500U	0.0500	0.0011	mg/L
87-86-5	Pentachlorophenol	0.2500U	0.2500	0.0076	mg/L
110-86-1	Pyridine	0.0500U	0.0500	0.0077	mg/L
1319-77-3MP	m,p-Cresol	0.0500U	0.0500	0.0017	mg/L
95-48-7	o-Cresol	0.0500U	0.0500	0.0009	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	250	234	ug/L	94	48 - 123
321-60-8	2-Fluorobiphenyl	250	236	ug/L	94	16 - 128
1718-51-0	Terphenyl-d14	250	243	ug/L	97	38 - 167
4165-62-2	Phenol-d5	500	186	ug/L	37	10 - 123
367-12-4	2-Fluorophenol	500	283	ug/L	57	10 - 120
118-79-6	2,4,6-Tribromophenol	500	480	ug/L	96	44 - 121

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110601	60502WCS061010	Solid	06/10/2010 16:00	06/11/2010 08:00

SW-846 8081B TCLP

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
06/14/2010 15:00	434194	3510C	1	06/16/2010 23:29	TLS	434732

CAS#	Parameter	Result	RDL	MDL	Units
57-74-9	Chlordane	0.02500U	0.02500	0.00016	mg/L
72-20-8	Endrin	0.00100U	0.00100	0.00003	mg/L
76-44-8	Heptachlor	0.00050U	0.00050	0.00002	mg/L
1024-57-3	Heptachlor epoxide	0.00050U	0.00050	0.00005	mg/L
72-43-5	Methoxychlor	0.02500U	0.02500	0.00009	mg/L
8001-35-2	Toxaphene	0.25000U	0.25000	0.00050	mg/L
58-89-9	gamma-BHC (Lindane)	0.00050U	0.00050	0.00003	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
877-09-8	Tetrachloro-m-xylene	5	5.06	ug/L	101	48 - 137
2051-24-3	Decachlorobiphenyl	5	5.43	ug/L	109	30 - 139

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110601	60502WCS061010	Solid	06/10/2010 16:00	06/11/2010 08:00

SW-846 8151A TCLP

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
06/12/2010 07:30	434258	3510C	1	06/16/2010 16:29	TLS	434709

CAS#	Parameter	Result	RDL	MDL	Units
94-75-7	2,4'-D	0.00500U	0.00500	0.00072	mg/L
93-72-1	2,4,5-TP (Silvex)	0.00500U	0.00500	0.00054	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
19719-28-9	DCAA	20	19.6	ug/L	98	18 - 136

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21006110601	60502WCS061010	Solid	06/10/2010 16:00	06/11/2010 08:00

SW-846 6010B TCLP

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
06/13/2010 11:20	434276	SW-846 3010A	5	06/16/2010 17:52	TEA	434639

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.00U	1.00	0.015	mg/L
<b>7440-39-3</b>	<b>Barium</b>	<b>0.38B</b>	<b>5.00</b>	<b>0.0015</b>	<b>mg/L</b>
7440-43-9	Cadmium	0.050U	0.050	0.00082	mg/L
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.0040B</b>	<b>0.25</b>	<b>0.0016</b>	<b>mg/L</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>0.069B</b>	<b>0.50</b>	<b>0.0073</b>	<b>mg/L</b>
7782-49-2	Selenium	0.50U	0.50	0.019	mg/L
7440-22-4	Silver	0.25U	0.25	0.0029	mg/L

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110601	60502WCS061010	Solid	06/10/2010 16:00	06/11/2010 08:00

SW-846 7470A TCLP

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
06/13/2010 07:20	434277	SW-846 7470A	1	06/14/2010 12:12	KAW	434363

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
7439-97-6	Mercury	0.00007B	0.0020	0.000055	mg/L

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110601	60502WCS061010	Solid	06/10/2010 16:00	06/11/2010 08:00

SW-846 9045C pH

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	06/13/2010 06:30	OLT	434287

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
pH	pH	7.02	1.00	1.00	pH unit

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110601	60502WCS061010	Solid	06/10/2010 16:00	06/11/2010 08:00

SW-846 1030

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	06/16/2010 10:40	DJH	434609

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
000000-01-7	Ignitable	NO			

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110602	60290AWCS061010	Solid	06/10/2010 16:45	06/11/2010 07:27

SW-846 8260B TCLP

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			40	06/16/2010 10:59	AGC	434580

CAS#	Parameter	Result	RDL	MDL	Units
75-35-4	1,1-Dichloroethene	0.200U	0.200	0.00656	mg/L
107-06-2	1,2-Dichloroethane	0.200U	0.200	0.00344	mg/L
78-93-3	2-Butanone	0.200U	0.200	0.00373	mg/L
71-43-2	Benzene	0.200U	0.200	0.00217	mg/L
56-23-5	Carbon tetrachloride	0.200U	0.200	0.00592	mg/L
108-90-7	Chlorobenzene	0.200U	0.200	0.00110	mg/L
67-66-3	Chloroform	0.200U	0.200	0.00226	mg/L
127-18-4	Tetrachloroethene	0.200U	0.200	0.00484	mg/L
79-01-6	Trichloroethene	0.200U	0.200	0.00247	mg/L
75-01-4	Vinyl chloride	0.200U	0.200	0.00372	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	2000	1820	ug/L	91	62 - 130
1868-53-7	Dibromofluoromethane	2000	2030	ug/L	102	65 - 127
2037-26-5	Toluene d8	2000	2170	ug/L	109	71 - 134
17060-07-0	1,2-Dichloroethane-d4	2000	2000	ug/L	100	62 - 127

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21006110602	60290AWCS061010	Solid	06/10/2010 16:45	06/11/2010 07:27

SW-846 8270C TCLP

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
06/14/2010 11:30	434193	3510C	1	06/15/2010 15:51	RLY	434475

CAS#	Parameter	Result	RDL	MDL	Units
106-46-7	1,4-Dichlorobenzene	0.0500U	0.0500	0.0006	mg/L
95-95-4	2,4,5-Trichlorophenol	0.0500U	0.0500	0.0006	mg/L
88-06-2	2,4,6-Trichlorophenol	0.0500U	0.0500	0.0008	mg/L
121-14-2	2,4-Dinitrotoluene	0.0500U	0.0500	0.0012	mg/L
1319-77-3	Cresols	0.1000U	0.1000	0.0024	mg/L
118-74-1	Hexachlorobenzene	0.0500U	0.0500	0.0013	mg/L
87-68-3	Hexachlorobutadiene	0.0500U	0.0500	0.0011	mg/L
67-72-1	Hexachloroethane	0.0500U	0.0500	0.0055	mg/L
98-95-3	Nitrobenzene	0.0500U	0.0500	0.0011	mg/L
87-86-5	Pentachlorophenol	0.2500U	0.2500	0.0076	mg/L
110-86-1	Pyridine	0.0500U	0.0500	0.0077	mg/L
1319-77-3MP	m,p-Cresol	0.0500U	0.0500	0.0017	mg/L
95-48-7	o-Cresol	0.0500U	0.0500	0.0009	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	250	225	ug/L	90	48 - 123
321-60-8	2-Fluorobiphenyl	250	221	ug/L	88	16 - 128
1718-51-0	Terphenyl-d14	250	227	ug/L	91	38 - 167
4165-62-2	Phenol-d5	500	175	ug/L	35	10 - 123
367-12-4	2-Fluorophenol	500	284	ug/L	57	10 - 120
118-79-6	2,4,6-Tribromophenol	500	436	ug/L	87	44 - 121

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110602	60290AWCS061010	Solid	06/10/2010 16:45	06/11/2010 07:27

SW-846 8081B TCLP

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
06/14/2010 15:00	434194	3510C	1	06/16/2010 23:48	TLS	434732

CAS#	Parameter	Result	RDL	MDL	Units
57-74-9	Chlordane	0.02500U	0.02500	0.00016	mg/L
72-20-8	Endrin	0.00100U	0.00100	0.00003	mg/L
76-44-8	Heptachlor	0.00050U	0.00050	0.00002	mg/L
1024-57-3	Heptachlor epoxide	0.00050U	0.00050	0.00005	mg/L
72-43-5	Methoxychlor	0.02500U	0.02500	0.00009	mg/L
8001-35-2	Toxaphene	0.25000U	0.25000	0.00050	mg/L
58-89-9	gamma-BHC (Lindane)	0.00050U	0.00050	0.00003	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
877-09-8	Tetrachloro-m-xylene	5	5.35	ug/L	107	48 - 137
2051-24-3	Decachlorobiphenyl	5	5.35	ug/L	107	30 - 139

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110602	60290AWCS061010	Solid	06/10/2010 16:45	06/11/2010 07:27

SW-846 8151A TCLP

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
06/12/2010 07:30	434258	3510C	1	06/16/2010 16:44	TLS	434709

CAS#	Parameter	Result	RDL	MDL	Units
94-75-7	2,4'-D	0.00500U	0.00500	0.00072	mg/L
93-72-1	2,4,5-TP (Silvex)	0.00500U	0.00500	0.00054	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
19719-28-9	DCAA	20	10.1	ug/L	51	18 - 136

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21006110602	60290AWCS061010	Solid	06/10/2010 16:45	06/11/2010 07:27

SW-846 6010B TCLP

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
06/13/2010 11:20	434276	SW-846 3010A	5	06/16/2010 18:32	TEA	434639

CAS#	Parameter	Result	RDL	MDL	Units
7440-38-2	Arsenic	1.00U	1.00	0.015	mg/L
<b>7440-39-3</b>	<b>Barium</b>	<b>0.21B</b>	<b>5.00</b>	<b>0.0015</b>	<b>mg/L</b>
7440-43-9	Cadmium	0.050U	0.050	0.00082	mg/L
7440-47-3	Chromium	0.25U	0.25	0.0016	mg/L
<b>7439-92-1</b>	<b>Lead</b>	<b>0.074B</b>	<b>0.50</b>	<b>0.0073</b>	<b>mg/L</b>
<b>7782-49-2</b>	<b>Selenium</b>	<b>0.023B</b>	<b>0.50</b>	<b>0.019</b>	<b>mg/L</b>
<b>7440-22-4</b>	<b>Silver</b>	<b>0.0057B</b>	<b>0.25</b>	<b>0.0029</b>	<b>mg/L</b>

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110602	60290AWCS061010	Solid	06/10/2010 16:45	06/11/2010 07:27

SW-846 7470A TCLP

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
06/13/2010 07:20	434277	SW-846 7470A	1	06/14/2010 12:22	KAW	434363

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
7439-97-6	Mercury	0.0020U	0.0020	0.000055	mg/L

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110602	60290AWCS061010	Solid	06/10/2010 16:45	06/11/2010 07:27

SW-846 9045C pH

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	06/13/2010 06:15	OLT	434287

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
	pH	6.15	1.00	1.00	pH unit

RESULTS REPORTED ON A WET WEIGHT BASIS

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21006110602	60290AWCS061010	Solid	06/10/2010 16:45	06/11/2010 07:27

SW-846 1030

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	06/16/2010 10:53	DJH	434609

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>MDL</b>	<b>Units</b>
000000-01-7	Ignitable	NO			

RESULTS REPORTED ON A WET WEIGHT BASIS

# GC/MS Volatiles Quality Control Summary

Analytical Batch 434580 Prep Batch N/A		Client ID MB434580 GCAL ID 844428 Sample Type Method Blank Analytical Date 06/16/2010 09:51 Matrix Water		LCS434580 844429 LCS 06/16/2010 08:36 Water			LCSD434580 844430 LCSD 06/16/2010 09:29 Water				
SW-846 8260B TCLP		Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
56-23-5	Carbon tetrachloride	0.00500U	0.00500	0.050	0.052	104	76 - 128	0.047	94	10	30
67-66-3	Chloroform	0.00500U	0.00500	0.050	0.051	103	75 - 122	0.047	94	8	30
107-06-2	1,2-Dichloroethane	0.00500U	0.00500	0.050	0.050	100	71 - 129	0.045	90	11	30
78-93-3	2-Butanone	0.00500U	0.00500	0.050	0.045	90	58 - 137	0.038	75	17	30
127-18-4	Tetrachloroethene	0.00500U	0.00500	0.050	0.051	103	68 - 128	0.048	97	6	30
75-01-4	Vinyl chloride	0.00500U	0.00500	0.050	0.055	110	68 - 132	0.044	87	22	30
75-35-4	1,1-Dichloroethene	0.00500U	0.00500	0.050	0.054	108	69 - 129	0.044	88	20	20
71-43-2	Benzene	0.00500U	0.00500	0.050	0.054	107	70 - 129	0.049	99	10	20
79-01-6	Trichloroethene	0.00500U	0.00500	0.050	0.052	103	76 - 129	0.048	95	8	20
108-90-7	Chlorobenzene	0.00500U	0.00500	0.050	0.048	97	74 - 123	0.045	90	6	20
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene	44.6	89	50	50.7	101	62 - 130	51.4	103		
1868-53-7	Dibromofluoromethane	48.9	98	50	50.4	101	65 - 127	50.4	101		
2037-26-5	Toluene d8	52.6	105	50	48.5	97	71 - 134	48.8	98		
17060-07-0	1,2-Dichloroethane-d4	50	100	50	50.3	101	62 - 127	49.3	99		

Analytical Batch 434580 Prep Batch N/A		Client ID 60502WCS061010 GCAL ID 21006110601 Sample Type SAMPLE Analytical Date 06/16/2010 10:37 Matrix Solid		842365MS 844545 MS 06/16/2010 12:30 Solid			842365MSD 844546 MSD 06/16/2010 12:53 Solid				
SW-846 8260B TCLP		Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
56-23-5	Carbon tetrachloride	0.00	0.200	2.00	1.96	98	76 - 128	1.71	86	14	30
67-66-3	Chloroform	0.00	0.200	2.00	1.91	96	75 - 122	1.81	91	5	30
107-06-2	1,2-Dichloroethane	0.00	0.200	2.00	1.94	97	71 - 129	1.81	91	7	30
78-93-3	2-Butanone	0.00	0.200	2.00	1.77	89	58 - 137	1.67	84	6	30
127-18-4	Tetrachloroethene	0.00	0.200	2.00	1.96	98	68 - 128	1.83	92	7	30
75-01-4	Vinyl chloride	0.00	0.200	2.00	1.68	84	68 - 132	1.56	78	7	30
75-35-4	1,1-Dichloroethene	0.00	0.200	2.00	1.72	86	69 - 129	1.62	81	6	30
71-43-2	Benzene	0.00	0.200	2.00	2.04	102	70 - 129	1.84	92	10	30
79-01-6	Trichloroethene	0.00	0.200	2.00	1.95	98	76 - 129	1.73	87	12	30

# GC/MS Volatiles Quality Control Summary

<b>Analytical Batch</b> 434580 <b>Prep Batch</b> N/A		<b>Client ID</b> 60502WCS061010 <b>GCAL ID</b> 21006110601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 06/16/2010 10:37 <b>Matrix</b> Solid			<b>842365MS</b> 844545 MS 06/16/2010 12:30 Solid			<b>842365MSD</b> 844546 MSD 06/16/2010 12:53 Solid			
<b>SW-846 8260B TCLP</b>		<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
108-90-7	Chlorobenzene	0.00	0.200	2.00	1.88	94	74 - 123	1.75	88	7	30
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene	1790	90	2000	2060	103	62 - 130	2050	103		
1868-53-7	Dibromofluoromethane	2000	100	2000	2080	104	65 - 127	1990	100		
2037-26-5	Toluene d8	2130	107	2000	1990	100	71 - 134	1980	99		
17060-07-0	1,2-Dichloroethane-d4	1970	99	2000	2100	105	62 - 127	2030	102		

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 434475 Prep Batch 434193 Prep Method 3510C		Client ID MB434193 GCAL ID 842573 Sample Type Method Blank Prep Date 06/14/2010 11:30 Analytical Date 06/15/2010 14:34 Matrix Water			LCS434193 842574 LCS 06/14/2010 11:30 06/15/2010 16:06 Water			LCSD434193 842575 LCSD 06/14/2010 11:30 06/15/2010 15:05 Water			
SW-846 8270C TCLP		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
118-74-1	Hexachlorobenzene	0.0500U	0.0500	0.100	0.089	89	61 - 120	0.091	91	2	30
87-68-3	Hexachlorobutadiene	0.0500U	0.0500	0.100	0.055	55	17 - 120	0.054	54	2	30
67-72-1	Hexachloroethane	0.0500U	0.0500	0.100	0.057	57	21 - 120	0.056	56	2	30
95-48-7	o-Cresol	0.0500U	0.0500	0.100	0.060	60	31 - 120	0.060	60	0	30
98-95-3	Nitrobenzene	0.0500U	0.0500	0.100	0.075	75	53 - 120	0.074	74	1	30
95-95-4	2,4,5-Trichlorophenol	0.0500U	0.0500	0.100	0.074	74	60 - 120	0.077	77	4	30
88-06-2	2,4,6-Trichlorophenol	0.0500U	0.0500	0.100	0.075	75	59 - 120	0.079	79	5	30
110-86-1	Pyridine	0.0500U	0.0500	0.100	0.056	56	2 - 120	0.052	52	7	30
1319-77-3	Cresols	0.1000U	0.1000	0.200	0.168	84	60 - 120	0.171	86	2	30
1319-77-3MP	m,p-Cresol	0.0500U	0.0500	0.100	0.108	108	24 - 120	0.111	111	3	30
106-46-7	1,4-Dichlorobenzene	0.0500U	0.0500	0.100	0.060	60	22 - 120	0.059	59	2	30
121-14-2	2,4-Dinitrotoluene	0.0500U	0.0500	0.100	0.089	89	37 - 138	0.088	88	1	30
87-86-5	Pentachlorophenol	0.2500U	0.2500	0.100	0.072	72	25 - 158	0.070	70	3	30
<b>Surrogate</b>											
4165-60-0	Nitrobenzene-d5	47.8	96	50	47.3	95	48 - 123	45.9	92		
321-60-8	2-Fluorobiphenyl	39.2	78	50	38.6	77	16 - 128	41.3	83		
1718-51-0	Terphenyl-d14	50.3	101	50	49.5	99	38 - 167	50.2	100		
4165-62-2	Phenol-d5	29.8	30	100	33.3	33	10 - 123	32.9	33		
367-12-4	2-Fluorophenol	49.4	49	100	52.7	53	10 - 120	54.4	54		
118-79-6	2,4,6-Tribromophenol	93.8	94	100	99.4	99	44 - 121	94.5	95		

# General Chromatography Quality Control Summary

Analytical Batch 434732 Prep Batch 434194 Prep Method 3510C		Client ID MB434194 GCAL ID 842578 Sample Type Method Blank Prep Date 06/14/2010 15:00 Analytical Date 06/16/2010 14:10 Matrix Water		LCS434194 842579 LCS 06/14/2010 15:00 06/16/2010 14:29 Water			LCSD434194 842580 LCSD 06/14/2010 15:00 06/16/2010 14:47 Water						
SW-846 8081B TCLP				Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
				Result	RDL	Added			Limits % R				Limit
1024-57-3	Heptachlor epoxide	0.00050U	0.00050	0.00050	0.00046	91	69 - 130	0.00060	121	26	40		
72-43-5	Methoxychlor	0.02500U	0.02500	0.00050	0.00038	76	56 - 135	0.00052	103	31	40		
8001-35-2	Toxaphene	0.25000U	0.25000										
57-74-9	Chlordane	0.02500U	0.02500										
58-89-9	gamma-BHC (Lindane)	0.00050U	0.00050	0.00050	0.00041	82	70 - 130	0.00054	108	27	40		
76-44-8	Heptachlor	0.00050U	0.00050	0.00050	0.00038	76	65 - 130	0.00051	102	29	40		
72-20-8	Endrin	0.00100U	0.00100	0.00050	0.00044	88	67 - 136	0.00061	121	32	40		
<b>Surrogate</b>													
877-09-8	Tetrachloro-m-xylene	.439	88	.5	.426	85	48 - 137	.536	107				
2051-24-3	Decachlorobiphenyl	.38	76	.5	.272	54	30 - 139	.291	58				

Analytical Batch 434732 Prep Batch 434194 Prep Method 3510C		Client ID BLACK BEAUTY GCAL ID 21006101005 Sample Type SAMPLE Prep Date 06/14/2010 15:00 Analytical Date 06/16/2010 19:10 Matrix Solid		842013MS 842581 MS 06/14/2010 15:00 06/16/2010 19:28 Solid			842013MSD 842582 MSD 06/14/2010 15:00 06/16/2010 19:47 Solid						
SW-846 8081B TCLP				Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
				Result	RDL	Added			Limits % R				Limit
1024-57-3	Heptachlor epoxide	0.00000	0.00500	0.00500	0.00566	113	69 - 130	0.00600	120	6	40		
72-43-5	Methoxychlor	0.00000	0.25000	0.00500	0.00515	103	56 - 135	0.00546	109	6	40		
58-89-9	gamma-BHC (Lindane)	0.00000	0.00500	0.00500	0.00512	102	70 - 130	0.00539	108	5	40		
76-44-8	Heptachlor	0.00000	0.00500	0.00500	0.00508	102	65 - 130	0.00524	105	3	40		
72-20-8	Endrin	0.00000	0.01000	0.00500	0.00577	115	67 - 136	0.00615	123	6	40		
<b>Surrogate</b>													
877-09-8	Tetrachloro-m-xylene			5	5.51	110	48 - 137	5.32	106				
2051-24-3	Decachlorobiphenyl			5	5.25	105	30 - 139	5.27	105				

# General Chromatography Quality Control Summary

<b>Analytical Batch</b> 434709 <b>Prep Batch</b> 434258 <b>Prep Method</b> 3510C	<b>Client ID</b> MB434258 <b>GCAL ID</b> 842954 <b>Sample Type</b> Method Blank <b>Prep Date</b> 06/12/2010 07:30 <b>Analytical Date</b> 06/16/2010 11:38 <b>Matrix</b> Water	LCS434258 842955 LCS 06/12/2010 07:30 06/16/2010 11:53 Water	LCSD434258 842956 LCSD 06/12/2010 07:30 06/16/2010 12:07 Water								
<b>SW-846 8151A TCLP</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>	
94-75-7	2,4'-D	0.00500U	0.00500	0.00100	0.00096	96	29 - 143	0.00107	107	11	40
93-72-1	2,4,5-TP (Silvex)	0.00500U	0.00500	0.00100	0.00098	98	44 - 130	0.00107	107	9	40
<b>Surrogate</b>											
19719-28-9	DCAA	1.81	91	2	1.75	88	18 - 136	1.85	93		

<b>Analytical Batch</b> 434709 <b>Prep Batch</b> 434258 <b>Prep Method</b> 3510C	<b>Client ID</b> DLP SPECIALTY CHEMICAL <b>GCAL ID</b> 21006101003 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 06/12/2010 07:30 <b>Analytical Date</b> 06/16/2010 12:51 <b>Matrix</b> Solid	842011MS 842957 MS 06/12/2010 07:30 06/16/2010 13:06 Solid	842011MSD 842958 MSD 06/12/2010 07:30 06/16/2010 13:20 Solid								
<b>SW-846 8151A TCLP</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>	
94-75-7	2,4'-D	0.00000	0.05000	0.01000	0.01110	111	30 - 164	0.00970	97	13	40
93-72-1	2,4,5-TP (Silvex)	0.00000	0.05000	0.01000	0.00972	97	42 - 155	0.01050	105	8	40
<b>Surrogate</b>											
19719-28-9	DCAA			20	20.4	102	18 - 136	16.3	82		

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 434639 <b>Prep Batch</b> 434276 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB434276 <b>GCAL ID</b> 843065 <b>Sample Type</b> Method Blank <b>Prep Date</b> 06/13/2010 11:20 <b>Analytical Date</b> 06/16/2010 17:39 <b>Matrix</b> Water	LCS434276 843066 LCS 06/13/2010 11:20 06/16/2010 17:45 Water			
<b>SW-846 6010B TCLP</b>					
	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-38-2 Arsenic	0.20U 0.20	0.50	0.48	96	80 - 120
7440-39-3 Barium	0.00071B 1.00	0.50	0.48	95	80 - 120
7440-43-9 Cadmium	0.010U 0.010	0.50	0.48	95	80 - 120
7440-47-3 Chromium	0.050U 0.050	0.50	0.46	92	80 - 120
7439-92-1 Lead	0.10U 0.10	0.50	0.47	95	80 - 120
7782-49-2 Selenium	0.016B 0.10	0.50	0.56	111	80 - 120
7440-22-4 Silver	0.050U 0.050	0.50	0.51	102	80 - 120

<b>Analytical Batch</b> 434639 <b>Prep Batch</b> 434276 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> 60502WCS061010 <b>GCAL ID</b> 21006110601 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 06/13/2010 11:20 <b>Analytical Date</b> 06/16/2010 17:52 <b>Matrix</b> Solid	842365MS 843067 MS 06/13/2010 11:20 06/16/2010 17:58 Solid	842365MSD 843068 MSD 06/13/2010 11:20 06/16/2010 18:05 Solid						
<b>SW-846 6010B TCLP</b>									
	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7440-38-2 Arsenic	0.0 1.00	0.50	0.46	91	75 - 125	0.44	88	4	20
7440-39-3 Barium	0.38 5.00	0.50	0.83	91	75 - 125	0.86	98	4	20
7440-43-9 Cadmium	0.0 0.050	0.50	0.47	94	75 - 125	0.47	94	0	20
7440-47-3 Chromium	0.0040 0.25	0.50	0.47	93	75 - 125	0.48	94	2	20
7439-92-1 Lead	0.069 0.50	0.50	0.53	92	75 - 125	0.54	95	2	20
7782-49-2 Selenium	0.0 0.50	0.50	0.47	95	75 - 125	0.51	101	8	20
7440-22-4 Silver	0.00090 0.25	0.50	0.49	97	75 - 125	0.50	100	2	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 434363 <b>Prep Batch</b> 434277 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MB434277 <b>GCAL ID</b> 843069 <b>Sample Type</b> Method Blank <b>Prep Date</b> 06/13/2010 07:20 <b>Analytical Date</b> 06/14/2010 12:09 <b>Matrix</b> Water	LCS434277 843070 LCS 06/13/2010 07:20 06/14/2010 12:11 Water			
<b>SW-846 7470A TCLP</b>					
<b>Units</b> mg/L <b>Result</b>	<b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7439-97-6 Mercury	0.0020U	0.0020	0.00500	0.00483	97 80 - 120

<b>Analytical Batch</b> 434363 <b>Prep Batch</b> 434277 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> 60502WCS061010 <b>GCAL ID</b> 21006110601 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 06/13/2010 07:20 <b>Analytical Date</b> 06/14/2010 12:12 <b>Matrix</b> Solid	842365MS 843071 MS 06/13/2010 07:20 06/14/2010 12:14 Solid	842365MSD 843072 MSD 06/13/2010 07:20 06/14/2010 12:16 Solid						
<b>SW-846 7470A TCLP</b>									
<b>Units</b> mg/L <b>Result</b>	<b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
7439-97-6 Mercury	0.00007	0.0020	0.00500	0.00495	98	75 - 125	0.00505	100	2 20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 434287 <b>Prep Batch</b> N/A	<b>Client ID</b> 60502WCS061010 <b>GCAL ID</b> 21006110601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 06/13/2010 06:30 <b>Matrix</b> Solid	842365DUP 843089 DUP 06/13/2010 06:30 Solid
<b>SW-846 9045C pH</b>	<b>Units</b> pH unit <b>Result</b> 7.02 <b>RDL</b> 1.00	<b>Result</b> 7.05 <b>RPD</b> 0.4 <b>RPD Limit</b> 6
pH                      pH		



## Appendix E

### Waste Profiles

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# Generator's Non-hazardous Waste Profile Sheet

Requested Disposal Facility: Chesser Island Landfill Profile Number: 105654GA

Renewal for Profile Number: \_\_\_\_\_ Waste Approval Expiration Date: \_\_\_\_\_

Check here if there are multiple generating locations for this waste. Attach additional locations.

## A. Waste Generator Facility Information (must reflect location of waste generation/origin)

- 1. Generator Name: NAVFAC SE PWD Jacksonville
- 2. Site Address: BOX 5 CODE PRJX41 NAVAL AIR STATION
- 3. City/ZIP: JACKSONVILLE 32212-005
- 4. State: Fl
- 5. County: Duval
- 6. Contact Name/Title: KENNY HENDL
- 7. Email Address: \_\_\_\_\_
- 8. Phone: 904-542-5979
- 9. FAX: \_\_\_\_\_
- 10. NAICS Code: \_\_\_\_\_
- 11. Generator USEPA ID #: FL5170022474
- 12. State ID# (if applicable): \_\_\_\_\_

## B. Customer Information same as above

P. O. Number: \_\_\_\_\_

- 1. Customer Name: Environmental Remediation Services, Inc.
- 2. Billing Address: 760 Talleyrand Avenue
- 3. City, State and ZIP: Jacksonville, Florida, 32202
- 4. Contact Name: Louis Renteria
- 5. Contact Email: l.renteria@ersfl.com
- 6. Phone: 904-791-9992
- 7. Transporter Name: \_\_\_\_\_
- 8. Transporter ID # (if appl.): \_\_\_\_\_
- 9. Transporter Address: \_\_\_\_\_
- 10. City, State and ZIP: \_\_\_\_\_

## C. Waste Stream Information

### 1. DESCRIPTION

a. Common Waste Name: Petroleum Impacted Soil and Debris  
State Waste Code(s): \_\_\_\_\_

b. Describe Process Generating Waste or Source of Contamination:

Impacted soil was generated during the release of Fuel Oil and Diesel from underground storage tanks.

c. Typical Color(s): Brown

d. Strong Odor?  Yes  No Describe: \_\_\_\_\_

e. Physical State at 70°F:  Solid  Liquid  Powder  Semi-Solid or Sludge  Other: \_\_\_\_\_

f. Layers?  Single layer  Multi-layer  NA

g. Water Reactive?  Yes  No If Yes, Describe: \_\_\_\_\_

h. Free Liquid Range (%): \_\_\_\_\_ to \_\_\_\_\_  NA(solid)

i. pH Range: \_\_\_\_\_ to \_\_\_\_\_  NA(solid)

j. Liquid Flash Point:  < 140°F  140°- 199°F  ≥ 200°F  NA(solid)

k. Flammable Solid:  Yes  No

l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%):  (See Attached)

Constituents (Total Composition Must be ≥ 100%)	Lower Range	Unit of Measure	Upper Range	Unit of Measure
1. <u>Soil</u>	<u>0</u>	<u>%</u>	<u>99</u>	<u>%</u>
2. <u>Asphalt</u>	<u>0</u>	<u>%</u>	<u>1</u>	<u>%</u>
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____

### 2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION

a.  One Time Event  Base  Repeat Event

b. Estimated Annual Quantity: 150  Tons  Cubic Yards  Drums  Gallons  Other (specify): \_\_\_\_\_

c. Shipping Frequency: 1 Units per  Month  Quarter  Year  One Time  Other

d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.)  Yes  No

e. USDOT Shipping Description (if applicable): \_\_\_\_\_

### 3. SAFETY REQUIREMENTS (Handling, PPE, etc.): Level D



D. Regulatory Status (Please check appropriate responses)

- 1. Waste Identification:
a. Does the waste meet the definition of a USEPA listed or characteristic hazardous waste...
b. Does the waste meet the definition of a state hazardous waste...
2. Is this waste included in one or more of categories below...
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up...
4. Does the waste represented by this waste profile sheet contain radioactive material...
5. Does the waste represented by this waste profile sheet contain Polychlorinated Biphenyls (PCBs)...
6. Does the waste contain untreated, regulated medical or infectious waste?
7. Does the waste contain asbestos?
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants...

E. Generator Certification (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

- 1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the contractor if applicable).
5. Check all that apply:
a. Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested: # Pages:
b. Only the analysis identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested). Attachment #:
c. Additional information necessary to characterize the profiled waste has been attached (other than analytical, such as MSDS). Indicate the number of attached pages:
d. I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.

Certification Signature: Title:

Company Name: Name (Print):

Date:



Generator's Non-hazardous Waste Profile Sheet

105854GA

D. Regulatory Status (Please check appropriate responses)

- 1. Waste Identification:
a. Does the waste meet the definition of a USEPA listed or characteristic hazardous waste...
b. Does the waste meet the definition of a state hazardous waste...
2. Is this waste included in one or more of categories below...
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up...
4. Does the waste represented by this waste profile sheet contain radioactive material...
5. Does the waste represented by this waste profile sheet contain Polychlorinated Biphenyls (PCBs)...
6. Does the waste contain untreated, regulated medical or infectious waste...
7. Does the waste contain asbestos...
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants...

E. Generator Certification (Please read and certify by signature below)

- By signing this Generator's Waste Profile Sheet, I hereby certify that all:
1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the contractor if applicable).
5. Check all that apply:
a. Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested: # Pages:
b. Only the analysis identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested). Attachment #:
c. Additional information necessary to characterize the profiled waste has been attached (other than analytical, such as MSDS). Indicate the number of attached pages:
d. I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.

Certification Signature: [Signature] Title: ENV PROT SPEC
Company Name: NAKFAC SE PWD Name (Print): JOHN BRUMMETT
Date: 6-21-10

Appendix F  
Non-Hazardous Waste Manifests and Weight Tickets

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6252

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number  
E 6170022474

2. Page 1 of 1  
3. Emergency Response Phone  
904-791-9992

4. Waste Tracking Number  
62201

5. Generator's Name and Mailing Address  
NAVFAC SE PWD  
Bldg 502, Perimeter Rd  
Jacksonville, FL 32221  
Generator's Site Address (if different than mailing address)  
Generator's Phone: 912-496-7918

6. Transporter 1 Company Name  
Beaver Bulk  
U.S. EPA ID Number

7. Transporter 2 Company Name  
U.S. EPA ID Number

8. Designated Facility Name and Site Address  
Chesser Island Landfill  
Highway 121 South  
Folkston, GA  
U.S. EPA ID Number  
Not Required  
Facility's Phone: 912-496-7918

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
1. Petroleum Impacted Soil & Debris (approval # 105654GA)	001	DT	20	Y
2. NA				
3. NA				
4. NA				

13. Special Handling Instructions and Additional Information  
ERB Job No. 10164  
In case of emergency call ERS: (904) 791-9992  
Copy for file  
CTO-0060 (PO# 350277)  
1016401  
By: \_\_\_\_\_

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.  
Generator's/Officer's Printed/Typed Name: JOHN BRUMMETT  
Signature: [Signature]  
Month Day Year: 06/22/10

15. International Shipments  
 Import to U.S.  Export from U.S.  
Port of entry/exit: \_\_\_\_\_  
Date leaving U.S.: \_\_\_\_\_

16. Transporter Acknowledgment of Receipt of Materials  
Transporter Signature (for exports only):  
Transporter 1 Printed/Typed Name: GERALD AYERS  
Signature: [Signature]  
Month Day Year: 6/22/10  
Transporter 2 Printed/Typed Name: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Month Day Year: \_\_\_\_\_

17. Discrepancy  
17a. Discrepancy Indication Space  
 Quantity  Type  Residue  Partial Rejection  Full Rejection  
Manifest Reference Number: \_\_\_\_\_

17b. Alternate Facility (or Generator)  
U.S. EPA ID Number  
Facility's Phone: \_\_\_\_\_

17c. Signature of Alternate Facility (or Generator)  
Month Day Year: \_\_\_\_\_

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a  
Printed/Typed Name: \_\_\_\_\_  
Signature: [Signature]  
Month Day Year: 6/22/10

GENERATOR

TRANSPORTER INT'L

DESIGNATED FACILITY

Driver's Signature



Chesser Island Landfill  
Hwy 121/Chesser Island Rd  
Folkston, GA, 31537  
Ph: (912) 496-7918

Original  
Ticket# 255232

Customer Name ENVIROREMIATION105654GA ENV Carrier BEAVERBULK \*  
Ticket Date 06/22/2010 Vehicle# L252  
Payment Type Credit Account Container  
Manual Ticket# Driver DINO  
Hauling Ticket# Check#  
Route Billing # 0001755  
State Waste Code Gen EPA ID NR  
Manifest 62201 Grid  
Destination  
PO  
Profile 105654GA (PETROLEUM IMPACTED SOIL)  
Generator 157-NAVFAC NAVFAC SW PWD

Volume

Copy for File

2016401

By: \_\_\_\_\_

Time	Scale	Operator	Inbound	Gross	79000 lb
In 06/22/2010 09:35:25	Scale 02	cmosley1		Tare	30200 lb
Out 06/22/2010 09:35:25		cmosley1		Net	48800 lb
				Tons	24.40

Comments

WASTE VIA WASTE MANAGEMENT

SAFETY--SAFETY--SAFETY----GOT IT!!

Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1 ContSoilPet-Tons-C	100	24.40	Tons				DUVAL
2 FUEL-Fuel Surcharg	100		%				DUVAL
3 EVF-P-Standard Env	100		%				DUVAL
4 CRM-COST REIMBURSE	100	24.40	Tons				DUVAL
5 NSF-HOST FEE	100		%				DUVAL
6 SPF-SUPERFUND	100	24.40	Tons				DUVAL
7 HAU-HAUL per ton	100	24.40	Tons				DUVAL

Total Fees  
Total Ticket



**NON-HAZARDOUS WASTE MANIFEST**

1. Generator ID Number  
 Not Required **FL6170022474**

2. Page 1 of 1  
 3. Emergency Response Phone  
 904-791-9992

4. Waste Tracking Number  
**62204 L-200**

5. Generator's Name and Mailing Address  
 NAVFAC SE PWD  
 Bldg 502, Perimeter Rd  
 Jacksonville, FL 32221  
 Generator's Site Address (if different than mailing address)  
 Generator's Phone:

6. Transporter 1 Company Name  
 Beaver Bulk  
 U.S. EPA ID Number

7. Transporter 2 Company Name  
 U.S. EPA ID Number

8. Designated Facility Name and Site Address  
 Chester Island Landfill  
 Highway 121 South  
 Folkston, GA  
 U.S. EPA ID Number  
 Not Required  
 Facility's Phone: 912-496-7918

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
<sup>1</sup> Petroleum Impacted Soil & Debris (approval # 105654GA)	001	DT	20	Y
<sup>2</sup> NA				
<sup>3</sup> NA				
<sup>4</sup> NA				

13. Special Handling Instructions and Additional Information  
 ERS Job No. 10164  
 In case of emergency call ERS: (904) 791-9992  
 Profile # CTO-0060 (PO# 3502749) Copy for file  
 105654GA 1016401  
 By: \_\_\_\_\_

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Officer's Printed/Typed Name  
**John Brummett**  
 Signature  
 [Signature]  
 Month Day Year  
 06 22 10

15. International Shipments  
 Import to U.S.  Export from U.S.  
 Port of entry/exit: \_\_\_\_\_  
 Date leaving U.S.: \_\_\_\_\_

16. Transporter Acknowledgment of Receipt of Materials  
 Transporter 1 Printed/Typed Name  
**Donald Perry**  
 Signature  
**Donald Perry**  
 Month Day Year  
 6 22 10  
 Transporter 2 Printed/Typed Name  
 Signature  
 Month Day Year

17. Discrepancy  
 17a. Discrepancy Indication Space  
 Quantity  Type  Residue  Partial Rejection  Full Rejection

17b. Alternate Facility (or Generator)  
 Manifest Reference Number: \_\_\_\_\_  
 U.S. EPA ID Number

17c. Signature of Alternate Facility (or Generator)  
 Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a  
 Printed/Typed Name  
 Signature  
**Crystal M**  
 Month Day Year  
 6 22 10

GENERATOR  
 INT'L  
 TRANSPORTER  
 DESIGNATED FACILITY

Driver's Signature



Chesser Island Landfill  
Hwy 121/Chesser Island Rd  
Folkston, GA, 31537  
Ph: (912) 496-7918

Original  
Ticket# 255255

Customer Name	ENVIROREMIEDIATION105654GA ENV	Carrier	BEAVERBULK *	Volume
Ticket Date	06/22/2010	Vehicle#	L200	
Payment Type	Credit Account	Container		
Manual Ticket#		Driver	DONALD	
Hauling Ticket#		Check#		
Route		Billing #	0001755	
State Waste Code		Gen EPA ID	NR	
Manifest	62204	Grid		
Destination				
PO				
Profile	105654GA (PETROLEUM IMPACTED SOIL)			
Generator	157-NAVFAC NAVFAC SW PWD			

	Time	Scale	Operator	Inbound	Gross	84340 lb
In	06/22/2010 10:37:11	Scale 02	cmosley1		Tare	31500 lb
Out	06/22/2010 10:37:11		cmosley1		Net	52840 lb
					Tons	26.42

Comments

SAFETY---SAFETY---SAFETY---GOT IT!!

Copy for File

1016401

By: \_\_\_\_\_

Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1 ContSoilPet-Tons-C	100	26.42	Tons				DUVAL
2 FUEL-Fuel Surchary	100		%				DUVAL
3 EVF-F-Standard Env	100		%				DUVAL
4 CRM-COST REIMBURSE	100	26.42	Tons				DUVAL
5 HSF-HOST FEE	100		%				DUVAL
6 SPF-SUPERFUND	100	26.42	Tons				DUVAL
7 HAU-HAUL per ton	100	26.42	Tons				DUVAL

Total Fees  
Total Ticket



L 390

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number **CL6170022474**  
*Not Required*

2. Page 1 of 1

3. Emergency Response Phone  
**904-791-9992**

4. Waste Tracking Number  
**62202**

5. Generator's Name and Mailing Address  
**NAVFAC SE PWD  
Bldg 502, Perimeter Rd  
Jacksonville, FL 32221**  
Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name  
**Beaver Bulk**  
U.S. EPA ID Number

7. Transporter 2 Company Name  
U.S. EPA ID Number

8. Designated Facility Name and Site Address  
**Chesler Island Landfill  
Highway 121 South  
Folkston, GA**  
U.S. EPA ID Number  
**Not Required**  
Facility's Phone: **12-496-7918**

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit WL/Vol.	
	No.	Type			
<sup>1</sup> Petroleum Impacted Soil & Debris (approval # 105654GA)	001	DT	20	Y	
<sup>2</sup> NA					
<sup>3</sup> NA					
<sup>4</sup> NA					

13. Special Handling Instructions and Additional Information  
ERS Job No. 10164  
In case of emergency call ERS: (904) 791-9992.  
*Profile # CTO-0060 (PO# 350277) Copy for File*  
**105654GA 1016401**  
By: \_\_\_\_\_

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Officer's Printed/Typed Name  
**John Brummett**  
Signature  
*[Signature]*  
Month Day Year  
**06 22 10**

15. International Shipments  Import to U.S.  Export from U.S.  
Port of entry/exit: \_\_\_\_\_  
Date leaving U.S.: \_\_\_\_\_

16. Transporter Acknowledgment of Receipt of Materials  
Transporter Signature (for exports only):  
Transporter 1 Printed/Typed Name  
**Jeff McNally**  
Signature  
*[Signature]*  
Month Day Year  
**6 22 10**  
Transporter 2 Printed/Typed Name  
Signature

17. Discrepancy  
17a. Discrepancy Indication Space  Quantity  Type  Residue  Partial Rejection  Full Rejection

Manifest Reference Number: \_\_\_\_\_ U.S. EPA ID Number

17b. Alternate Facility (or Generator)  
Facility's Phone: \_\_\_\_\_

17c. Signature of Alternate Facility (or Generator)  
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a  
Printed/Typed Name  
Signature  
*[Signature]*  
Month Day Year  
**6 22 10**

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

Driver's Signature



Chesser Island Landfill  
Hwy 121/Chesser Island Rd  
Folkston, GA, 31537  
Ph: (912) 496-7918

Original  
Ticket# 255258

Customer Name	ENVIROREMEDATION105654GA ENV	Carrier	BEAVERBULK *	Volume
Ticket Date	06/22/2010	Vehicle#	L390	
Payment Type	Credit Account	Container		
Manual Ticket#		Driver	JEFF	
Hauling Ticket#		Check#		
Route		Billing #	0001755	
State Waste Code		Gen EPA ID	NR	
Manifest	62202	Grid		
Destination				
PO				
Profile	105654GA (PETROLEUM IMPACTED SOIL)			
Generator	157-NAVFAC NAVFAC SW PWD			

	Time	Scale	Operator	Inbound	Gross	81500 lb
In	06/22/2010 10:44:31	Scale 02	cmosley1		Tare	23260 lb
Out	06/22/2010 10:44:31		cmosley1		Net	58240 lb
					Tons	29.12

Comments

SAFETY---SAFETY---SAFETY---GOT IT!!

Copy for File

1 0 1 6 4 0 1

By: \_\_\_\_\_

Product	LDX	Qty	UOM	Rate	Fee	Amount	Origin
1	ContSoilPet-Tons-C	100	29.12	Tons			DUVAL
2	FUEL-Fuel Surcharg	100	%				DUVAL
3	EVF-P-Standard Env	100	%				DUVAL
4	CRM-COST REIMBURSE	100	29.12	Tons			DUVAL
5	HSF-HOST FEE	100	%				DUVAL
6	SPF-SUPERFUND	100	29.12	Tons			DUVAL
7	HAU-HAUL per ton	100	29.12	Tons			DUVAL

Total Fees  
Total Ticket



L392

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: *FL6170022474*

2. Page 1 of *1*

3. Emergency Response Phone: 904-791-9992

4. Waste Tracking Number: *62203*

5. Generator's Name and Mailing Address: NAVFAC SE PWD, Bldg 502, Perimeter Rd, Jacksonville, FL 32221

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: *Beaver Bulk*

U.S. EPA ID Number

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address: *Chesser Island Landfill, Highway 121 South, Folkston, GA*

U.S. EPA ID Number: *Not Required*

Facility's Phone: *912-496-7918*

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
<i>1. Petroleum Impacted Soil &amp; Debris (approval # 105654GA)</i>	<i>001</i>	<i>DT</i>	<i>20</i>	<i>Y</i>
<i>2. NA</i>				
<i>3. NA</i>				
<i>4. NA</i>				

13. Special Handling Instructions and Additional Information: ERS Job No. 10164. In case of emergency call ERS: (904) 791-9992

*Copy for file*  
CTO-0060 (PO# 350277)  
*Profile # 105654CA*  
*1016401*  
By: \_\_\_\_\_

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Officer's Printed/Typed Name: *John Brummett*

Signature: *[Signature]*

Month Day Year: *06 22 10*

15. International Shipments:  Import to U.S.

Export from U.S.

Port of entry/exit:

Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: *Tina McNally*

Signature: *Tina McNally*

Month Day Year: *6 22 10*

Transporter 2 Printed/Typed Name

Signature

Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space:  Quantity  Type  Residue  Partial Rejection  Full Rejection

Manifest Reference Number:

U.S. EPA ID Number

17b. Alternate Facility (or Generator)

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

Signature: *[Signature]*

Month Day Year: *6 22 10*

GENERATOR  
INT'L  
TRANSPORTER  
DESIGNATED FACILITY

Driver's Signature



Chesser Island Landfill  
Hwy 121/Chesser Island Rd  
Folkston, GA, 31537  
Ph: (912) 496-7918

Original  
Ticket# 255259

Customer Name	ENVIROREMIEDIATION105654GA ENV	Carrier	BEAVERBULK *	Volume
Ticket Date	06/22/2010	Vehicle#	1392	
Payment Type	Credit Account	Container		
Manual Ticket#		Driver		
Hauling Ticket#		Check#		
Route		Billing #	0001755	
State Waste Code		Gen EPA ID	NR	
Manifest	62203	Grid		
Destination				
PO				
Profile	105654GA (PETROLEUM IMPACTED SOIL)			
Generator	157-NAVFAC NAVFAC SW PWD			

Time	Scale	Operator	Inbound	Gross	77500 lb
In 06/22/2010 10:46:25	Scale 02	cmosley1		Tare	28640 lb
Out 06/22/2010 10:46:25		cmosley1		Net	48860 lb
				Tons	24.43

Comments

SAFETY---SAFETY---SAFETY---GOT IT!!

Copy for File

1016401

By: \_\_\_\_\_

Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1 ContSoilPet-Tons-C	100	24.43	Tons				DUVAL
2 FUEL-Fuel Surcharg	100		%				DUVAL
3 EVF-P-Standard Env	100		%				DUVAL
4 CRM-COST REIMBURSE	100	24.43	Tons				DUVAL
5 HSF-HOST FEE	100		%				DUVAL
6 SPF-SUPERFUND	100	24.43	Tons				DUVAL
7 HAU-HAUL per ton	100	24.43	Tons				DUVAL

*Tomie*

Total Fees  
Total Ticket



L 320

NON-HAZARDOUS WASTE MANIFEST 1. Generator ID Number FL66170022474 2. Page 1 of 1 3. Emergency Response Phone 904-791-9992 4. Waste Tracking Number 62206

5. Generator's Name and Mailing Address Not Required Generator's Site Address (if different than mailing address) NAVFAC SE PWD Bldg 502, Perimeter Rd Jacksonville, FL 32221

6. Transporter 1 Company Name Beaver Bulk U.S. EPA ID Number

7. Transporter 2 Company Name U.S. EPA ID Number

8. Designated Facility Name and Site Address Chesser Island Landfill Highway 121 South Folkston, GA U.S. EPA ID Number Not Required Facility's Phone: 912-496-7918

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	
	No.	Type			
<sup>1</sup> Petroleum Impacted Soil & Debris (approval # 105654GA)	001	DT	20	Y	
<sup>2</sup> NA					
<sup>3</sup> NA					
<sup>4</sup> NA					

Copy for File

13. Special Handling Instructions and Additional Information  
ERS Job No. 10104  
In case of emergency call ERS: (904) 791-9992  
CTO-0000 (PO# 350277) 6 4 0 1  
By: \_\_\_\_\_

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Officer's Printed/Typed Name John Brumm Signature [Signature] Month Day Year 06 22 10

15. International Shipments  Import to U.S.  Export from U.S. Port of entry/exit: \_\_\_\_\_ Date leaving U.S.: \_\_\_\_\_

16. Transporter Acknowledgment of Receipt of Materials  
Transporter 1 Printed/Typed Name Ricky Signature [Signature] Month Day Year 6 22 10

Transporter 2 Printed/Typed Name \_\_\_\_\_ Signature \_\_\_\_\_ Month Day Year \_\_\_\_\_

17. Discrepancy  
17a. Discrepancy Indication Space  Quantity  Type  Residue  Partial Rejection  Full Rejection  
Manifest Reference Number: \_\_\_\_\_

17b. Alternate Facility (or Generator) U.S. EPA ID Number  
Facility's Phone: \_\_\_\_\_

17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name \_\_\_\_\_ Signature [Signature] Month Day Year 6 22 10

GENERATOR  
INT'L  
TRANSPORTER  
DESIGNATED FACILITY

Driver's Signature



Chesser Island Landfill  
Hwy 121/Chesser Island Rd  
Folkston, GA, 31537  
Ph: (912) 496-7918

Original  
Ticket# 255285

Customer Name ENVIROREMIATION105654GA ENV Carrier BEAVERBULK \*  
Ticket Date 06/22/2010 Vehicle# L320 Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver RICKY :-)  
Hauling Ticket# Check#  
Route Billing # 0001755  
State Waste Code Gen EPA ID NR  
Manifest 62206 Grid  
Destination  
PO  
Profile 105654GA (PETROLEUM IMPACTED SOIL)  
Generator 157-NAVFAC NAVFAC SW PWD

Time Scale Operator Inbound Gross 92640 lb  
In 06/22/2010 11:35:52 Scale 02 cmosley1 Tare 27900 lb  
Out 06/22/2010 11:35:52 cmosley1 Net 64740 lb  
Tons Copy for File 32.37

Comments

SAFETY---SAFETY---SAFETY---GOT IT!!

1 0 1 6 4 0 1

By: \_\_\_\_\_

Product	LDX	Qty	UCM	Rate	Fee	Amount	Origin
1 ContSoilPet-Tons-C	100	32.37	Tons				DUVAL
2 FUEL-Fuel Surcharg	100		%				DUVAL
3 EVF-F-Standard Env	100		%				DUVAL
4 CRM-COST REIMBURSE	100	32.37	Tons				DUVAL
5 HSF-HOST FEE	100		%				DUVAL
6 SPF-SUPERFUND	100	32.37	Tons				DUVAL
7 HAU-HAUL per ton	100	32.37	Tons				DUVAL

Total Fees  
Total Ticket



L380

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <i>EL670022474</i> <small>Not Required</small>	2. Page 1 of 1	3. Emergency Response Phone 904-791-9992	4. Waste Tracking Number 62205
5. Generator's Name and Mailing Address NAVFAC SE PWD Bldg 502, Perimeter Rd Jacksonville, FL 32221			Generator's Site Address (if different than mailing address)		
Generator's Phone:			U.S. EPA ID Number		
6. Transporter 1 Company Name Beaver Bulk			U.S. EPA ID Number		
7. Transporter 2 Company Name			U.S. EPA ID Number		
8. Designated Facility Name and Site Address Chester Island Landfill Highway 121 South Folkston, GA			U.S. EPA ID Number Not Required		
Facility's Phone: 912-496-7918					
9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit Wt./Vol.
		No.	Type		
1. Petroleum Impacted Soil & Debris (approval # 105654GA)		001	DT	20	Y
2. NA					
3. NA					
4. NA					
13. Special Handling Instructions and Additional Information ERS Job No. 10164 In case of emergency call ERS: (904) 791-9992  CTO-0060 (PC# 350277) 1016401 <i>Copy for File</i>					
14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.					
Generator's/Officer's Printed/Typed Name <i>John Brummelt</i>			Signature <i>[Signature]</i>		Month Day Year 06 22 10
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____					
16. Transporter Acknowledgment of Receipt of Materials					
Transporter 1 Printed/Typed Name <i>Richard Ezell</i>			Signature <i>[Signature]</i>		Month Day Year 6 22 10
Transporter 2 Printed/Typed Name			Signature		Month Day Year
17. Discrepancy					
17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
Manifest Reference Number: _____ U.S. EPA ID Number _____					
17b. Alternate Facility (or Generator) _____ U.S. EPA ID Number _____					
Facility's Phone: _____					
17c. Signature of Alternate Facility (or Generator) _____ Month Day Year _____					
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a					
Printed/Typed Name			Signature <i>[Signature]</i>		Month Day Year 6 22 10

Driver's Signature



Chesser Island Landfill  
Hwy 121/Chesser Island Rd  
Folkston, GA, 31537  
Ph: (912) 496-7918

Original  
Ticket# 255286

Customer Name	ENVIROREMIATION1056540A ENV	Carrier	BEAVERBULK *	Volume
Ticket Date	06/22/2010	Vehicle#	L300	
Payment Type	Credit Account	Container		
Manual Ticket#		Driver	RICHARD	
Hauling Ticket#		Check#		
Route		Billing #	0001755	
State Waste Code		Gen EPA ID	NR	
Manifest	62205	Grid		
Destination				
PO				
Profile	1056540A (PETROLEUM IMPACTED SOIL)			
Generator	157-NAVFAC NAVFAC SW PWD			

	Time	Scale	Operator	Inbound	Gross	78700 lb
In	06/22/2010 11:38:16	Scale 02	cmosley1		Tare	31620 lb
Out	06/22/2010 11:38:16		cmosley1		Net	47080 lb
					Tons	23.54

Comments

SAFETY---SAFETY---SAFETY----GOT IT!!

Copy for File

1016401

By: \_\_\_\_\_

Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1 ContSoilPet-Tons-C	100	23.54	Tons				DUVAL
2 FUEL-Fuel Surcharg	100		%				DUVAL
3 EVF-P-Standard Env	100		%				DUVAL
4 CRM-COST REIMBURSE	100	23.54	Tons				DUVAL
5 HSF-MOST FEE	100		%				DUVAL
6 SAF-SUPERFUND	100	23.54	Tons				DUVAL
7 HAU-HAUL per ton	100	23.54	Tons				DUVAL

Total Fees  
Total Ticket



L 390

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

Not Required FL6170022474

2. Page 1 of

3. Emergency Response Phone

904-791-9992

4. Waste Tracking Number

62207

5. Generator's Name and Mailing Address

NAVFAC SE PWD  
Bldg 502, Perimeter Rd  
Jacksonville, FL 32221

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name

Beaver Bulk

U.S. EPA ID Number

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

Chester Island Landfill  
Highway 121 South  
Folkston, GA

U.S. EPA ID Number

Not Required

Facility's Phone: 912-496-7918

9. Waste Shipping Name and Description

10. Containers

No.

Type

11. Total Quantity

12. Unit Wt./Vol.

1. Petroleum Impacted Soil & Debris (approval # 105654QA)

001

DT

20

Y

2.NA

3.NA

4.NA

13. Special Handling Instructions and Additional Information

ERS Job No. 10164

CTO-0060 (PC# 350277)

Copy for File

In case of emergency call ERS: (904) 791-9992

1016409

By:

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Officer's Printed/Typed Name

John Summatt

Signature

[Signature]

Month Day Year

06 22 10

INT'L

15. International Shipments

Import to U.S.

Export from U.S.

Port of entry/exit:

Date leaving U.S.:

Transporter Signature (for exports only):

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

Jeff McNally

Signature

[Signature]

Month Day Year

6 22 10

Transporter 2 Printed/Typed Name

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

Signature

[Signature]

Month Day Year

10 22 10



Chesser Island Landfill  
Hwy 121/Chesser Island Rd  
Folkston, GA, 31537  
Ph: (912) 496-7918

Original  
Ticket# 255363

Customer Name ENVIROREMEDIATION1056546A ENV Carrier BEAVERBULK \*  
Ticket Date 06/22/2010 Vehicle# L390 Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver JEFF  
Hauling Ticket# Check#  
Route Billing # 0001755  
State Waste Code Gen EPA ID NR  
Manifest 62207 Grid  
Destination  
PO  
Profile 1056546A (PETROLEUM IMPACTED SOIL)  
Generator 157-NAVFAC NAVFAC SW PWD

Time Scale Operator Inbound Gross 92800 lb\*  
In 06/22/2010 13:55:24 MANUAL WT cmosley1 Tare 23260 lb\*  
Out 06/22/2010 13:55:24 cmosley1 Net 69540 lb  
\* Manual Weight Tons 34.77

Comments

Copy for File

1016401

SAFETY---SAFETY---SAFETY----GOT IT!!

By: \_\_\_\_\_

Product	LD%	Qty	UDM	Rate	Fee	Amount	Origin
1 ContSoilPet-Tons-C	100	34.77	Tons				DUVAL
2 FUEL-Fuel Surcharg	100		%				DUVAL
3 EVF-P-Standard Env	100		%				DUVAL
4 CRM-COST REIMBURSE	100	34.77	Tons				DUVAL
5 HSF-HOST FEE	100		%				DUVAL
6 SPF-SUPERFUND	100	34.77	Tons				DUVAL
7 HAU-HAUL per ton	100	34.77	Tons				DUVAL

Total Fees  
Total Ticket



GENERATOR	NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number <b>FL-5170022474</b>	2. Page 1 of	3. Emergency Response Phone 904-791-9992	4. Waste Tracking Number <b>076710-1</b>
	5. Generator's Name and Mailing Address <b>NAVFACSEPWD Bldg 502, Parkmead Rd Jacksonville, FL 32221</b>		Generator's Site Address (if different than mailing address) <b>CECIL COMMERCE CTR 502 Parkmead Rd JACKSONVILLE 32221</b>		
	Generator's Phone: <b>32212</b>		U.S. EPA ID Number		
	6. Transporter 1 Company Name <b>ENVIRONMENTAL REMEDIATION SCS</b>		U.S. EPA ID Number		
	7. Transporter 2 Company Name		U.S. EPA ID Number		
TRANSPORTER INTL	8. Designated Facility Name and Site Address <b>Chesler Island Landfill Highway 121 South Folkston, GA</b>		U.S. EPA ID Number <b>Not Required</b>		
	Facility's Phone: <b>912-496-7918</b>				
	9. Waste Shipping Name and Description	10. Containers	11. Total Quantity	12. Unit Wt./Vol.	
		No. Type			
	1. Petroleum Impacted Soil & Debris (approval # 105654GA)	001 DT cm	20	Y	
2. NA					
3. NA					
4. NA					
13. Special Handling Instructions and Additional Information ERS Job No. 10164 <b>rlc# R2977RT</b> CTO-0060 (PO# 3602) <b>Generator File</b> In case of emergency call ERS: (904) 791-9992 <b>1016401</b> By: _____					
14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.					
Generator's/Officer's Printed/Typed Name <b>JOHN BRUMMETT</b>		Signature 		Month Day Year <b>07 09 10</b>	
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____					
16. Transporter Acknowledgment of Receipt of Materials					
Transporter 1 Printed/Typed Name <b>Jim Curtis</b>		Signature 		Month Day Year <b>17 17 10</b>	
Transporter 2 Printed/Typed Name		Signature		Month Day Year	
17. Discrepancy					
17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
Manifest Reference Number: _____ U.S. EPA ID Number _____					
17b. Alternate Facility (or Generator)					
Facility's Phone:		U.S. EPA ID Number			
17c. Signature of Alternate Facility (or Generator)				Month Day Year	
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a					
Printed/Typed Name		Signature 		Month Day Year <b>2 2 10</b>	

Driver's Signature



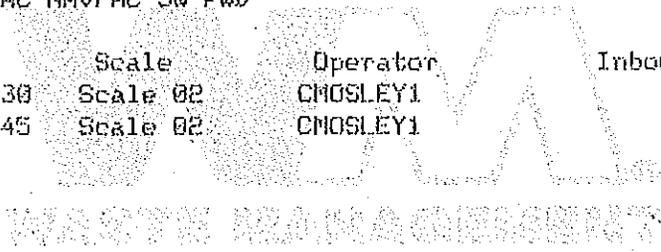
Chesser Island Landfill  
Hwy 121/Chesser Island Rd  
Folkston, GA, 31537  
Ph: (912) 496-7918

Original  
Ticket# 258139

Customer Name ENVIREMEDIATION1056546A ENV Carrier ERS ENVIRONMENTAL REMEDIATION SERVICE  
Ticket Date 07/07/2010 Vehicle# 124 Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Hauling Ticket# Check#  
Route Billing # 0001755  
State Waste Code Gen EPA ID NR  
Manifest 070710-1 Grid  
Destination  
PO  
Profile 1056546A (PETROLEUM IMPACTED SOIL)  
Generator 157-NAVFAC NAVFAC SW PWD

	Time	Scale	Operator	Inbound	Gross	46760 lb
In	07/07/2010 14:46:30	Scale 02	CMOSLEY1		Tare	34660 lb
Out	07/07/2010 15:19:45	Scale 02	CMOSLEY1		Net	12100 lb
					Tons	6.05

Comments



Copy for file

1016401

SAFETY---SAFETY---SAFETY---GOT IT!!

Product	LDX	Qty	UOM	Rate	Fee	Amount	Origin
1 ContSoilPet-Tons-C	100	6.05	Tons				DUVAL
2 FUEL-Fuel Surcharg	100		%				DUVAL
3 EVF-F-Standard Env	100		%				DUVAL
4 CRN-COST REIMBURSE	100	6.05	Tons				DUVAL
5 HSF-HOST FEE	100		%				DUVAL
6 SPF-SUPERFUND	100	6.05	Tons				DUVAL
7 HAU-HAUL per ton	100	6.05	Tons				DUVAL

Total Fees  
Total Ticket



Appendix G  
Certificates of Disposal

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10164



**CERTIFICATE OF DISPOSAL**

This is to document the disposition of waste material(s) removed from your facility located at:

**NAVFAC SE PWD Cecil Commerce Center – Jacksonville, FL**

Charged to: Environmental Remediation Services 760 Talleyrand Ave., Jacksonville, FL 32202

The waste material(s) consisted of:

NAVFAC SE PWD Cecil Commerce Center– Profile # 105654GA - Manifest #'s 62207, 62205, 62206, 62203, 62202, 62204, 62201, 070710-1

The waste material(s) were disposed of at:

Facility: The Chesser Island Road Landfill (solid waste handling permit # 024-006D (SL)

Address: PO Box 128, Highway 121 @ Chesser Island Road, Folkston, GA 31537-0128

Disposal of your material(s) was accomplished by the following method(s):

Subtitle-D Direct landfill, handled in accordance with all permit regulations

Date(s) of Disposal:

June 22 & July 7, 2010

Tons Disposed of:

201.1 tons

Authorized Facility Signature:

Appendix H  
Transportation and Disposal Log

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WASTE TRANSPORTATION AND DISPOSAL LOG

Transporter	Date Transported	Transporter EPA ID	Load ID	Disposal Facility	Disp Fac EPA ID	Media	Waste Type (Haz, Nonhaz, TSCA)	Waste Code/ Haz Waste No	Disposal Date	Manifest Number	Disposal Treatment Method (Enter disposal quantity under appropriate method)					Certif of Disp/ Destruc Date	Comments/Notes	File Status (see note)
											Incineration	Recycle	Landfill	Other	Unit			
Beaver Bulk	22-Jun-10	NA	1	Chesser Island landfill	NA	Soil	Nonhaz	105654GA	22-Jun-10	62201			24.4		tons	22-Jun-10		
Beaver Bulk	22-Jun-10	NA	2	Chesser Island landfill	NA	Soil	Nonhaz	105654GA	22-Jun-10	62202			29.12		tons	22-Jun-10		
Beaver Bulk	22-Jun-10	NA	3	Chesser Island landfill	NA	Soil	Nonhaz	105654GA	22-Jun-10	62203			24.43		tons	22-Jun-10		
Beaver Bulk	22-Jun-10	NA	4	Chesser Island landfill	NA	Soil	Nonhaz	105654GA	22-Jun-10	62204			26.42		tons	22-Jun-10		
Beaver Bulk	22-Jun-10	NA	5	Chesser Island landfill	NA	Soil	Nonhaz	105654GA	22-Jun-10	62205			23.54		tons	22-Jun-10		
Beaver Bulk	22-Jun-10	NA	6	Chesser Island landfill	NA	Soil	Nonhaz	105654GA	22-Jun-10	62206			32.37		tons	22-Jun-10		
Beaver Bulk	22-Jun-10	NA	7	Chesser Island landfill	NA	Soil	Nonhaz	105654GA	22-Jun-10	62207			34.77		tons	22-Jun-10		
ERS	7-Jul-10	NA	8	Chesser Island landfill	NA	Soil	Nonhaz	105654GA	7-Jul-10	070710-1			6.05		tons	7-Jul-10		

Appendix I  
Clean Fill Laboratory Analytical Reports and Certifications

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**Environmental Conservation Laboratories, Inc.**

4810 Executive Park Court, Suite 211

Jacksonville FL, 32216-6069

Phone: 904.296.3007 FAX: 904.296.6210



www.encolabs.com

Thursday, June 17, 2010

Environmental Remediation Services (EN026)

Attn: John Anderson

760 TALLEYRAND AVE

Jacksonville, FL 32202

**RE: Laboratory Results for**

**Project Number: CCI- Cecil Field, Project Name/Desc: High Springs Quarry (Lime Rock)**

**ENCO Workorder: B002736**

Dear John Anderson,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Wednesday, June 9, 2010.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Jacksonville. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads 'Lindsay J Crawford'.

Lindsay J Crawford For Chris Tompkins

Project Manager

Enclosure(s)



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**SAMPLE SUMMARY/LABORATORY CHRONICLE**

Client ID:	NewBerry Pit 01	Lab ID: B002736-01	Sampled: 06/09/10 14:45	Received: 06/09/10 17:15
Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	12/06/10		06/11/10 10:40	6/14/2010 15:30
EPA 7471B	07/07/10		06/10/10 16:30	6/11/2010 07:16
EPA 8081B	06/23/10	07/24/10	06/14/10 12:13	6/15/2010 13:26
EPA 8082A	06/09/11	06/09/11	06/14/10 12:16	6/15/2010 13:26
EPA 8151A	06/23/10	07/21/10	06/11/10 10:58	6/15/2010 17:31
EPA 8260B	06/23/10		06/14/10 10:35	6/14/2010 18:05
EPA 8270D	06/23/10	07/21/10	06/11/10 09:16	6/15/2010 16:53
EPA 8270D	06/23/10	07/21/10	06/11/10 09:31	6/14/2010 20:35
EPA 9045D	06/17/10 10:30		06/17/10 10:16	6/17/2010 11:42
FLPRO	06/23/10	07/21/10	06/11/10 09:21	6/14/2010 21:02

Client ID:	NewBerry Pit 01	Lab ID: B002736-01RE1	Sampled: 06/09/10 14:45	Received: 06/09/10 17:15
Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	12/06/10		06/11/10 10:40	6/15/2010 11:46



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**SAMPLE DETECTION SUMMARY**

Client ID: NewBerry Pit 01		Lab ID: B002736-01					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Acetone	0.0054		0.0009	0.0054	mg/kg dry	EPA 8260B	
Aluminum - Total	670		12.1	37.9	mg/kg dry	EPA 6010C	
Antimony - Total	4.95		2.04	3.79	mg/kg dry	EPA 6010C	
Arsenic - Total	4.27		1.25	1.89	mg/kg dry	EPA 6010C	
Barium - Total	6.62	V	0.0947	1.89	mg/kg dry	EPA 6010C	QB-01
Beryllium - Total	0.0638	I	0.0356	0.189	mg/kg dry	EPA 6010C	
Cadmium - Total	0.110	I	0.0909	0.189	mg/kg dry	EPA 6010C	
Chromium - Total	13.1		0.246	1.89	mg/kg dry	EPA 6010C	
Cobalt - Total	0.965	I	0.129	1.89	mg/kg dry	EPA 6010C	
Iron - Total	1200	V	4.17	9.47	mg/kg dry	EPA 6010C	QB-01
Magnesium - Total	2070		7.95	94.7	mg/kg dry	EPA 6010C	
Manganese - Total	46.0		0.0682	1.89	mg/kg dry	EPA 6010C	
Mercury - Total	0.00456	I	0.00289	0.0107	mg/kg dry	EPA 7471B	
Nickel - Total	1.89	I	0.204	9.47	mg/kg dry	EPA 6010C	
pH	8.8				pH Units	EPA 9045D	
Potassium - Total	56.9	I	18.2	94.7	mg/kg dry	EPA 6010C	
Selenium - Total	12.6		1.51	1.89	mg/kg dry	EPA 6010C	
Silver - Total	2.91		0.329	1.89	mg/kg dry	EPA 6010C	
Sodium - Total	91.1	I	41.7	94.7	mg/kg dry	EPA 6010C	
TPH (C8-C40)	2.6	I	0.89	7.1	mg/kg dry	FLPRO	
Vanadium - Total	14.3		0.231	1.89	mg/kg dry	EPA 6010C	
Zinc - Total	2.24	I	0.322	9.47	mg/kg dry	EPA 6010C	

Client ID: NewBerry Pit 01		Lab ID: B002736-01RE1					
Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Calcium - Total	365000		41.7	473	mg/kg dry	EPA 6010C	



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### ANALYTICAL RESULTS

Description: NewBerry Pit 01

Lab Sample ID: B002736-01

Received: 06/09/10 17:15

Matrix: Soil

Sampled: 06/09/10 14:45

Work Order: B002736

Project: High Springs Quarry (Lime Rock)

Sampled By: Valtious Morris

% Solids: 93.31

#### Semivolatile Organic Compounds by GCMS

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,2,4-Trichlorobenzene [120-82-1] ^	0.060	U	mg/kg dry	1	0.060	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
1,2-Dichlorobenzene [95-50-1] ^	0.076	U	mg/kg dry	1	0.076	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
1,3-Dichlorobenzene [541-73-1] ^	0.073	U	mg/kg dry	1	0.073	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
1,4-Dichlorobenzene [106-46-7] ^	0.074	U	mg/kg dry	1	0.074	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
1-Methylnaphthalene [90-12-0] ^	0.064	U	mg/kg dry	1	0.064	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2,4,5-Trichlorophenol [95-95-4] ^	0.079	U	mg/kg dry	1	0.079	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2,4,6-Trichlorophenol [88-06-2] ^	0.060	U	mg/kg dry	1	0.060	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2,4-Dichlorophenol [120-83-2] ^	0.074	U	mg/kg dry	1	0.074	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2,4-Dimethylphenol [105-67-9] ^	0.070	U	mg/kg dry	1	0.070	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2,4-Dinitrophenol [51-28-5] ^	0.079	U	mg/kg dry	1	0.079	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2,4-Dinitrotoluene [121-14-2] ^	0.054	U	mg/kg dry	1	0.054	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2,6-Dinitrotoluene [606-20-2] ^	0.056	U	mg/kg dry	1	0.056	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2-Chloronaphthalene [91-58-7] ^	0.055	U	mg/kg dry	1	0.055	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2-Methyl-4,6-dinitrophenol [534-52-1] ^	0.077	U	mg/kg dry	1	0.077	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2-Methylnaphthalene [91-57-6] ^	0.062	U	mg/kg dry	1	0.062	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2-Nitrophenol [88-75-5] ^	0.071	U	mg/kg dry	1	0.071	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
4-Bromophenyl-phenylether [101-55-3] ^	0.054	U	mg/kg dry	1	0.054	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
4-Chloro-3-methylphenol [59-50-7] ^	0.063	U	mg/kg dry	1	0.063	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
4-Chlorophenyl-phenylether [7005-72-3] ^	0.050	U	mg/kg dry	1	0.050	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
4-Nitrophenol [100-02-7] ^	0.035	U	mg/kg dry	1	0.035	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Acenaphthene [83-32-9] ^	0.062	U	mg/kg dry	1	0.062	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Acenaphthylene [208-96-8] ^	0.056	U	mg/kg dry	1	0.056	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Anthracene [120-12-7] ^	0.042	U	mg/kg dry	1	0.042	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Benzidine [92-87-5] ^	0.20	U	mg/kg dry	1	0.20	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Benzo(a)anthracene [56-55-3] ^	0.041	U	mg/kg dry	1	0.041	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Benzo(a)pyrene [50-32-8] ^	0.038	U	mg/kg dry	1	0.038	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Benzo(b)fluoranthene [205-99-2] ^	0.040	U	mg/kg dry	1	0.040	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Benzo(g,h,i)perylene [191-24-2] ^	0.040	U	mg/kg dry	1	0.040	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Benzo(k)fluoranthene [207-08-9] ^	0.038	U	mg/kg dry	1	0.038	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Benzoic acid [65-85-0] ^	0.19	U	mg/kg dry	1	0.19	1.8	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Bis(2-chloroethoxy)methane [111-91-1] ^	0.056	U	mg/kg dry	1	0.056	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Bis(2-chloroethyl)ether [111-44-4] ^	0.060	U	mg/kg dry	1	0.060	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Bis(2-chloroisopropyl)ether [39638-32-9] ^	0.044	U	mg/kg dry	1	0.044	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Bis(2-ethylhexyl)phthalate [117-81-7] ^	0.035	U	mg/kg dry	1	0.035	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Butylbenzylphthalate [85-68-7] ^	0.035	U	mg/kg dry	1	0.035	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Chrysene [218-01-9] ^	0.14	U	mg/kg dry	1	0.14	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Dibenzo(a,h)anthracene [53-70-3] ^	0.051	U	mg/kg dry	1	0.051	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Diethylphthalate [84-66-2] ^	0.051	U	mg/kg dry	1	0.051	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Dimethylphthalate [131-11-3] ^	0.049	U	mg/kg dry	1	0.049	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Di-n-butylphthalate [84-74-2] ^	0.035	U	mg/kg dry	1	0.035	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Di-n-octylphthalate [117-84-0] ^	0.035	U	mg/kg dry	1	0.035	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Fluoranthene [206-44-0] ^	0.041	U	mg/kg dry	1	0.041	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Fluorene [86-73-7] ^	0.048	U	mg/kg dry	1	0.048	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Hexachlorobenzene [118-74-1] ^	0.044	U	mg/kg dry	1	0.044	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Hexachlorobutadiene [87-68-3] ^	0.069	U	mg/kg dry	1	0.069	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Hexachlorocyclopentadiene [77-47-4] ^	0.16	U	mg/kg dry	1	0.16	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Hexachloroethane [67-72-1] ^	0.075	U	mg/kg dry	1	0.075	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Indeno(1,2,3-cd)pyrene [193-39-5] ^	0.035	U	mg/kg dry	1	0.035	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	



www.encolabs.com

Description: NewBerry Pit 01

Lab Sample ID: B002736-01

Received: 06/09/10 17:15

Matrix: Soil

Sampled: 06/09/10 14:45

Work Order: B002736

Project: High Springs Quarry (Lime Rock)

Sampled By: Valtious Morris

% Solids: 93.31

Semivolatile Organic Compounds by GCMS

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Isophorone [78-59-1] ^	0.051	U	mg/kg dry	1	0.051	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Naphthalene [91-20-3] ^	0.058	U	mg/kg dry	1	0.058	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Nitrobenzene [98-95-3] ^	0.051	U	mg/kg dry	1	0.051	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
N-Nitrosodimethylamine [62-75-9] ^	0.073	U	mg/kg dry	1	0.073	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
N-Nitroso-di-n-propylamine [621-64-7] ^	0.060	U	mg/kg dry	1	0.060	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4]	0.087	U	mg/kg dry	1	0.087	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Pentachlorophenol [87-86-5] ^	0.057	U	mg/kg dry	1	0.057	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Phenanthrene [85-01-8] ^	0.046	U	mg/kg dry	1	0.046	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Phenol [108-95-2] ^	0.068	U	mg/kg dry	1	0.068	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Pyrene [129-00-0] ^	0.035	U	mg/kg dry	1	0.035	0.35	0F11010	EPA 8270D	06/14/10 20:35	JWJ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,4,6-Tribromophenol	1.2	1	1.77	68 %	36-146	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2-Fluorobiphenyl	1.6	1	1.77	88 %	59-120	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
2-Fluorophenol	2.5	1	1.77	140 %	40-129	0F11010	EPA 8270D	06/14/10 20:35	JWJ	QS-03
Nitrobenzene-d5	1.5	1	1.77	82 %	42-120	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Phenol-d5	1.6	1	1.77	90 %	42-127	0F11010	EPA 8270D	06/14/10 20:35	JWJ	
Terphenyl-d14	1.9	1	1.77	110 %	61-147	0F11010	EPA 8270D	06/14/10 20:35	JWJ	



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Matrix: Soil

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Project: High Springs Quarry (Lime Rock)

Sampled By: Valtious Morris

% Solids: 93.31

Semivolatile Organic Compounds by GCMS SIM

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1-Methylnaphthalene [90-12-0] ^	0.0032	U	mg/kg dry	1	0.0032	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
2-Methylnaphthalene [91-57-6] ^	0.0034	U	mg/kg dry	1	0.0034	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Acenaphthene [83-32-9] ^	0.0029	U	mg/kg dry	1	0.0029	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Acenaphthylene [208-96-8] ^	0.0029	U	mg/kg dry	1	0.0029	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Anthracene [120-12-7] ^	0.0029	U	mg/kg dry	1	0.0029	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Benzo(a)anthracene [56-55-3] ^	0.0036	U	mg/kg dry	1	0.0036	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Benzo(a)pyrene [50-32-8] ^	0.0057	U	mg/kg dry	1	0.0057	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Benzo(b)fluoranthene [205-99-2] ^	0.0050	U	mg/kg dry	1	0.0050	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Benzo(g,h,i)perylene [191-24-2] ^	0.0041	U	mg/kg dry	1	0.0041	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Benzo(k)fluoranthene [207-08-9] ^	0.0034	U	mg/kg dry	1	0.0034	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Chrysene [218-01-9] ^	0.0032	U	mg/kg dry	1	0.0032	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Dibenzo(a,h)anthracene [53-70-3] ^	0.0039	U	mg/kg dry	1	0.0039	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Fluoranthene [206-44-0] ^	0.0039	U	mg/kg dry	1	0.0039	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Fluorene [86-73-7] ^	0.0039	U	mg/kg dry	1	0.0039	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Indeno(1,2,3-cd)pyrene [193-39-5] ^	0.0043	U	mg/kg dry	1	0.0043	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Naphthalene [91-20-3] ^	0.0040	U	mg/kg dry	1	0.0040	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Phenanthrene [85-01-8] ^	0.0034	U	mg/kg dry	1	0.0034	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	
Pyrene [129-00-0] ^	0.0035	U	mg/kg dry	1	0.0035	0.035	0F11005	EPA 8270D	06/15/10 16:53	JWJ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
p-Terphenyl	1.9	1	1.77	108 %	58-121	0F11005	EPA 8270D	06/15/10 16:53	JWJ	



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Description: NewBerry Pit 01

Lab Sample ID: B002736-01

Received: 06/09/10 17:15

Matrix: Soil

Sampled: 06/09/10 14:45

Work Order: B002736

Project: High Springs Quarry (Lime Rock)

Sampled By: Valtious Morris

% Solids: 93.31

Organochlorine Pesticides by GC

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
4,4'-DDD [72-54-8] ^	0.00009	U	mg/kg dry	1	0.00009	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	QL-02
4,4'-DDE [72-55-9] ^	0.00005	U	mg/kg dry	1	0.00005	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
4,4'-DDT [50-29-3] ^	0.00007	U	mg/kg dry	1	0.00007	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Aldrin [309-00-2] ^	0.00009	U	mg/kg dry	1	0.00009	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
alpha-BHC [319-84-6] ^	0.00004	U	mg/kg dry	1	0.00004	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
beta-BHC [319-85-7] ^	0.00013	U	mg/kg dry	1	0.00013	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Chlordane (tech) [12789-03-6] ^	0.0035	U	mg/kg dry	1	0.0035	0.035	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Chlordane-alpha [5103-71-9] ^	0.00008	U	mg/kg dry	1	0.00008	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Chlordane-gamma [5566-34-7] ^	0.00004	U	mg/kg dry	1	0.00004	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
delta-BHC [319-86-8] ^	0.00005	U	mg/kg dry	1	0.00005	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Dieldrin [60-57-1] ^	0.00030	U	mg/kg dry	1	0.00030	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Endosulfan I [959-98-8] ^	0.00006	U	mg/kg dry	1	0.00006	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Endosulfan II [33213-65-9] ^	0.00008	U	mg/kg dry	1	0.00008	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Endosulfan sulfate [1031-07-8] ^	0.00004	U	mg/kg dry	1	0.00004	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Endrin [72-20-8] ^	0.00016	U	mg/kg dry	1	0.00016	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Endrin aldehyde [7421-93-4] ^	0.00012	U	mg/kg dry	1	0.00012	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Endrin ketone [53494-70-5] ^	0.00012	U	mg/kg dry	1	0.00012	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
gamma-BHC [58-89-9] ^	0.00005	U	mg/kg dry	1	0.00005	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Heptachlor [76-44-8] ^	0.00005	U	mg/kg dry	1	0.00005	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Heptachlor epoxide [1024-57-3] ^	0.00006	U	mg/kg dry	1	0.00006	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Methoxychlor [72-43-5] ^	0.00016	U	mg/kg dry	1	0.00016	0.0018	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Toxaphene [8001-35-2] ^	0.0041	U	mg/kg dry	1	0.0041	0.035	0F14008	EPA 8081B	06/15/10 13:26	JSW	
Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes	
2,4,5,6-TCMX	0.024	1	0.0346	69 %	64-125	0F14008	EPA 8081B	06/15/10 13:26	JSW		
Decachlorobiphenyl	0.033	1	0.0346	96 %	60-117	0F14008	EPA 8081B	06/15/10 13:26	JSW		



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Description: NewBerry Pit 01

Lab Sample ID: B002736-01

Received: 06/09/10 17:15

Matrix: Soil

Sampled: 06/09/10 14:45

Work Order: B002736

Project: High Springs Quarry (Lime Rock)

Sampled By: Valtious Morris

% Solids: 93.31

Polychlorinated Biphenyls by GC

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
PCB-1016/1242 [12674-11-2/53469-21-9] ^	0.0054	U	mg/kg dry	1	0.0054	0.018	0F14009	EPA 8082A	06/15/10 13:26	LJC	
PCB-1221 [11104-28-2] ^	0.0054	U	mg/kg dry	1	0.0054	0.018	0F14009	EPA 8082A	06/15/10 13:26	LJC	
PCB-1232 [11141-16-5] ^	0.0054	U	mg/kg dry	1	0.0054	0.018	0F14009	EPA 8082A	06/15/10 13:26	LJC	
PCB-1248 [12672-29-6] ^	0.0054	U	mg/kg dry	1	0.0054	0.018	0F14009	EPA 8082A	06/15/10 13:26	LJC	
PCB-1254 [11097-69-1] ^	0.0054	U	mg/kg dry	1	0.0054	0.018	0F14009	EPA 8082A	06/15/10 13:26	LJC	
PCB-1260 [11096-82-5] ^	0.0054	U	mg/kg dry	1	0.0054	0.018	0F14009	EPA 8082A	06/15/10 13:26	LJC	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,4,5,6-TCMX	0.024	1	0.0348	69 %	73-147	0F14009	EPA 8082A	06/15/10 13:26	LJC	QM-14
Decachlorobiphenyl	0.033	1	0.0348	96 %	21-176	0F14009	EPA 8082A	06/15/10 13:26	LJC	



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Sampled By: Valtious Morris

% Solids: 93.31

FL Petroleum Range Organics

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
TPH (C8-C40) [ECL-0175] ^	2.6	I	mg/kg dry	1	0.89	7.1	0F11008	FLPRO	06/14/10 21:02	JWJ	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
n-Nonatriacontane	3.5	1	3.55	99 %	23-189	0F11008	FLPRO	06/14/10 21:02	JWJ	
o-Terphenyl	1.8	1	1.77	102 %	64-118	0F11008	FLPRO	06/14/10 21:02	JWJ	



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Project: High Springs Quarry (Lime Rock)

Sampled By: Valtious Morris

% Solids: 93.31

Metals by EPA 6000/7000 Series Methods

^ - ENCO Jacksonville certified analyte [NELAC E82277]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	670		mg/kg dry	4	12.1	37.9	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Antimony [7440-36-0] ^	4.95		mg/kg dry	4	2.04	3.79	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Arsenic [7440-38-2] ^	4.27		mg/kg dry	4	1.25	1.89	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Barium [7440-39-3] ^	6.62	V	mg/kg dry	4	0.0947	1.89	0F11015	EPA 6010C	06/14/10 15:30	ACV	QB-01
Beryllium [7440-41-7] ^	0.0638	I	mg/kg dry	4	0.0356	0.189	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Cadmium [7440-43-9] ^	0.110	I	mg/kg dry	4	0.0909	0.189	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Calcium [7440-70-2] ^	365000		mg/kg dry	20	41.7	473	0F11015	EPA 6010C	06/15/10 11:46	ACV	
Chromium [7440-47-3] ^	13.1		mg/kg dry	4	0.246	1.89	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Cobalt [7440-48-4] ^	0.965	I	mg/kg dry	4	0.129	1.89	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Iron [7439-89-6] ^	1200	V	mg/kg dry	4	4.17	9.47	0F11015	EPA 6010C	06/14/10 15:30	ACV	QB-01
Lead [7439-92-1] ^	0.644	U	mg/kg dry	4	0.644	1.89	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Magnesium [7439-95-4] ^	2070		mg/kg dry	4	7.95	94.7	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Manganese [7439-96-5] ^	46.0		mg/kg dry	4	0.0682	1.89	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Nickel [7440-02-0] ^	1.89	I	mg/kg dry	4	0.204	9.47	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Potassium [7440-09-7] ^	56.9	I	mg/kg dry	4	18.2	94.7	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Selenium [7782-49-2] ^	12.6		mg/kg dry	4	1.51	1.89	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Silver [7440-22-4] ^	2.91		mg/kg dry	4	0.329	1.89	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Sodium [7440-23-5] ^	91.1	I	mg/kg dry	4	41.7	94.7	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Thallium [7440-28-0] ^	4.92	U	mg/kg dry	20	4.92	9.47	0F11015	EPA 6010C	06/15/10 11:46	ACV	
Vanadium [7440-62-2] ^	14.3		mg/kg dry	4	0.231	1.89	0F11015	EPA 6010C	06/14/10 15:30	ACV	
Zinc [7440-66-6] ^	2.24	I	mg/kg dry	4	0.322	9.47	0F11015	EPA 6010C	06/14/10 15:30	ACV	



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**Lab Sample ID:** B002736-01

**Received:** 06/09/10 17:15

**Matrix:** Soil

**Sampled:** 06/09/10 14:45

**Work Order:** B002736

**Project:** High Springs Quarry (Lime Rock)

**Sampled By:** Valtious Morris

**% Solids:** 93.31

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### Classical Chemistry Parameters

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^ - ENCO Jacksonville certified analyte [NELAC E82277]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
pH [ECL-0062] ^	8.8		pH Units	1			0F17009	EPA 9045D	06/17/10 11:42	SMA	



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Project: High Springs Quarry (Lime Rock)

Sampled By: Valtious Morris

% Solids: 93.31

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Table with 11 columns: Analyte [CAS Number], Results, Flag, Units, DF, MDL, PQL, Batch, Method, Analyzed, By, Notes. Lists various compounds like 1,1,1-Trichloroethane, Benzene, Acetone, etc.

Table with 11 columns: Surrogates, Results, DF, Spike Lvl, % Rec, % Rec Limits, Batch, Method, Analyzed, By, Notes. Lists 4-Bromofluorobenzene, Dibromofluoromethane, Toluene-d8.



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Project: High Springs Quarry (Lime Rock)

Sampled By: Valtious Morris

% Solids: 93.31

Chlorinated Herbicides by GC

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
2,4,5-T [93-76-5] ^	0.0020	U	mg/kg dry	1	0.0020	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
2,4,5-TP (Silvex) [93-72-1] ^	0.0014	U	mg/kg dry	1	0.0014	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
2,4-D [94-75-7] ^	0.0038	U	mg/kg dry	1	0.0038	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
2,4-DB [94-82-6] ^	0.0062	U	mg/kg dry	1	0.0062	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
3,5-DCBA [51-365-5] ^	0.0056	U	mg/kg dry	1	0.0056	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
4-Nitrophenol [100-02-7] ^	0.0065	U	mg/kg dry	1	0.0065	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
Acifluorfen [50594-66-6] ^	0.0051	U	mg/kg dry	1	0.0051	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	QV-01
Bentazon [25057-89-0] ^	0.0013	U	mg/kg dry	1	0.0013	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
Chloramben [133-90-4] ^	0.0011	U	mg/kg dry	1	0.0011	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
Dacthal [1861-32-1] ^	0.0017	U	mg/kg dry	1	0.0017	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
Dalapon [75-99-0] ^	0.0060	U	mg/kg dry	1	0.0060	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
Dicamba [1918-00-9] ^	0.0018	U	mg/kg dry	1	0.0018	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
Dichlorprop [120-36-5] ^	0.0031	U	mg/kg dry	1	0.0031	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
Dinoseb [88-85-7] ^	0.0039	U	mg/kg dry	1	0.0039	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
MCPA [94-74-6] ^	0.17	U	mg/kg dry	1	0.17	1.1	0F11026	EPA 8151A	06/15/10 17:31	RGG	
MCPP [93-65-2] ^	0.57	U	mg/kg dry	1	0.57	1.1	0F11026	EPA 8151A	06/15/10 17:31	RGG	
Pentachlorophenol [87-86-5] ^	0.0014	U	mg/kg dry	1	0.0014	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	
Picloram [1918-02-1] ^	0.0019	U	mg/kg dry	1	0.0019	0.011	0F11026	EPA 8151A	06/15/10 17:31	RGG	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
2,4-DCAA	0.035	1	0.0427	82 %	39-174	0F11026	EPA 8151A	06/15/10 17:31	RGG	



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**Description:** NewBerry Pit 01

**Lab Sample ID:** B002736-01

**Received:** 06/09/10 17:15

**Matrix:** Soil

**Sampled:** 06/09/10 14:45

**Work Order:** B002736

**Project:** High Springs Quarry (Lime Rock)

**Sampled By:** Valtious Morris

**% Solids:** 93.31

**Metals by EPA 6000/7000 Series Methods**

^ - ENCO Orlando certified analyte [NELAC E83182]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
Mercury [7439-97-6] ^	0.00456	I	mg/kg dry	1	0.00289	0.0107	0F10027	EPA 7471B	06/11/10 07:16	JAY	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



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### QUALITY CONTROL

#### Semivolatile Organic Compounds by GCMS - Quality Control

Batch 0F11010 - EPA 3545\_MS

Blank (0F11010-BLK1)

Prepared: 06/11/2010 09:31 Analyzed: 06/14/2010 18:39

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	0.056	U	0.33	mg/kg wet							
1,2-Dichlorobenzene	0.071	U	0.33	mg/kg wet							
1,3-Dichlorobenzene	0.068	U	0.33	mg/kg wet							
1,4-Dichlorobenzene	0.069	U	0.33	mg/kg wet							
1-Methylnaphthalene	0.060	U	0.33	mg/kg wet							
2,4,5-Trichlorophenol	0.074	U	0.33	mg/kg wet							
2,4,6-Trichlorophenol	0.056	U	0.33	mg/kg wet							
2,4-Dichlorophenol	0.069	U	0.33	mg/kg wet							
2,4-Dimethylphenol	0.065	U	0.33	mg/kg wet							
2,4-Dinitrophenol	0.074	U	0.33	mg/kg wet							
2,4-Dinitrotoluene	0.050	U	0.33	mg/kg wet							
2,6-Dinitrotoluene	0.052	U	0.33	mg/kg wet							
2-Chloronaphthalene	0.051	U	0.33	mg/kg wet							
2-Methyl-4,6-dinitrophenol	0.072	U	0.33	mg/kg wet							
2-Methylnaphthalene	0.058	U	0.33	mg/kg wet							
2-Nitrophenol	0.066	U	0.33	mg/kg wet							
4-Bromophenyl-phenylether	0.050	U	0.33	mg/kg wet							
4-Chloro-3-methylphenol	0.059	U	0.33	mg/kg wet							
4-Chlorophenyl-phenylether	0.047	U	0.33	mg/kg wet							
4-Nitrophenol	0.033	U	0.33	mg/kg wet							
Acenaphthene	0.058	U	0.33	mg/kg wet							
Acenaphthylene	0.052	U	0.33	mg/kg wet							
Anthracene	0.039	U	0.33	mg/kg wet							
Benzidine	0.19	U	0.33	mg/kg wet							
Benzo(a)anthracene	0.038	U	0.33	mg/kg wet							
Benzo(a)pyrene	0.035	U	0.33	mg/kg wet							
Benzo(b)fluoranthene	0.037	U	0.33	mg/kg wet							
Benzo(g,h,i)perylene	0.037	U	0.33	mg/kg wet							
Benzo(k)fluoranthene	0.035	U	0.33	mg/kg wet							
Benzoic acid	0.18	U	1.7	mg/kg wet							
Bis(2-chloroethoxy)methane	0.052	U	0.33	mg/kg wet							
Bis(2-chloroethyl)ether	0.056	U	0.33	mg/kg wet							
Bis(2-chloroisopropyl)ether	0.041	U	0.33	mg/kg wet							
Bis(2-ethylhexyl)phthalate	0.033	U	0.33	mg/kg wet							
Butylbenzylphthalate	0.033	U	0.33	mg/kg wet							
Chrysene	0.14	U	0.33	mg/kg wet							
Dibenzo(a,h)anthracene	0.048	U	0.33	mg/kg wet							
Diethylphthalate	0.048	U	0.33	mg/kg wet							
Dimethylphthalate	0.046	U	0.33	mg/kg wet							
Di-n-butylphthalate	0.033	U	0.33	mg/kg wet							
Di-n-octylphthalate	0.033	U	0.33	mg/kg wet							
Fluoranthene	0.038	U	0.33	mg/kg wet							
Fluorene	0.045	U	0.33	mg/kg wet							
Hexachlorobenzene	0.041	U	0.33	mg/kg wet							
Hexachlorobutadiene	0.064	U	0.33	mg/kg wet							
Hexachlorocyclopentadiene	0.15	U	0.33	mg/kg wet							
Hexachloroethane	0.070	U	0.33	mg/kg wet							
Indeno(1,2,3-cd)pyrene	0.033	U	0.33	mg/kg wet							
Isophorone	0.048	U	0.33	mg/kg wet							



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**QUALITY CONTROL****Semivolatile Organic Compounds by GCMS - Quality Control**

Batch 0F11010 - EPA 3545\_MS

**Blank (0F11010-BLK1) Continued**

Prepared: 06/11/2010 09:31 Analyzed: 06/14/2010 18:39

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Naphthalene	0.054	U	0.33	mg/kg wet							
Nitrobenzene	0.048	U	0.33	mg/kg wet							
N-Nitrosodimethylamine	0.068	U	0.33	mg/kg wet							
N-Nitroso-di-n-propylamine	0.056	U	0.33	mg/kg wet							
N-nitrosodiphenylamine/Diphenylamine	0.081	U	0.33	mg/kg wet							
Pentachlorophenol	0.053	U	0.33	mg/kg wet							
Phenanthrene	0.043	U	0.33	mg/kg wet							
Phenol	0.063	U	0.33	mg/kg wet							
Pyrene	0.033	U	0.33	mg/kg wet							
Surrogate: 2,4,6-Tribromophenol	1.8			mg/kg wet	1.67		111	36-146			
Surrogate: 2-Fluorobiphenyl	1.6			mg/kg wet	1.67		97	59-120			
Surrogate: 2-Fluorophenol	2.2			mg/kg wet	1.67		129	40-129			
Surrogate: Nitrobenzene-d5	1.5			mg/kg wet	1.67		90	42-120			
Surrogate: Phenol-d5	1.6			mg/kg wet	1.67		98	42-127			
Surrogate: Terphenyl-d14	2.0			mg/kg wet	1.67		120	61-147			

**LCS (0F11010-BS1)**

Prepared: 06/11/2010 09:31 Analyzed: 06/14/2010 19:08

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	1.6		0.33	mg/kg wet	1.67		97	63-120			
1,4-Dichlorobenzene	1.4		0.33	mg/kg wet	1.67		86	60-120			
2,4-Dinitrotoluene	1.7		0.33	mg/kg wet	1.67		101	71-120			
4-Chloro-3-methylphenol	1.3		0.33	mg/kg wet	1.67		77	64-120			
4-Nitrophenol	1.7		0.33	mg/kg wet	1.67		100	35-132			
Acenaphthene	1.6		0.33	mg/kg wet	1.67		97	67-120			
N-Nitroso-di-n-propylamine	1.0		0.33	mg/kg wet	1.67		63	55-120			
Pentachlorophenol	1.1		0.33	mg/kg wet	1.67		65	34-120			
Phenol	1.4		0.33	mg/kg wet	1.67		87	51-120			
Pyrene	1.7		0.33	mg/kg wet	1.67		105	75-131			
Surrogate: 2,4,6-Tribromophenol	2.0			mg/kg wet	1.67		118	36-146			
Surrogate: 2-Fluorobiphenyl	1.5			mg/kg wet	1.67		87	59-120			
Surrogate: 2-Fluorophenol	1.8			mg/kg wet	1.67		106	40-129			
Surrogate: Nitrobenzene-d5	1.4			mg/kg wet	1.67		82	42-120			
Surrogate: Phenol-d5	1.6			mg/kg wet	1.67		95	42-127			
Surrogate: Terphenyl-d14	1.9			mg/kg wet	1.67		114	61-147			

**Matrix Spike (0F11010-MS1)**

Prepared: 06/11/2010 09:31 Analyzed: 06/14/2010 19:37

**Source: B002736-01**

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	1.8		0.35	mg/kg dry	1.78	0.060 U	103	63-120			
1,4-Dichlorobenzene	1.6		0.35	mg/kg dry	1.78	0.074 U	89	60-120			
2,4-Dinitrotoluene	1.8		0.35	mg/kg dry	1.78	0.054 U	101	71-120			
4-Chloro-3-methylphenol	1.4		0.35	mg/kg dry	1.78	0.063 U	81	64-120			
4-Nitrophenol	1.4		0.35	mg/kg dry	1.78	0.035 U	77	35-132			
Acenaphthene	1.7		0.35	mg/kg dry	1.78	0.062 U	93	67-120			
N-Nitroso-di-n-propylamine	1.1		0.35	mg/kg dry	1.78	0.060 U	65	55-120			



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**QUALITY CONTROL****Semivolatile Organic Compounds by GCMS - Quality Control**

Batch OF11010 - EPA 3545\_MS

**Matrix Spike (OF11010-MS1) Continued**

Prepared: 06/11/2010 09:31 Analyzed: 06/14/2010 19:37

**Source: B002736-01**

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Pentachlorophenol	0.35		0.35	mg/kg dry	1.78	0.057 U	20	34-120			QM-07
Phenol	1.7		0.35	mg/kg dry	1.78	0.068 U	94	51-120			
Pyrene	1.9		0.35	mg/kg dry	1.78	0.035 U	107	75-131			
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>1.7</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>97</i>	<i>36-146</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.6</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>92</i>	<i>59-120</i>			
<i>Surrogate: 2-Fluorophenol</i>	<i>1.9</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>104</i>	<i>40-129</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.5</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>82</i>	<i>42-120</i>			
<i>Surrogate: Phenol-d5</i>	<i>1.9</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>106</i>	<i>42-127</i>			
<i>Surrogate: Terphenyl-d14</i>	<i>2.0</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>114</i>	<i>61-147</i>			

**Matrix Spike Dup (OF11010-MSD1)**

Prepared: 06/11/2010 09:31 Analyzed: 06/14/2010 20:06

**Source: B002736-01**

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2,4-Trichlorobenzene	1.8		0.35	mg/kg dry	1.78	0.060 U	100	63-120	3	22	
1,4-Dichlorobenzene	1.5		0.35	mg/kg dry	1.78	0.074 U	87	60-120	3	25	
2,4-Dinitrotoluene	1.7		0.35	mg/kg dry	1.78	0.054 U	97	71-120	4	19	
4-Chloro-3-methylphenol	1.4		0.35	mg/kg dry	1.78	0.063 U	78	64-120	4	21	
4-Nitrophenol	1.4		0.35	mg/kg dry	1.78	0.035 U	76	35-132	2	20	
Acenaphthene	1.5		0.35	mg/kg dry	1.78	0.062 U	87	67-120	7	21	
N-Nitroso-di-n-propylamine	1.4		0.35	mg/kg dry	1.78	0.060 U	81	55-120	22	28	
Pentachlorophenol	0.19	I	0.35	mg/kg dry	1.78	0.057 U	11	34-120	57	24	QM-07, QM-11
Phenol	1.3		0.35	mg/kg dry	1.78	0.068 U	71	51-120	28	18	QM-11
Pyrene	1.9		0.35	mg/kg dry	1.78	0.035 U	106	75-131	2	50	
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>1.6</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>87</i>	<i>36-146</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.6</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>88</i>	<i>59-120</i>			
<i>Surrogate: 2-Fluorophenol</i>	<i>2.3</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>128</i>	<i>40-129</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.5</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>82</i>	<i>42-120</i>			
<i>Surrogate: Phenol-d5</i>	<i>1.5</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>83</i>	<i>42-127</i>			
<i>Surrogate: Terphenyl-d14</i>	<i>2.0</i>			<i>mg/kg dry</i>	<i>1.78</i>		<i>112</i>	<i>61-147</i>			

**Semivolatile Organic Compounds by GCMS SIM - Quality Control**

Batch OF11005 - EPA 3545\_MS

**Blank (OF11005-BLK1)**

Prepared: 06/11/2010 09:16 Analyzed: 06/15/2010 13:52

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1-Methylnaphthalene	0.0030	U	0.033	mg/kg wet							
2-Methylnaphthalene	0.0032	U	0.033	mg/kg wet							
Acenaphthene	0.0027	U	0.033	mg/kg wet							
Acenaphthylene	0.0027	U	0.033	mg/kg wet							
Anthracene	0.0027	U	0.033	mg/kg wet							
Benzo(a)anthracene	0.0034	U	0.033	mg/kg wet							
Benzo(a)pyrene	0.0053	U	0.033	mg/kg wet							
Benzo(b)fluoranthene	0.0047	U	0.033	mg/kg wet							
Benzo(g,h,i)perylene	0.0038	U	0.033	mg/kg wet							



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**QUALITY CONTROL****Semivolatile Organic Compounds by GCMS SIM - Quality Control**

Batch OF11005 - EPA 3545\_MS

**Blank (OF11005-BLK1) Continued**

Prepared: 06/11/2010 09:16 Analyzed: 06/15/2010 13:52

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Benzo(k)fluoranthene	0.0032	U	0.033	mg/kg wet							
Chrysene	0.0030	U	0.033	mg/kg wet							
Dibenzo(a,h)anthracene	0.0036	U	0.033	mg/kg wet							
Fluoranthene	0.0036	U	0.033	mg/kg wet							
Fluorene	0.0036	U	0.033	mg/kg wet							
Indeno(1,2,3-cd)pyrene	0.0040	U	0.033	mg/kg wet							
Naphthalene	0.0037	U	0.033	mg/kg wet							
Phenanthrene	0.0032	U	0.033	mg/kg wet							
Pyrene	0.0033	U	0.033	mg/kg wet							
Surrogate: p-Terphenyl	1.9			mg/kg wet	1.67		111	58-121			

**LCS (OF11005-BS1)**

Prepared: 06/11/2010 09:16 Analyzed: 06/15/2010 14:15

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Acenaphthene	0.68		0.033	mg/kg wet	0.667		102	63-120			
Benzo(a)pyrene	0.65		0.033	mg/kg wet	0.667		97	38-124			
Benzo(g,h,i)perylene	0.54		0.033	mg/kg wet	0.667		80	42-130			
Naphthalene	0.70		0.033	mg/kg wet	0.667		105	63-120			
Surrogate: p-Terphenyl	1.8			mg/kg wet	1.67		110	58-121			

**Matrix Spike (OF11005-MS1)**

Prepared: 06/11/2010 09:16 Analyzed: 06/15/2010 14:37

Source: B002398-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Acenaphthene	0.70		0.036	mg/kg dry	0.702	0.0029 U	100	63-120			
Benzo(a)pyrene	0.69		0.036	mg/kg dry	0.702	0.0057 U	99	38-124			
Benzo(g,h,i)perylene	0.65		0.036	mg/kg dry	0.702	0.0041 U	93	42-130			
Naphthalene	0.72		0.036	mg/kg dry	0.702	0.0040 U	102	63-120			
Surrogate: p-Terphenyl	1.9			mg/kg dry	1.76		108	58-121			

**Matrix Spike Dup (OF11005-MSD1)**

Prepared: 06/11/2010 09:16 Analyzed: 06/15/2010 15:00

Source: B002398-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Acenaphthene	0.70		0.036	mg/kg dry	0.702	0.0029 U	100	63-120	0.2	12	
Benzo(a)pyrene	0.71		0.036	mg/kg dry	0.702	0.0057 U	101	38-124	2	15	
Benzo(g,h,i)perylene	0.65		0.036	mg/kg dry	0.702	0.0041 U	93	42-130	0.6	24	
Naphthalene	0.73		0.036	mg/kg dry	0.702	0.0040 U	104	63-120	2	19	
Surrogate: p-Terphenyl	1.9			mg/kg dry	1.76		106	58-121			

**Organochlorine Pesticides by GC - Quality Control**

Batch OF14008 - EPA 3545A

**Blank (OF14008-BLK1)**

Prepared: 06/14/2010 12:13 Analyzed: 06/15/2010 12:36

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**QUALITY CONTROL****Organochlorine Pesticides by GC - Quality Control**

Batch 0F14008 - EPA 3545A

**Blank (0F14008-BLK1) Continued**

Prepared: 06/14/2010 12:13 Analyzed: 06/15/2010 12:36

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
4,4'-DDD	0.00008	U	0.0017	mg/kg wet							
4,4'-DDE	0.00005	U	0.0017	mg/kg wet							
4,4'-DDT	0.00007	U	0.0017	mg/kg wet							
Aldrin	0.00009	U	0.0017	mg/kg wet							
alpha-BHC	0.00004	U	0.0017	mg/kg wet							
beta-BHC	0.00012	U	0.0017	mg/kg wet							
Chlordane (tech)	0.0033	U	0.033	mg/kg wet							
Chlordane-alpha	0.00007	U	0.0017	mg/kg wet							
Chlordane-gamma	0.00004	U	0.0017	mg/kg wet							
delta-BHC	0.00005	U	0.0017	mg/kg wet							
Dieldrin	0.00028	U	0.0017	mg/kg wet							
Endosulfan I	0.00006	U	0.0017	mg/kg wet							
Endosulfan II	0.00007	U	0.0017	mg/kg wet							
Endosulfan sulfate	0.00004	U	0.0017	mg/kg wet							
Endrin	0.00015	U	0.0017	mg/kg wet							
Endrin aldehyde	0.00011	U	0.0017	mg/kg wet							
Endrin ketone	0.00011	U	0.0017	mg/kg wet							
gamma-BHC	0.00004	U	0.0017	mg/kg wet							
Heptachlor	0.00004	U	0.0017	mg/kg wet							
Heptachlor epoxide	0.00006	U	0.0017	mg/kg wet							
Methoxychlor	0.00015	U	0.0017	mg/kg wet							
Toxaphene	0.0038	U	0.033	mg/kg wet							
Surrogate: 2,4,5,6-TCMX	0.027			mg/kg wet	0.0333		82	64-125			
Surrogate: Decachlorobiphenyl	0.033			mg/kg wet	0.0333		98	60-117			

**LCS (0F14008-BS1)**

Prepared: 06/14/2010 12:13 Analyzed: 06/15/2010 12:49

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
4,4'-DDT	0.039		0.0017	mg/kg wet	0.0333		117	63-123			
Dieldrin	0.036		0.0017	mg/kg wet	0.0333		109	68-115			
Endrin	0.035		0.0017	mg/kg wet	0.0333		105	59-123			
Surrogate: 2,4,5,6-TCMX	0.030			mg/kg wet	0.0333		91	64-125			
Surrogate: Decachlorobiphenyl	0.033			mg/kg wet	0.0333		98	60-117			

**Matrix Spike (0F14008-MS1)**

Prepared: 06/14/2010 12:13 Analyzed: 06/15/2010 13:01

Source: B002736-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
4,4'-DDT	0.041		0.0018	mg/kg dry	0.0357	0.00007 U	116	63-123			
Dieldrin	0.038		0.0018	mg/kg dry	0.0357	0.00030 U	107	68-115			
Endrin	0.038		0.0018	mg/kg dry	0.0357	0.00016 U	107	59-123			
Surrogate: 2,4,5,6-TCMX	0.030			mg/kg dry	0.0357		85	64-125			
Surrogate: Decachlorobiphenyl	0.035			mg/kg dry	0.0357		99	60-117			

**Matrix Spike Dup (0F14008-MSD1)**

Prepared: 06/14/2010 12:13 Analyzed: 06/15/2010 13:14

Source: B002736-01



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**QUALITY CONTROL****Organochlorine Pesticides by GC - Quality Control**

Batch OF14008 - EPA 3545A

**Matrix Spike Dup (OF14008-MSD1) Continued**

Prepared: 06/14/2010 12:13 Analyzed: 06/15/2010 13:14

Source: B002736-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
4,4'-DDT	0.041		0.0018	mg/kg dry	0.0355	0.00007 U	116	63-123	0.7	24	
Dieldrin	0.036		0.0018	mg/kg dry	0.0355	0.00030 U	102	68-115	5	21	
Endrin	0.041		0.0018	mg/kg dry	0.0355	0.00016 U	115	59-123	7	19	
Surrogate: 2,4,5,6-TCMX	0.028			mg/kg dry	0.0355		79	64-125			
Surrogate: Decachlorobiphenyl	0.035			mg/kg dry	0.0355		100	60-117			

**Polychlorinated Biphenyls by GC - Quality Control**

Batch OF14009 - EPA 3545A

**Blank (OF14009-BLK1)**

Prepared: 06/14/2010 12:16 Analyzed: 06/15/2010 14:04

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
PCB-1016/1242	0.0050	U	0.017	mg/kg wet							
PCB-1221	0.0050	U	0.017	mg/kg wet							
PCB-1232	0.0050	U	0.017	mg/kg wet							
PCB-1248	0.0050	U	0.017	mg/kg wet							
PCB-1254	0.0050	U	0.017	mg/kg wet							
PCB-1260	0.0050	U	0.017	mg/kg wet							
Surrogate: 2,4,5,6-TCMX	0.027			mg/kg wet	0.0333		81	73-147			
Surrogate: Decachlorobiphenyl	0.036			mg/kg wet	0.0333		107	21-176			

**LCS (OF14009-BS1)**

Prepared: 06/14/2010 12:16 Analyzed: 06/15/2010 14:16

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
PCB-1016/1242	0.36		0.017	mg/kg wet	0.333		108	63-146			
PCB-1260	0.39		0.017	mg/kg wet	0.333		116	63-168			
Surrogate: 2,4,5,6-TCMX	0.026			mg/kg wet	0.0333		78	73-147			
Surrogate: Decachlorobiphenyl	0.033			mg/kg wet	0.0333		99	21-176			

**Matrix Spike (OF14009-MS1)**

Prepared: 06/14/2010 12:16 Analyzed: 06/15/2010 14:29

Source: B002740-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
PCB-1016/1242	0.40		0.017	mg/kg dry	0.335	0.0051 U	120	63-146			
PCB-1260	0.41		0.017	mg/kg dry	0.335	0.0051 U	123	63-168			
Surrogate: 2,4,5,6-TCMX	0.028			mg/kg dry	0.0335		83	73-147			
Surrogate: Decachlorobiphenyl	0.036			mg/kg dry	0.0335		108	21-176			

**Matrix Spike Dup (OF14009-MSD1)**

Prepared: 06/14/2010 12:16 Analyzed: 06/15/2010 14:41

Source: B002740-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
PCB-1016/1242	0.38		0.017	mg/kg dry	0.337	0.0051 U	114	63-146	5	31	
PCB-1260	0.40		0.017	mg/kg dry	0.337	0.0051 U	118	63-168	3	50	



### QUALITY CONTROL

#### Polychlorinated Biphenyls by GC - Quality Control

Batch 0F14009 - EPA 3545A

##### Matrix Spike Dup (0F14009-MSD1) Continued

Prepared: 06/14/2010 12:16 Analyzed: 06/15/2010 14:41

Source: B002740-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: 2,4,5,6-TCMX	0.026			mg/kg dry	0.0337		78	73-147			
Surrogate: Decachlorobiphenyl	0.036			mg/kg dry	0.0337		106	21-176			

#### FL Petroleum Range Organics - Quality Control

Batch 0F11008 - EPA 3545A

##### Blank (0F11008-BLK1)

Prepared: 06/11/2010 09:21 Analyzed: 06/14/2010 18:18

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
TPH (C8-C40)	0.83	U	6.6	mg/kg wet							
Surrogate: n-Nonatriacontane	3.0			mg/kg wet	3.33		89	23-189			
Surrogate: o-Terphenyl	1.7			mg/kg wet	1.67		99	64-118			

##### LCS (0F11008-BS1)

Prepared: 06/11/2010 09:21 Analyzed: 06/14/2010 18:41

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
TPH (C8-C40)	57		6.6	mg/kg wet	56.7		100	63-153			
Surrogate: n-Nonatriacontane	2.8			mg/kg wet	3.33		83	60-118			
Surrogate: o-Terphenyl	1.7			mg/kg wet	1.67		102	62-109			

##### Matrix Spike (0F11008-MS1)

Prepared: 06/11/2010 09:21 Analyzed: 06/15/2010 10:32

Source: B002398-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
TPH (C8-C40)	48	U	380	mg/kg dry	65.7	9800	NR	63-122			QM-17
Surrogate: n-Nonatriacontane	0.0			mg/kg dry	3.86			23-189			QS-04
Surrogate: o-Terphenyl	0.0			mg/kg dry	1.93			64-118			QS-04

##### Matrix Spike Dup (0F11008-MSD1)

Prepared: 06/11/2010 09:21 Analyzed: 06/15/2010 10:56

Source: B002398-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
TPH (C8-C40)	48	U	380	mg/kg dry	65.4	9800	NR	63-122		30	QM-17
Surrogate: n-Nonatriacontane	0.0			mg/kg dry	3.85			23-189			QS-04
Surrogate: o-Terphenyl	0.0			mg/kg dry	1.92			64-118			QS-04

#### Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 0F11015 - EPA 3050B

##### Blank (0F11015-BLK1)

Prepared: 06/11/2010 10:40 Analyzed: 06/14/2010 15:11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	3.20	U	10.0	mg/kg wet							
Antimony	0.540	U	1.00	mg/kg wet							



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**QUALITY CONTROL**

**Metals by EPA 6000/7000 Series Methods - Quality Control**

Batch 0F11015 - EPA 3050B

**Blank (0F11015-BLK1) Continued**

Prepared: 06/11/2010 10:40 Analyzed: 06/14/2010 15:11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.330	U	0.500	mg/kg wet							
<b>Barium</b>	<b>0.0583</b>	<b>I</b>	0.500	mg/kg wet							
Beryllium	0.00940	U	0.0500	mg/kg wet							
Cadmium	0.0240	U	0.0500	mg/kg wet							
Calcium	2.20	U	25.0	mg/kg wet							
Chromium	0.0650	U	0.500	mg/kg wet							
Cobalt	0.0340	U	0.500	mg/kg wet							
<b>Iron</b>	<b>1.49</b>	<b>I</b>	2.50	mg/kg wet							O-01
Lead	0.170	U	0.500	mg/kg wet							
Magnesium	2.10	U	25.0	mg/kg wet							
Manganese	0.0180	U	0.500	mg/kg wet							
Nickel	0.0540	U	2.50	mg/kg wet							
Potassium	4.80	U	25.0	mg/kg wet							
Selenium	0.400	U	0.500	mg/kg wet							
Silver	0.0870	U	0.500	mg/kg wet							
Sodium	11.0	U	25.0	mg/kg wet							
Thallium	0.260	U	0.500	mg/kg wet							
Vanadium	0.0610	U	0.500	mg/kg wet							
Zinc	0.0850	U	2.50	mg/kg wet							

**LCS (0F11015-BS1)**

Prepared: 06/11/2010 10:40 Analyzed: 06/14/2010 15:13

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	263		10.0	mg/kg wet	261		101	85-115			
Antimony	26.8		1.00	mg/kg wet	26.1		103	85-115			
Arsenic	26.1		0.500	mg/kg wet	26.1		100	85-115			
Barium	25.8		0.500	mg/kg wet	26.1		99	85-115			
Beryllium	2.59		0.0500	mg/kg wet	2.61		99	85-115			
Cadmium	2.57		0.0500	mg/kg wet	2.61		99	85-115			
Calcium	264		25.0	mg/kg wet	261		101	85-115			
Chromium	26.1		0.500	mg/kg wet	26.1		100	85-115			
Cobalt	26.0		0.500	mg/kg wet	26.1		100	85-115			
Iron	134		2.50	mg/kg wet	130		103	85-115			
Lead	26.6		0.500	mg/kg wet	26.1		102	85-115			
Magnesium	266		25.0	mg/kg wet	261		102	85-115			
Manganese	25.9		0.500	mg/kg wet	26.1		99	85-115			
Nickel	26.0		2.50	mg/kg wet	26.1		100	85-115			
Potassium	1300		25.0	mg/kg wet	1300		100	85-115			
Selenium	25.8		0.500	mg/kg wet	26.1		99	85-115			
Silver	5.24		0.500	mg/kg wet	5.21		100	85-115			
Sodium	1320		25.0	mg/kg wet	1300		101	85-115			
Thallium	26.0		0.500	mg/kg wet	26.1		100	85-115			
Vanadium	25.7		0.500	mg/kg wet	26.1		99	85-115			
Zinc	25.9		2.50	mg/kg wet	26.1		99	85-115			

**Matrix Spike (0F11015-MS1)**

Prepared: 06/11/2010 10:40 Analyzed: 06/14/2010 15:16

Source: B002730-01



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**QUALITY CONTROL**

**Metals by EPA 6000/7000 Series Methods - Quality Control**

Batch 0F11015 - EPA 3050B

**Matrix Spike (0F11015-MS1) Continued**

Prepared: 06/11/2010 10:40 Analyzed: 06/14/2010 15:16

**Source: B002730-01**

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	34700		1320	mg/kg dry	33100	1020	102	80-120			
Antimony	3340		132	mg/kg dry	3310	71.5 U	101	80-120			
Arsenic	3290		66.2	mg/kg dry	3310	43.7 U	100	80-120			
Barium	3290		66.2	mg/kg dry	3310	47.7	98	80-120			
Beryllium	332		6.62	mg/kg dry	331	1.24 U	100	80-120			
Cadmium	318		6.62	mg/kg dry	331	3.18 U	96	80-120			
Calcium	174000		3310	mg/kg dry	33100	138000	107	80-120			
Chromium	3300		66.2	mg/kg dry	3310	8.60 U	100	80-120			
Cobalt	3250		66.2	mg/kg dry	3310	4.50 U	98	80-120			
Iron	17200		331	mg/kg dry	16500	693	100	80-120			
Lead	3310		66.2	mg/kg dry	3310	22.5 U	100	80-120			
Magnesium	34700		3310	mg/kg dry	33100	1120	102	80-120			
Manganese	3290		66.2	mg/kg dry	3310	7.62	99	80-120			
Nickel	3240		331	mg/kg dry	3310	7.86	98	80-120			
Potassium	170000		3310	mg/kg dry	165000	4560	100	80-120			
Selenium	3220		66.2	mg/kg dry	3310	52.9 U	97	80-120			
Silver	665		66.2	mg/kg dry	662	11.5 U	100	80-120			
Sodium	187000		3310	mg/kg dry	165000	20000	101	80-120			
Thallium	3290		66.2	mg/kg dry	3310	24.4	99	80-120			
Vanadium	3270		66.2	mg/kg dry	3310	8.07 U	99	80-120			
Zinc	3360		331	mg/kg dry	3310	149	97	80-120			

**Matrix Spike Dup (0F11015-MSD1)**

Prepared: 06/11/2010 10:40 Analyzed: 06/14/2010 15:18

**Source: B002730-01**

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Aluminum	33700		1310	mg/kg dry	32600	1020	100	80-120	3	30	
Antimony	3300		131	mg/kg dry	3260	70.5 U	101	80-120	1	30	
Arsenic	3250		65.3	mg/kg dry	3260	43.1 U	100	80-120	1	30	
Barium	3230		65.3	mg/kg dry	3260	47.7	97	80-120	2	30	
Beryllium	325		6.53	mg/kg dry	326	1.23 U	100	80-120	2	30	
Cadmium	314		6.53	mg/kg dry	326	3.13 U	96	80-120	1	30	
Calcium	172000		3260	mg/kg dry	32600	138000	104	80-120	0.9	30	
Chromium	3230		65.3	mg/kg dry	3260	8.48 U	99	80-120	2	30	
Cobalt	3200		65.3	mg/kg dry	3260	4.44 U	98	80-120	2	30	
Iron	16900		326	mg/kg dry	16300	693	99	80-120	2	30	
Lead	3270		65.3	mg/kg dry	3260	22.2 U	100	80-120	1	30	
Magnesium	34000		3260	mg/kg dry	32600	1120	101	80-120	2	30	
Manganese	3230		65.3	mg/kg dry	3260	7.62	99	80-120	2	30	
Nickel	3190		326	mg/kg dry	3260	7.86	97	80-120	1	30	
Potassium	165000		3260	mg/kg dry	163000	4560	98	80-120	3	30	
Selenium	3190		65.3	mg/kg dry	3260	52.2 U	98	80-120	1	30	
Silver	656		65.3	mg/kg dry	653	11.4 U	100	80-120	1	30	
Sodium	184000		3260	mg/kg dry	163000	20000	100	80-120	1	30	
Thallium	3230		65.3	mg/kg dry	3260	24.4	98	80-120	2	30	
Vanadium	3210		65.3	mg/kg dry	3260	7.96 U	98	80-120	2	30	
Zinc	3320		326	mg/kg dry	3260	149	97	80-120	1	30	



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**QUALITY CONTROL**

**Metals by EPA 6000/7000 Series Methods - Quality Control**

Batch 0F11015 - EPA 3050B

**Classical Chemistry Parameters - Quality Control**

Batch 0F17009 - Same

**LCS (0F17009-BS1)**

Prepared: 06/17/2010 10:16 Analyzed: 06/17/2010 11:42

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
pH	7.0			pH Units	7.00		100	90-110			

**LCS Dup (0F17009-BSD1)**

Prepared: 06/17/2010 10:16 Analyzed: 06/17/2010 11:42

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
pH	7.0			pH Units	7.00		100	90-110	0	200	

**QUALITY CONTROL**

**Volatile Organic Compounds by GCMS - Quality Control**

Batch 0F14009 - EPA 5030B\_MS

**Blank (0F14009-BLK1)**

Prepared: 06/14/2010 10:35 Analyzed: 06/14/2010 13:38

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.0003	U	0.0010	mg/kg wet							
1,1,2,2-Tetrachloroethane	0.0002	U	0.0010	mg/kg wet							
1,1,2-Trichloroethane	0.0002	U	0.0010	mg/kg wet							
1,1-Dichloroethane	0.0002	U	0.0010	mg/kg wet							
1,1-Dichloroethene	0.0004	U	0.0010	mg/kg wet							
1,2-Dichloroethane	0.0002	U	0.0010	mg/kg wet							
1,2-Dichloropropane	0.0003	U	0.0010	mg/kg wet							
2-Butanone	0.0014	U	0.0050	mg/kg wet							
2-Hexanone	0.0007	U	0.0050	mg/kg wet							
4-Methyl-2-pentanone	0.0013	U	0.0050	mg/kg wet							
Acetone	0.0008	U	0.0050	mg/kg wet							
Benzene	0.0002	U	0.0010	mg/kg wet							
Bromodichloromethane	0.0002	U	0.0010	mg/kg wet							
Bromoform	0.0003	U	0.0010	mg/kg wet							
Bromomethane	0.0005	U	0.0010	mg/kg wet							
Carbon disulfide	0.0004	U	0.0010	mg/kg wet							
Carbon tetrachloride	0.0002	U	0.0010	mg/kg wet							
Chlorobenzene	0.0003	U	0.0010	mg/kg wet							
Chloroethane	0.0006	U	0.0010	mg/kg wet							
Chloroform	0.0002	U	0.0010	mg/kg wet							
Chloromethane	0.0006	U	0.0010	mg/kg wet							
cis-1,2-Dichloroethene	0.0003	U	0.0010	mg/kg wet							
cis-1,3-Dichloropropene	0.0002	U	0.0010	mg/kg wet							
Dibromochloromethane	0.0002	U	0.0010	mg/kg wet							
Ethylbenzene	0.0003	U	0.0010	mg/kg wet							
m,p-Xylenes	0.0006	U	0.0010	mg/kg wet							
Methylene chloride	0.0004	U	0.0050	mg/kg wet							
o-Xylene	0.0003	U	0.0010	mg/kg wet							
Styrene	0.0002	U	0.0010	mg/kg wet							
Tetrachloroethene	0.0005	U	0.0010	mg/kg wet							



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**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch 0F14009 - EPA 5030B\_MS

**Blank (0F14009-BLK1) Continued**

Prepared: 06/14/2010 10:35 Analyzed: 06/14/2010 13:38

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene	0.0003	U	0.0010	mg/kg wet							
trans-1,2-Dichloroethene	0.0002	U	0.0010	mg/kg wet							
trans-1,3-Dichloropropene	0.0003	U	0.0010	mg/kg wet							
Trichloroethene	0.0003	U	0.0010	mg/kg wet							
Vinyl chloride	0.0002	U	0.0010	mg/kg wet							
Xylenes (Total)	0.0006	U	0.0010	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	42			ug/L	50.0		84	71-126			
Surrogate: Dibromofluoromethane	40			ug/L	50.0		79	72-133			
Surrogate: Toluene-d8	43			ug/L	50.0		86	80-123			

**LCS (0F14009-BS1)**

Prepared: 06/14/2010 10:35 Analyzed: 06/14/2010 13:05

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	15		1.0	ug/L	20.0		75	61-124			
Benzene	18		1.0	ug/L	20.0		92	59-133			
Chlorobenzene	17		1.0	ug/L	20.0		86	69-121			
Toluene	18		1.0	ug/L	20.0		92	66-119			
Trichloroethene	19		1.0	ug/L	20.0		95	71-122			
Surrogate: 4-Bromofluorobenzene	40			ug/L	50.0		80	71-126			
Surrogate: Dibromofluoromethane	44			ug/L	50.0		89	72-133			
Surrogate: Toluene-d8	44			ug/L	50.0		88	80-123			

**Matrix Spike (0F14009-MS1)**

Prepared: 06/14/2010 10:35 Analyzed: 06/14/2010 14:11

Source: A003018-09

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	13		1.0	ug/L	20.0	0.44 U	64	61-124			
Benzene	18		1.0	ug/L	20.0	0.21 U	91	59-133			
Chlorobenzene	15		1.0	ug/L	20.0	0.28 U	74	69-121			
Toluene	20		1.0	ug/L	20.0	0.31 U	98	66-119			
Trichloroethene	20		1.0	ug/L	20.0	1.8	89	71-122			
Surrogate: 4-Bromofluorobenzene	42			ug/L	50.0		84	71-126			
Surrogate: Dibromofluoromethane	37			ug/L	50.0		74	72-133			
Surrogate: Toluene-d8	43			ug/L	50.0		86	80-123			

**Matrix Spike Dup (0F14009-MSD1)**

Prepared: 06/14/2010 10:35 Analyzed: 06/14/2010 14:45

Source: A003018-09

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	12		1.0	ug/L	20.0	0.44 U	58	61-124	9	23	QM-07
Benzene	18		1.0	ug/L	20.0	0.21 U	91	59-133	0.05	19	
Chlorobenzene	15		1.0	ug/L	20.0	0.28 U	74	69-121	0.4	18	
Toluene	20		1.0	ug/L	20.0	0.31 U	98	66-119	0.3	21	
Trichloroethene	19		1.0	ug/L	20.0	1.8	87	71-122	2	26	
Surrogate: 4-Bromofluorobenzene	43			ug/L	50.0		86	71-126			
Surrogate: Dibromofluoromethane	46			ug/L	50.0		92	72-133			

**QUALITY CONTROL****Volatile Organic Compounds by GCMS - Quality Control**

Batch OF14009 - EPA 5030B\_MS

**Matrix Spike Dup (OF14009-MSD1) Continued**

Prepared: 06/14/2010 10:35 Analyzed: 06/14/2010 14:45

Source: A003018-09

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: Toluene-d8	43			ug/L	50.0		87	80-123			

**Chlorinated Herbicides by GC - Quality Control**

Batch OF11026 - EPA 3550B

**Blank (OF11026-BLK1)**

Prepared: 06/11/2010 10:58 Analyzed: 06/15/2010 15:30

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,5-T	0.0019	U	0.010	mg/kg wet							
2,4,5-TP (Silvex)	0.0013	U	0.010	mg/kg wet							
2,4-D	0.0035	U	0.010	mg/kg wet							
2,4-DB	0.0058	U	0.010	mg/kg wet							
3,5-DCBA	0.0052	U	0.010	mg/kg wet							
4-Nitrophenol	0.0061	U	0.010	mg/kg wet							
Acifluorfen	0.0048	U	0.010	mg/kg wet							
Bentazon	0.0012	U	0.010	mg/kg wet							
Chloramben	0.0010	U	0.010	mg/kg wet							
Dacthal	0.0016	U	0.010	mg/kg wet							
Dalapon	0.0056	U	0.010	mg/kg wet							
Dicamba	0.0017	U	0.010	mg/kg wet							
Dichlorprop	0.0029	U	0.010	mg/kg wet							
Dinoseb	0.0036	U	0.010	mg/kg wet							
MCPA	0.16	U	1.0	mg/kg wet							
MCPP	0.53	U	1.0	mg/kg wet							
Pentachlorophenol	0.0013	U	0.010	mg/kg wet							
Picloram	0.0018	U	0.010	mg/kg wet							
Surrogate: 2,4-DCAA	0.037			mg/kg wet	0.0400		93	39-174			

**LCS (OF11026-BS1)**

Prepared: 06/11/2010 10:58 Analyzed: 06/15/2010 15:54

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,5-TP (Silvex)	0.039		0.010	mg/kg wet	0.0400		98	58-160			
2,4-D	0.041		0.010	mg/kg wet	0.0400		103	38-169			
2,4-DB	0.046		0.010	mg/kg wet	0.0400		114	53-187			
Bentazon	0.039		0.010	mg/kg wet	0.0400		98	22-156			
Dalapon	0.049		0.010	mg/kg wet	0.0400		123	10-192			
Dicamba	0.039		0.010	mg/kg wet	0.0400		99	64-135			
Picloram	0.034		0.010	mg/kg wet	0.0400		85	10-185			
Surrogate: 2,4-DCAA	0.039			mg/kg wet	0.0400		98	39-174			

**Matrix Spike (OF11026-MS1)**

Prepared: 06/11/2010 10:58 Analyzed: 06/15/2010 16:19

Source: A003129-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,5-TP (Silvex)	0.075		0.020	mg/kg dry	0.0805	0.0026 U	93	58-160			
2,4-D	0.073		0.020	mg/kg dry	0.0805	0.0070 U	90	38-169			



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### QUALITY CONTROL

#### Chlorinated Herbicides by GC - Quality Control

Batch 0F11026 - EPA 3550B

##### Matrix Spike (0F11026-MS1) Continued

Prepared: 06/11/2010 10:58 Analyzed: 06/15/2010 16:19

Source: A003129-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4-DB	0.087		0.020	mg/kg dry	0.0805	0.012 U	108	53-187			
Bentazon	0.068		0.020	mg/kg dry	0.0805	0.0024 U	85	22-156			
Dalapon	0.11		0.020	mg/kg dry	0.0805	0.011 U	131	10-192			
Dicamba	0.073		0.020	mg/kg dry	0.0805	0.0034 U	91	64-135			
Picloram	0.049		0.020	mg/kg dry	0.0805	0.0036 U	61	10-185			
Surrogate: 2,4-DCAA	0.072			mg/kg dry	0.0805		90	39-174			

##### Matrix Spike Dup (0F11026-MSD1)

Prepared: 06/11/2010 10:58 Analyzed: 06/15/2010 16:43

Source: A003129-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2,4,5-TP (Silvex)	0.078		0.020	mg/kg dry	0.0808	0.0026 U	97	58-160	4	23	
2,4-D	0.085		0.020	mg/kg dry	0.0808	0.0071 U	105	38-169	15	43	
2,4-DB	0.098		0.020	mg/kg dry	0.0808	0.012 U	122	53-187	12	47	
Bentazon	0.071		0.020	mg/kg dry	0.0808	0.0024 U	88	22-156	5	50	
Dalapon	0.092		0.020	mg/kg dry	0.0808	0.011 U	114	10-192	13	50	
Dicamba	0.077		0.020	mg/kg dry	0.0808	0.0034 U	95	64-135	4	50	
Picloram	0.051		0.020	mg/kg dry	0.0808	0.0036 U	63	10-185	3	37	
Surrogate: 2,4-DCAA	0.080			mg/kg dry	0.0808		99	39-174			

#### Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 0F10027 - EPA 7471B

##### Blank (0F10027-BLK1)

Prepared: 06/10/2010 16:30 Analyzed: 06/11/2010 06:56

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.00270	U	0.0100	mg/kg wet							

##### LCS (0F10027-BS1)

Prepared: 06/10/2010 16:30 Analyzed: 06/11/2010 06:59

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.615		0.0100	mg/kg wet	0.600		102	85-115			

##### Matrix Spike (0F10027-MS1)

Prepared: 06/10/2010 16:30 Analyzed: 06/11/2010 07:05

Source: A002980-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.62		0.0944	mg/kg dry	5.31	0.0255 U	87	85-115			

##### Matrix Spike Dup (0F10027-MSD1)

Prepared: 06/10/2010 16:30 Analyzed: 06/11/2010 07:09

Source: A002980-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.73		0.0944	mg/kg dry	5.48	0.0255 U	86	85-115	2	10	



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**QUALITY CONTROL**

**Metals by EPA 6000/7000 Series Methods - Quality Control**

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*Batch 0F10027 - EPA 7471B*

**FLAGS/NOTES AND DEFINITIONS**

PQL	PQL: Practical Quantitation Limit.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value. The associated sample note or project narrative indicate the causative reason.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*	Not reported due to interference.
O-01	This compound is a common laboratory contaminant.
QB-01	The method blank had a positive result for the analyte; however, the concentration in the method blank is less than 10% of the sample result, which minimizes the impact of the deviation.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, the impact on data quality is minimal.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QM-14	Confirmed matrix effects
QM-17	Matrix spike recovery was outside acceptance limits due to high concentrations of analyte in source sample.
QS-03	Surrogate recovery outside acceptance limits.
QS-04	Surrogate recovery not calculated. Surrogate diluted out of the calibration range.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, the impact on data quality is minimal.



**ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD**

10775 Central Port Dr.  
Orlando, FL 32824

4810 Executive Park Court, Suite 211  
Jacksonville, FL 32216-6069  
(904) 296-3007 Fax (904) 296-8210

102-A Woodwinds Industrial Ct.  
Cary, NC 27511  
(919) 467-3090 Fax (919) 467-3515

Page \_\_\_ of \_\_\_

Client Name <b>ENVIRONMENTAL REMEDIATION SVCS CC I - Cecil Field</b>		Requested Analyses							Requested Turnaround Times	
Address <b>760 TALLEYRAND AVE</b>		TCL 8270 TCL 8260 8270 PAH/5min FIPO 8081 TCL 8151 TCL 8082 pH TAL metals							Note: Rush requests subject to acceptance by the facility	
City/ST/Zip <b>Jacksonville, FL 32202</b>									Standard <input type="checkbox"/>	
Tel <b>(904) 791-9992</b>		Preservation (See Codes) (Combine as necessary)							Due <b>6/16/10</b>	
Fax		Lab Workorder <b>B002730</b>							Sample Comments	
Reporting Contact										
Billing Contact										
Facility # (if required)										
Sampler(s) Name, Affiliation (Print) <b>Valtious Morris</b>										
Sampler(s) Signature <i>Valtious Morris</i>										

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers													
1	Newberry Pit 1		1445	G	Soil	7	X	X	X	X	X	X	X	X	X	X			
2	" "		1446	G															
3	" "		1447	G															
4	" "		1450	G															
5	" "		1452	G															
6	" "		1454	G															
7	" "		1455	G															

<- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
		<i>Valtious Morris</i>	6-9-10/17:15	<i>C. Tomp</i>	6/1/10 17:15
Comments		Relinquished By	Date/Time	Received By	Date/Time
Cooler #'s & Temps on Receipt <i>Jx017 @ 1.8</i>				Condition Upon Receipt Acceptable <input type="checkbox"/> Unacceptable <input type="checkbox"/>	

Matrix : GW-Groundwater SO-Soil SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments)

Preservation: H-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist





Titan Florida  
11000 NW 121 Way  
Medley, FL 33178  
Phone (305) 827-7441  
Fax (305) 827-7443

June 17, 2010

Dear Customer:

Titan America Pennsuco Quarry, FDOT Mine 87-145 is authorized under the Florida Administrative Chapter 14-103, Aggregate Source Approval, to supply aggregate materials to FDOT projects. All material comes from below surface mining operation on site and no material is accepted outside the mining operation.  
Our product ASTM #57 FDOT Code 10 is an approved FDOT material.

Should you require further information on our products, please feel free to contact me.

Sincerely,

Robert Melendez  
Quality Control Supervisor  
Titan America, LLC-Pennsuco Aggregate  
Office: (305) 827-7441  
Cell: (305) 986-0923  
Fax: (305) 827-7443  
[rmelendez@titanamerica.com](mailto:rmelendez@titanamerica.com)

A Titan Group Company

Appendix J  
Excavation Permit

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### JACKSONVILLE AVIATION AUTHORITY CECIL FIELD DIG PERMIT/REQUEST

1. Costs associated with utility locates will be the responsibility of the requestor.
2. The requestor is responsible for the repair of any utilities damaged during the digging operation. Hand digging to locate lines is recommended.
3. The JAA Cecil Field Aviation does not accept any financial responsibility associated with repairs due to any other damage associated with this request.
4. Contact "Sunshine State One Call Center" to coordinate all your utility locates. The service is free of charge.

REQUESTOR (NAME): Craig Haas PHONE NUMBER: 863-286-8320

COMPANY: Cham Hill REQUEST DATE: Jan 6, 2010

LOCATION(S): (Attach Map) See Attached Bldg 502 & Bldg 290A

PURPOSE: Environmental Restoration

UTILITY LOCATED AND/OR AREA SCREENED (Sunshine State One Call Center: 1-800-432-4770)

	YES	NO
GAS:	_____	_____
ELECTRICAL:	_____	_____
WATER:	_____	_____
SEWAGE:	_____	_____
CABLE:	_____	_____
TELEPHONE:	_____	_____
STORMWATER:	_____	_____

COMMENTS: Sunshine State One  
Ticket # 005005827  
(see attached)

[Signature]  
(Maintenance) Aviation Facilities Coordinator

6/14/10  
Approval/Disapproval Date:

[Signature]  
(Env/Planning/Eng) Facilities Manager

6/15/10  
Approval/Disapproval Date:

Cecil Field Manager: Rusty Chandler 573-1613  
Aviation Facilities Coordinator: Roy Crague 573-1607  
Senior Resident Inspector: Cecil Poston 741-2227

[Signature] 6/14/10 Approver  
Facilities Tech: Chris West 573-1605

## Weinberg, Noah/JAX

---

**From:** irth\_host@callsunshine.com  
**Sent:** Wednesday, June 09, 2010 8:57 AM  
**To:** Weinberg, Noah/JAX  
**Subject:** SSOCOF CONFRM 2010/06/09 #00001 160001277-000 NORM RPLC

CONFRM 00001 CALL SUNSHINE 06/09/10 08:57:21ET 160001277-000 GRID Ticket : 160001277 Rev:000  
Taken: 06/09/10 08:54ET Old Tkt: 090005199 Taken: 03/31/10 13:33ET Oper: KIM

State: FL Cnty: DUVAL GeoPlace: JACKSONVILLE  
CallerPlace: JACKSONVILLE  
Subdivision: CECIL FIELD AIRPORT

Address :  
Street : AVIATION AVE  
Cross 1 : 1ST ST  
Within 1/4 mile: Y

Locat: FROM THE INTER OF AVIATION AVE AND 1ST ST TRAVEL E 160FT THEN SE APPROX  
1.26 MILES ALONG THE AIRPORT TERMINAL TO THE BLDG 290A AND LOCATE THE ENTIRE N SIDE OF THE  
BLDG WHICH IS APPROX 10FT X 10FT

:  
Remarks : GRID PER LOCATE \*\*\*TO ALL LOCATORS PLEASE CONTACT KELLY PETTYCOURT FROM JAA AT  
904-573-1604 PRIOR TO LOCATE TO OBTAIN ACCESS TO AIRPORT PREMISES THIS TICKET REPLACES TICKET  
#090005199 DOROTHY B 42 2010/06/09 08:54:19  
\*\*\* LOOKUP BY MANUAL \*\*\*

:  
Grids : 3012B8152D

Work date: 06/14/10 Time: 08:00ET Hrs notc: 071 Category: 3 Duration: 02 DAYS Due Date :  
06/11/10 Time: 23:59ET Exp Date : 07/09/10 Time: 23:59ET Work type: ENVIRONMENTAL CLEAN UP  
Boring: N White-lined: Y  
Ug/Oh/Both: U Machinery: Y Depth: 2FT Permits: Y PENDING Done for : US NAVY

Company : CH2M HILL CONSTRUCTORS, INC. Type: CONT Co addr : 10142 103RD ST Co addr2: SUITE  
105  
City : JACKSONVILLE State: FL Zip: 32210  
Caller : NOAH WEINBERG Phone: 904-777-4812 Ext: 222 Contact : NOAH WEINBERG Phone: 623-521-  
4503  
BestTime: 9-5  
Mobile : 623-521-4503  
Fax : 352-381-3915  
Email : [NOAH.WEINBERG@CH2M.COM](mailto:NOAH.WEINBERG@CH2M.COM)

Submitted: 06/09/10 08:54ET Oper: DOR Chan: 42  
Mbrs : CCTV03 JE1359 JEA JEA773 SBF17

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
 AGGREGATE SYSTEM  
 COARSE AGGREGATE CODE FORM

FORM 42-4201  
 MATERIALS  
 6/14

SOURCE IDENTIFICATION

PROJECT NO. \_\_\_\_\_ PAY ITEM NO. \_\_\_\_\_ MATERIAL NO. \_\_\_\_\_  
 SAMPLE NO. 101803 LAB NO. \_\_\_\_\_ TESTED BY AJ DATE SAMPLED 05/04/10  
 M M D D Y Y  
 SAMPLED BY AJ DATE TESTED 05/04/10 SOURCE NO. TM-439 MINE NO. 87-145  
 M M D D Y Y

MATERIAL IDENTIFICATION

MATERIAL CODE 10 MATERIAL TYPE 06 SAMPLER TYPE 3 SAMPLED FROM 02 PROCESS 01

ADDITIONAL INFORMATION ASTM # 57 STONE

TEST RESULTS

FM \_\_\_\_\_ PASS 200 1.20 DRWT \_\_\_\_\_ SPCR \_\_\_\_\_ TYPR GV \_\_\_\_\_ SOUND \_\_\_\_\_  
 LA ABRA \_\_\_\_\_ GRADE \_\_\_\_\_ ABSORPTION \_\_\_\_\_ SILICA \_\_\_\_\_ CL \_\_\_\_\_  
 SUJP \_\_\_\_\_ PHOSPHATE \_\_\_\_\_ DESIGN MIX \_\_\_\_\_ ASPH/CONCRETE PLANT NO. \_\_\_\_\_  
 REMARKS \_\_\_\_\_

SAMPLE WPKGHT 3666.9 gms/lbs DRY WT. 3627.9 - LOSS 39.0 + PAN WT. 5.0

$$X-200 = \frac{((\text{Original Dry WL} - \text{Dry WL After Washing}) + \text{Minus 200 Material from Dry Sieving}) \times 100}{\text{Original Dry WL}}$$

GRADATION 10291.4

SIEVE NO.	SIEVE SIZE	ACCUM. WT.	% WEIGHT	% RETAINED	% PASSING	REMARKS
1	1 1/2"	0.0			100.0	
2	1"	0.0			100.0	
3	1/2"	5873.6			42.9	
4	#4	9924.4			3.6	
5	#8	10061.5			2.2	
6	Pan	10274.2			0.17	
7						
TOTAL WEIGHT						

Appendix K  
Final Dig and Haul Package, Building 502, Tank 502  
(Tetra Tech NUS, Inc., September 2007)

---

Document Tracking Number 07JAX0052

September 11, 2007

Project Number 112G00378

Mr. David Grabka  
Florida Department of Environmental Protection  
Twin Towers Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Reference: CLEAN IV Contract Number N62467-04-D-0055  
Contract Task Order 0025

Subject: Final Dig and Haul Package, Building 502, Tank 502  
Naval Air Station Cecil Field  
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Dig and Haul Package for the subject site. This package has been prepared for the United States Navy (Navy), Naval Facilities Engineering Command Southeast (NAVFAC SE) under Contract Task Order (CTO) 0025 for the Comprehensive Long-term Environmental Action Navy (CLEAN) IV Contract Number N62467-04-D-0055.

#### **SITE BACKGROUND**

Tank 502, a 1,000-gallon fuel oil tank, was removed in 1997, and a subsequent site assessment was performed by Harding Lawson Associates (HLA) in 1998 that recommended a soil source removal. The source removal was conducted in January 1999, and the following items were noted in the report:

- The contaminated soil associated with Tank 502 was removed.
- No free product was encountered during the excavation.
- Three monitoring wells (CEF-502-1S, CEF-502-2S, and CEF-502-5D) were abandoned because they were within the limits of the excavation.

In April 1999, a follow-up Site Assessment Report (SAR) recommended that No Further Action be conducted with regard to soils at the site. The SAR recommended that groundwater monitoring only for natural attenuation take place because benzene, ethylbenzene, xylenes, naphthalene, and total recoverable petroleum hydrocarbons (TRPH) were previously detected in excess of Florida Department of Environmental Protection (FDEP) Groundwater Cleanup Target Levels (GCTLs). The SAR noted that wells CEF-502-2S and CEF-502-5D had been abandoned, and it recommended that those wells be replaced and monitored along with CEF-502-4S. The FDEP responded in July 1999 with a Monitoring Only Plan (MOP) approval letter that required semi-annual sampling of CEF-502-1S, CEF-502-4S, CEF-502-2S, and CEF-502-5D. HLA replaced abandoned wells CEF-502-2S and CEF-502-5D with CEF-502-6S and CEF-502-7D, respectively, before the first semi-annual event in August 1999. Following the second semi-annual sampling event in March 2000, the FDEP agreed to continue groundwater monitoring. However, the FDEP required a monitoring well in the former location of CEF-502-1S and stipulated that the well should be sampled for benzene, toluene, ethylbenzene, and total xylenes using

United States Environmental Protection Agency (USEPA) Method 602; Polynuclear Aromatic Hydrocarbons (PAHs) using USEPA Method 8310; and TRPH using the Florida Petroleum Range Organics (FL-PRO) method.

During March and April 2001, TtNUS conducted a supplemental site assessment in response to the FDEP recommendations in response to the 1999 SAR. TtNUS personnel supervised the installation of a replacement well for CEF-502-1S (designated CEF-502-1SR), and sampled this well and CEF-502-4S, CEF-502-6S, and CEF-502-7D for volatile organic compounds, PAHs, and TRPH as required in the MOP. The Supplemental SAR recommended several modifications to the monitoring program including the installation and sampling of an additional well (CEF-502-8S) and sampling of an additional existing well (CEF-502-3S). The recommendations were approved by the FDEP on August 3, 2001, and were implemented during the next semi-annual sampling event in December 2001.

Four semi-annual groundwater monitoring events were conducted from June 6, 2002 through January 28, 2004. The Second Semi-Annual, Fourth Year Groundwater Monitoring Report indicated that concentrations of benzene, ethylbenzene, and total xylenes were less than their respective milestone objectives for Year 4. However, the concentrations of naphthalene and TRPH in well CEF-502-1SR were greater than the milestone objectives in Year 4.

Because the concentrations of contaminants of concern at CEF-502-1SR continued to exceed GCTLs (milestones), TtNUS recommended that semi-annual monitoring of existing wells be continued and also recommended additional characterization of the source of contamination contributing to CEF-502-1SR. This recommendation was discussed and approved at the December 2005 Naval Air Station (NAS) Cecil Field Base Realignment and Closure Cleanup Team (BCT) meeting. In November, 2006, TtNUS advanced 10 soil borings in the vicinity of CEF-502-1SR (see Figure 1). Based on field screening results and visual observations, one soil sample was collected from each location for fixed-base laboratory analysis. The samples were analyzed for PAHs including 1-methylnaphthalene and 2-methylnaphthalene using USEPA Method SW-846 8310 and for TRPH using FL-PRO. Concentrations of TRPH exceeded its FDEP Soil Cleanup Target Level (SCTL) for the samples CEF-502-SB06, CEF-502-SB07, CEF-502-SB09, and CEF-502-SB10. The soil analytical results for the remaining soil samples indicated that all target analytes were either not detected or were detected at estimated concentrations less than their respective SCTLs. The SAR Addendum detailed the results of the additional soil sampling and recommended a source removal to address contaminated soil in the vicinity of Building 502.

Based on the direction at the October 2006 BCT meeting, CH2M Hill conducted a site visit in January 2007 to evaluate the Building 502 footer as preparation for the proposed source removal. The Building 502 footer was observed to extend from 3.5 to 4.5 feet below ground surface (bgs). While excavating an access hole at historical sample point SB07 during the site visit, a pipe was observed that appeared to lead from Building 502 to the former Tank 502 location. Building 502 is currently used for police training activities.

## **GUIDANCE NOTES**

This information is provided for general guidance associated with the soil removal action. The area of excavation is shown on Figure 1. The extent of excavation will be defined in the field by TtNUS with white spraydown paint (or equivalent) prior to the execution of the removal action. The monitoring well CEF-502-1SR, with a depth of 12.48 feet bgs, will be destroyed during the excavation activities. This well will be reinstalled and sampled by TtNUS upon completion of the excavation and site restoration.

Prior to the removal action a utility clearance will be conducted to field locate and mark all utilities in the area of and near the proposed soil removal action. The contractor shall coordinate with TtNUS regarding the utility clearance and notification of Sunshine State One Call of Florida and the Jacksonville Aviation Authority. The abandoned fuel line can be removed during the soil removal action.

The area of soil removal is a 15-foot by 18-foot area as shown in Figure 1. The soil will be excavated to a depth of approximately 3.5 feet bgs to the top of the building footer. The remaining soil will be removed in 4-foot wide trenches running 15 feet west to east to the depth of the water table (approximately 9 feet bgs). The contractor will place a polyethylene or other appropriate material liner along the wall of each trench preceding backfill to serve as a visual barrier between clean fill material and contaminated soil to be removed. Each trench will be immediately backfilled with certified clean fill material consisting of fine gravel or sands free of debris, foreign objects, organics, unsuitable soil, and other deleterious material. The backfill will be placed in layers not to exceed 8 inches and compacted to 95 percent of the Standard Proctor maximum density (ASTM D698) and field verified prior to digging the next trench. Density testing will be conducted on every compacted lift and at grade prior to asphalt replacement. The contractor will continue to remove and replace soil in 4-foot trench intervals until the proposed excavation area has been removed. Clean fill material will be added in 8-inch intervals and compacted to 95 percent of the Standard Proctor maximum density for the remaining excavated volume, and the surface will be restored to its original grade and resurfaced. The asphalt replacement will be equal to or better than the existing pavement. It is assumed that 6 to 8 inches of processed gravel and 2 layers of 2½ -inch Class 2 asphalt compacted to final thickness of 2 inches each layer for total of 4 inches will be required.

The building footer will be inspected regularly during excavation activities. If the building footer is observed to be of poor quality or if undermining is observed in the vicinity of the footer during the excavation, shoring of the foundation will be conducted to facilitate the removal of soil without damage to the structure.

The contractor will be responsible for the following:

- The schedule and methods of excavation. Excavation and backfilling activities shall be conducted in accordance with OSHA 1926, Subpart P.
- All aspects of work site health and safety and compliance with OSHA 1910.120 requirements.
- Identification and avoidance of all aboveground and underground utilities or other manmade structures.
- Waste characterization, transport (both on and off site), and disposal of all excavated soil.
- Notification of TtNUS and the Navy if observations indicate that contaminants may extend beyond the planned lateral or vertical limits of the excavation.
- Saw cutting of pavement to the limits of the proposed excavation area prior to excavation. Where bituminous flexible pavement adjoins the limits of excavation, the edges adjacent to the excavation will be trimmed to neat straight lines before resurfacing.
- Depth of excavation is to the water table (approximately 9 feet bgs). Except where necessary for avoidance of structures or utilities or where otherwise specified by TtNUS, the excavation should extend to the depths presented in this Dig and Haul Package.
- Excavated soil will be stockpiled on and covered with heavy-duty polyethylene sheeting at the site. This will be done in a manner to avoid the potential for contaminating surrounding soil or surface water. Alternately, soils may be stockpiled in properly covered roll-off containers or direct loaded for off site disposal.

- Materials used to backfill the excavation will be from an uncontaminated source and be free of organic or other unsuitable material. A Proctor compaction test, ASTM D698, will be performed on fill material preceding delivery to the site and certification of clean material is required.
- Upon completion, the area of excavation will be resurfaced using Florida Department of Transportation approved materials matching existing conditions or better at the site.

If you have any questions regarding the information presented in this document, please contact me by phone at (412) 921-8163, or via e-mail at Robert.Simcik@ttnus.com.

Sincerely,



Robert F. Simcik, P.E.  
Task Order Manager

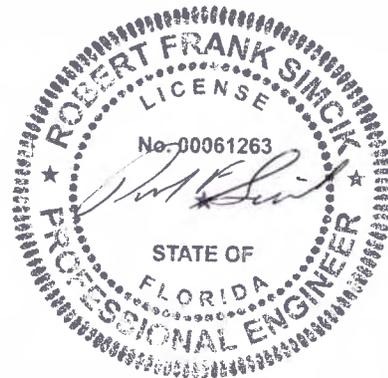
c: B. Nwokike, NAVFAC SE  
M. Halil, CH2M Hill  
K. Wimble, TtNUS  
J. Johnson, TtNUS, Information Repository  
M. Jonnet, TtNUS, DMS upload.  
CTO 0025 Project File

#### CERTIFICATION

The information herein contained is based on the information provided and associated information detailed in previous reports regarding this Site. If conditions are determined to exist that differ from those described, the undersigned Profession Engineer should be notified to evaluate the affects of any additional information on the information described in this report. This Dig and Haul Package was developed for Building 502, Tank 502 at the Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.

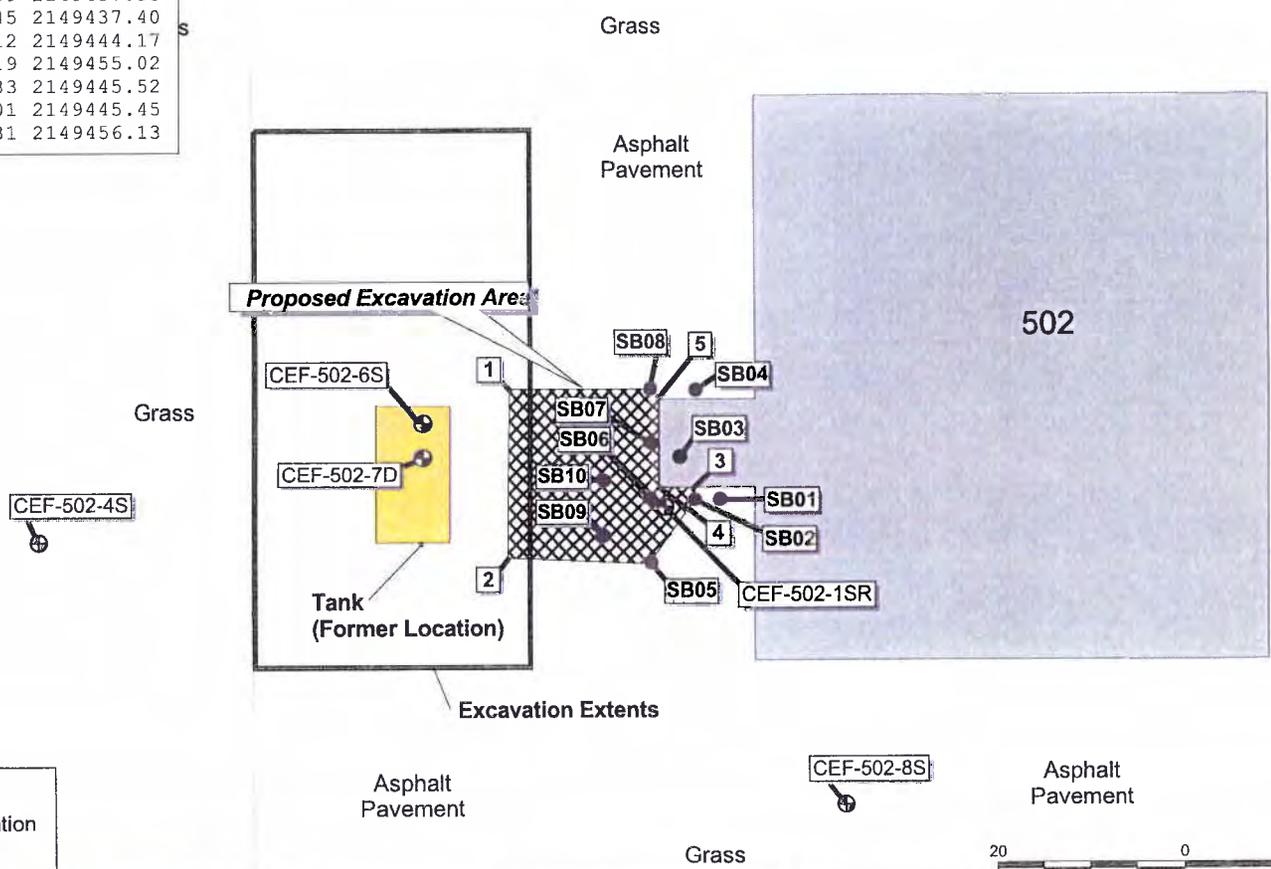
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September 7, 2007  
Robert F. Simcik, P.E.  
PE Number 61263  
Florida PE License Number 61263



**FIGURE**

CORNER	EASTING	NORTHING
1	386260.10	2149455.91
2	386259.89	2149437.95
SB05	386275.45	2149437.40
SB02	386280.12	2149444.17
3	386276.19	2149455.02
4	386276.33	2149445.52
5	386280.01	2149445.45
SB08	386275.31	2149456.13



LEGEND	
●	Soil Boring Location
⊕	Monitoring Well



DRAWN BY	DATE
MJJ	25Aug05
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



PROPOSED SOIL REMOVAL AREA  
 BUILDING 502  
 NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 248	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0

Appendix L  
Final Site Assessment Report Addendum, Building 502,  
Tank 502 (Tetra Tech NUS, Inc., December 2007)

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**TETRA TECH NUS, INC.**

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Document Tracking Number 07JAX0012

December 10, 2007

Project Number 112G00378

Mr. David Grabka  
Remedial Project Manager  
Technical Review/Federal Facilities  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Reference: Clean IV Contract Number N62467-04-D-0055  
Contract Task Order 0025

Subject: Final Site Assessment Report Addendum  
Building 502, Tank 502  
Former Naval Air Station (NAS) Cecil Field  
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Final Site Assessment Report (SAR) Addendum (SARA) for the subject site (as shown on Figure 1) under the referenced Contract Task Order (CTO). This report was prepared by TtNUS for the United States Navy, Naval Facilities Engineering Command Southeast (NAVFAC SE) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) IV Contract Number N62467-04-D-0055. This SARA is TtNUS' response to the Florida Department of Environmental Protection's (FDEP's) technical review (see Attachment A) of the Building 502, Tank 502 Groundwater Monitoring Report, (1<sup>st</sup> Semi-Annual, 4<sup>th</sup> Year) dated June 23, 2004. This report was prepared in accordance with Chapter 62-770, Florida Administrative Code (F.A.C.).

As stated in the letter included in Attachment A, the FDEP suggested additional soil investigation at Building 502 based on the continued elevated levels of naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and total recoverable petroleum hydrocarbons (TRPH) in monitoring well CEF-502-1SR. In response to the letter, a total of 10 step-out soil borings in the vicinity of CEF-502-1SR were installed and sampled for polynuclear aromatic hydrocarbons (PAHs) including 1-methylnaphthalene and 2-methylnaphthalene using United States Environmental Protection Agency (USEPA) Method SW-846 8310 and for TRPH using the Florida Petroleum Range Organics (FL-PRO) method. In addition, one round of annual sampling of the six existing wells (CEF-502-1SR, CEF-502-3S, CEF-502-4S, CEF-502-6S, CEF-502-7D, and CEF-502-8S) was conducted at the time of soil sampling. The samples were analyzed for TRPH using FL-PRO, PAHs including 1-methylnaphthalene and 2-methylnaphthalene using USEPA Method SW-846 8310, and volatile organic compounds (VOCs) using USEPA Method SW-846 8260B.

**BACKGROUND**

Tank 502, a 1,000-gallon fuel oil tank, was removed in 1997, and a subsequent site assessment was performed by Harding Lawson Associates (HLA) in 1998 that recommended a soil source removal. The



source removal was conducted in January 1999, and the following items were noted in the report (CH2M Hill Constructors, Inc.):

- The contaminated soil associated with Tank 502 was removed.
- No free product was encountered in the excavation.
- Three monitoring wells (CEF-502-1S, CEF-502-2S, and CEF-502-5D) were abandoned because they were within the limits of the excavation.

In April 1999, a follow-up SAR (HLA, 1999) recommended that no further action be conducted with regard to soils at the site. The SAR recommended that groundwater monitoring only for natural attenuation (MONA) take place as benzene, ethylbenzene, xylenes, naphthalene, and TRPH were previously detected in excess of FDEP Groundwater Cleanup Target Levels (GCTLs). The SAR noted that wells CEF-502-2S and CEF-502-5D had been abandoned, and it recommended that those wells be replaced and monitored along with CEF-502-4S. The FDEP responded in July 1999 with a Monitoring Only Plan (MOP) approval letter that required the semi-annual sampling of CEF-502-1S, CEF-502-4S, CEF-502-2S, and CEF-502-5D. A copy of the MOP approval letter is provided as Attachment B. HLA replaced the abandoned wells CEF-502-2S and CEF-502-5D with CEF-502-6S and CEF-502-7D, respectively, before the commencement of the first semi-annual event in August 1999. Following the second semi-annual sampling event, the FDEP agreed with the SAR recommendation (HLA, 1999) to continue groundwater monitoring. However, the FDEP required a monitoring well in the former location of CEF-502-1S and stipulated that the well should be sampled for benzene, toluene, ethylbenzene, and total xylenes using the USEPA Method 602; PAHs using USEPA Method 8310; and TRPH using FL-PRO.

During March and April 2001, TtNUS conducted a supplemental site assessment in response to FDEP's recommendations and comments to the 1999 SAR. TtNUS personnel supervised the installation of a replacement well for CEF-502-1S (designated CEF-502-1SR) and sampled the four wells for VOCs, PAHs, and TRPH as required in the MOP. The Supplemental SAR (TtNUS, 2001) recommended several modifications to the monitoring program including the installation and sampling of an additional well (CEF-502-8S) and sampling of an additional existing well (CEF-502-3S). The recommendations were approved by the FDEP on August 3, 2001, and were implemented during the next semi-annual sampling event in December 2001.

Four semi-annual groundwater monitoring events were conducted from June 6, 2002 through January 28, 2004. The Second Semi-Annual, Fourth Year Groundwater Monitoring Report indicated that concentrations of benzene, ethylbenzene, and total xylenes were less than their respective milestone objectives for Year 4. However, the concentrations of naphthalene and TRPH in well CEF-502-1SR were greater than the Year 4 milestone objectives. (TtNUS, 2004)

Because the concentrations of contaminants of concern (COCs) at CEF-502-1SR continued to exceed the GCTLs specified in Chapter 62-770, F.A.C., TtNUS recommended that semi-annual monitoring of existing wells be continued and also recommended additional characterization of the source of contamination contributing to CEF-502-1SR (TtNUS, 2004). This recommendation was discussed and approved at the December 2005 NAS Cecil Field Base Realignment and Closure Cleanup Team (BCT) meeting.

## **FIELD OPERATIONS**

On November 20 and 21, 2006, a total of 10 step-out soil borings were installed via hand auger in the vicinity of CEF-502-1SR. The soil boring locations are shown on Figure 1. Soil samples were collected from the hand auger bucket in the unsaturated zone at 1-foot vertical intervals beginning at 1 foot below ground surface (bgs) to 5 feet bgs. Samples were retained for field screening with an organic vapor analyzer equipped with a flame ionization detector at each of the soil boring locations. Soil vapor analyses were performed in accordance with the headspace screening method described in Chapter 62-770.200(2), F.A.C.



Based on field screening results and visual observations, one soil sample was collected from each location (soil borings SB01 through SB10) for fixed-base laboratory analysis. When no instrumental or visual indications of contamination were indicated, soil samples were collected from 5 feet bgs. Most of the samples were collected at 5 feet bgs; however, SB02 and SB09 were collected at 3 feet bgs. The samples were placed on ice and hand-delivered to ENCO Laboratories in Jacksonville, Florida for analysis. The samples were analyzed for PAHs including 1-methylnaphthalene and 2-methylnaphthalene using USEPA Method SW-846 8310 and for TRPH using FL-PRO. Excess soil was placed in 55-gallon drums for off-site disposal. The excess soil was analyzed for PAHs including 1-methylnaphthalene and 2-methylnaphthalene using USEPA Method SW-846 8310 and for TRPH using FL-PRO.

In addition, Year 5 annual sampling was conducted at the six existing wells (CEF-502-1SR, CEF-502-3S, CEF-502-4S, CEF-502-6S, CEF-502-7D, and CEF-502-8S) at the time of soil sampling. Locations of the six permanent monitoring wells at Building 502 are shown on Figure 2. The samples were placed on ice and hand delivered to ENCO Laboratories in Jacksonville, Florida for analysis. The samples were analyzed for TRPH using FL-PRO, PAHs including 1-methylnaphthalene and 2-methylnaphthalene using USEPA Method SW-846 8310, and VOCs using USEPA Method SW-846 8260B. The reported detection limits for these methods met the requirements for the similar methods stipulated in the MOP approval letter. The purge water was placed in 55-gallon drums for off-site disposal.

Prior to obtaining groundwater samples, synoptic water levels and total well depths were measured and recorded on a site-specific groundwater level measurement sheet (see Attachment C). General sampling protocols were in accordance with FDEP Standard Operating Procedures (SOPs) and TtNUS SOP SA-1.1. The data were recorded on groundwater sample log sheets and low flow purge data sheets (see Attachment C).

Water level measurements were recorded on November 20, 2006 from each of the monitoring wells shown in Table 1 prior to sample collection. The depth to water ranged from 8.46 feet bgs (CEF-502-3S) to 9.59 feet bgs (CEF-502-7D). Depth-to-water measurements, top of casing elevations, and groundwater elevations are presented in Table 1.

## RESULTS

The soil analytical results (see Attachment D) in the vicinity of CEF-502-1SR indicate the following:

- The sample from CEF-502-SB06 had a TRPH concentration of 378 milligrams per kilogram (mg/kg), which exceeds the leachability to groundwater Soil Cleanup Target Level (SCTL) of 340 mg/kg. All other analytes were either not detected or were detected at estimated concentrations less than their respective SCTLs.
- The sample from CEF-502-SB07 had a TRPH concentration of 804 mg/kg, which exceeds the residential direct exposure SCTL of 460 mg/kg and the leachability to groundwater SCTL of 340 mg/kg. All other analytes were either not detected or were detected at estimated concentrations less than their respective SCTLs.
- The sample from CEF-502-SB09 had a TRPH concentration of 3,580 mg/kg, which exceeds the industrial direct exposure SCTL of 2,700 mg/kg, the residential direct exposure SCTL of 460 mg/kg, and the leachability to groundwater SCTL of 340 mg/kg. All other analytes were either not detected or were detected at estimated concentrations less than their respective SCTLs.
- The sample from CEF-502-SB10 had a TRPH concentration of 434 mg/kg, which exceeds the leachability to groundwater SCTL of 340 mg/kg. All other analytes were either not detected or were detected at estimated concentrations less than their respective SCTLs.

The soil analytical results for the remaining soil samples (CEF-502-SB01, CEF-502-SB02, CEF-502-SB03, CEF-502-SB04, CEF-502-SB05, and CEF-502-SB08) indicate that all target analytes



were either not detected or were detected at estimated concentrations less than their respective SCTLs. Figure 3 presents exceedances in the soil samples collected as part of the SARA, and Table 2 summarizes the detected COCs.

The groundwater analytical results (see Attachment E) for CEF-502-1SR indicate the following:

- Well CEF-502-1SR had a 1-methylnaphthalene concentration of 52.8 micrograms per liter ( $\mu\text{g/L}$ ), which exceeds the GCTL of 28  $\mu\text{g/L}$ .
- CEF-502-1SR had a 2-methylnaphthalene concentration of 110  $\mu\text{g/L}$ , which exceeds the GCTL of 28  $\mu\text{g/L}$ .
- All other analytes were either not detected or were detected at estimated concentrations less than their respective GCTLs.

The analytical results (see Attachment E) for the remaining wells (CEF-502-3S, CEF-502-4S, CEF-502-6S, CEF-502-7D, and CEF-502-8S) indicate that all analytes were either not detected or were detected at estimated concentrations less than their respective GCTLs.

Figure 4 presents COC analytical data for groundwater, and Table 3 summarizes the detected COCs in groundwater.

The groundwater elevation data indicates that flow is to the east-southeast (see Figure 5), which is generally consistent with data from HLA's semi-annual monitoring reports. Historical and recent groundwater elevation data for the site are included in Table 1.

## CONCLUSIONS AND RECOMMENDATIONS

Because TRPH exceedances were detected in samples from four soil borings (CEF-502-SB06, CEF-502-SB07, CEF-502-SB09, and CEF-502-SB10) located west of Building 502, a source removal is recommended. Monitoring well 502-1SR would have to be destroyed during the excavation, but would be reinstalled after the completion of excavation activities.

TtNUS recommends continuation of the MONA program with the following modifications:

- Following the excavation, monitor the following monitoring wells semi-annually:
  - CEF-502-1SR replacement well (source well)
  - CEF-502-4S (perimeter well)
  - CEF-502-6S (perimeter well)
- Wells CEF-502-3S and CEF-502-7D should be eliminated from the MONA program.
- The recommended analytical list is as follows: PAHs, including 1-methylnaphthalene and 2-methylnaphthalene, using USEPA Method SW846 8310, and TRPH using FL-PRO.

Based on Cecil Field BCT review and input in response to these findings presented in a meeting conducted in March 2007, a draft scope of work detailing the extent of the proposed excavation was developed and submitted to the BCT for review and was subsequently approved by FDEP on August 31, 2007. It is anticipated excavation work shall commence in accordance with the approved plan in February 2008.



If you have any questions with regard to this submittal, please contact Kara Wimble at (904) 730-4669, extension 214, or via email at [kara.wimble@ttnus.com](mailto:kara.wimble@ttnus.com).

Sincerely,

Mark A. Peterson, P.G.  
PG Number 1852

Kara F. Wimble  
Project Scientist

MP/kfw

Attachments (7)

- c: B. Nwokike, NAVFAC SE (CD only)
- M. Perry, TtNUS (unbound and CD)
- D. Humbert, TtNUS (cover letter only)
- M. Speranza, TtNUS (letter only)
- M. Jonnet, TtNUS (Cecil DMS) (CD)
- S. Naik, CH2M Hill (CD)
- J. Logan, TtNUS
- R. Simcik, TtNUS (Bookcase File)
- J. Johnson, TtNUS (Information Repository)
- CTO 0025 Project File

**CERTIFICATION**

The information herein contained is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the affects of any additional information on the information described in this report. This Final Site Assessment Report Addendum was developed for Building 502, Tank 502 at the Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.

December 10, 2007  
Mark A. Peterson, P.G.  
Florida License Number PG-0001852

**TABLE 2**  
**SOIL ANALYTICAL DATA**  
**SITE ASSESSMENT REPORT ADDENDUM**  
**BUILDING 502, TANK 502**  
**NAS CECIL FIELD**  
**JACKSONVILLE, FLORIDA**  
**PAGE 1 OF 2**

CONSTITUENT	FDEP SCTLs			CEF-502-					
	Residential	Industrial	Leachability	SB01 5 ft bgs 11/20/06	SB02 3 ft bgs 11/21/06	SB03 5 ft bgs 11/21/06	SB04 5 ft bgs 11/21/06	SB05 5 ft bgs 11/20/06	SB06 5 ft bgs 11/21/06
<b>SEMIVOLATILE ORGANICS (MG/KG)</b>									
1-METHYLNAPHTHALENE	200	1800	3.1	0.0126 U	0.0115 U	0.0133 U	0.0118 U	0.0121 U	0.0113 U
2-METHYLNAPHTHALENE	210	2100	8.5	0.0117 U	0.0107 U	0.0125 U	0.011 U	0.0113 U	0.0106 U
ACENAPHTHENE	2400	20000	2.1	0.00861 U	0.00788 U	0.00914 U	0.00805 U	0.00828 U	0.00777 U
ACENAPHTHYLENE	1800	20000	27	0.0126 U	0.0115 U	0.0133 U	0.0118 U	0.0121 U	0.0113 U
ANTHRACENE	21000	300000	2500	0.00818 U	0.00749 U	0.00868 U	0.00765 U	0.00787 U	0.00739 U
BENZO(A)ANTHRACENE	NC	NC	0.8	0.00818 U	0.00749 U	0.00868 U	0.00765 U	0.00787 U	0.00739 U
BENZO(A)PYRENE	0.1	0.7	8	0.00818 U	0.00749 U	0.00868 U	0.00765 U	0.00787 U	0.00739 U
BENZO(B)FLUORANTHENE	NC	NC	2.4	0.00632 U	0.00578 U	0.00671 U	0.00591 U	0.00608 U	0.0057 U
BENZO(G,H,I)PERYLENE	2500	52000	32000	0.0121 U	0.0111 U	0.0128 U	0.0113 U	0.0116 U	0.0109 U
BENZO(K)FLUORANTHENE	NC	NC	24	0.00818 U	0.00749 U	0.00868 U	0.00765 U	0.00787 U	0.00739 U
CHRYSENE	NC	NC	77	0.00866 U	0.00792 U	0.00919 U	0.0081 U	0.00832 U	0.00782 U
DIBENZO(A,H)ANTHRACENE	NC	NC	0.7	0.0133 U	0.0122 U	0.0141 U	0.0124 U	0.0128 U	0.012 U
FLUORANTHENE	3200	59000	1200	0.0106 U	0.00966 U	0.0112 U	0.00987 U	0.0101 U	0.00953 U
FLUORENE	2600	33000	160	0.00747 U	0.00684 U	0.00793 U	0.00699 U	0.00718 U	0.00674 U
INDENO(1,2,3-CD)PYRENE	NC	NC	6.6	0.0138 U	0.0126 U	0.0146 U	0.0129 U	0.0132 U	0.0124 U
NAPHTHALENE	55	300	1.2	0.0145 U	0.0132 U	0.0154 U	0.0135 U	0.0139 U	0.0131 U
PHENANTHRENE	2200	36000	250	0.00818 U	0.00749 U	0.00868 U	0.00765 U	0.00787 U	0.00739 U
PYRENE	2400	45000	880	0.0106 U	0.00966 U	0.0112 U	0.00987 U	0.0101 U	0.00953 U
<b>TOTAL PETROLEUM HYDROCARBONS (MG/KG)</b>									
TPH (C08-C40)	460	2700	360	6.64 U	15.3	70.6	161 E	63.4	<b>378 E</b>

See notes at end of table.

**TABLE 2  
SOIL ANALYTICAL DATA  
SITE ASSESSMENT REPORT ADDENDUM  
BUILDING 502, TANK 502  
NAS CECIL FIELD  
JACKSONVILLE, FLORIDA  
PAGE 2 OF 2**

CONSTITUENT	FDEP SCTLs			CEF-502-				
	Residential	Industrial	Leachability	SB07 5 FEET 11/21/06	SB08 5 FEET 11/21/06	SB08-DU-01 1 FOOT 11/21/06	SB09 3 FEET 11/21/06	SB10 5 FEET 11/21/06
<b>SEMIVOLATILE ORGANICS (MG/KG)</b>								
1-METHYLNAPHTHALENE	200	1800	3.1	0.0117 U	0.0128 U	0.0113 U	0.0116 U	0.0127 U
2-METHYLNAPHTHALENE	210	2100	8.5	0.0109 U	0.0119 U	0.0106 U	0.0109 U	0.0118 U
ACENAPHTHENE	2400	20000	2.1	0.00801 U	0.00875 U	0.00777 U	0.00797 U	0.00867 U
ACENAPHTHYLENE	1800	20000	27	0.0117 U	0.0128 U	0.0113 U	0.0116 U	0.0127 U
ANTHRACENE	21000	300000	2500	0.00762 U	0.00832 U	0.00738 U	0.00758 U	0.00824 U
BENZO(A)ANTHRACENE	NC	NC	0.8	0.00762 U	0.00832 U	0.00738 U	0.00758 U	0.00824 U
BENZO(A)PYRENE	0.1	0.7	8	0.00762 U	0.00832 U	0.00738 U	0.00758 U	0.00824 U
BENZO(B)FLUORANTHENE	NC	NC	2.4	0.00588 U	0.00642 U	0.0057 U	0.00585 U	0.00636 U
BENZO(G,H,I)PERYLENE	2500	52000	32000	0.0113 U	0.0123 U	0.0109 U	0.0112 U	0.0122 U
BENZO(K)FLUORANTHENE	NC	NC	24	0.00762 U	0.00832 U	0.00738 U	0.00758 U	0.00824 U
CHRYSENE	NC	NC	77	0.00806 U	0.0088 U	0.00781 U	0.022 J	0.00872 U
DIBENZO(A,H)ANTHRACENE	NC	NC	0.7	0.0124 U	0.0135 U	0.012 U	0.0123 U	0.0134 U
FLUORANTHENE	3200	59000	1200	0.00982 U	0.0107 U	0.00952 U	0.00977 U	0.0106 U
FLUORENE	2600	33000	160	0.00695 U	0.00759 U	0.00674 U	0.00692 U	0.00753 U
INDENO(1,2,3-CD)PYRENE	NC	NC	6.6	0.0128 U	0.014 U	0.0124 U	0.0127 U	0.0139 U
NAPHTHALENE	55	300	1.2	0.0135 U	0.0147 U	0.0131 U	0.0134 U	0.0146 U
PHENANTHRENE	2200	36000	250	0.00762 U	0.00832 U	0.00738 U	0.00758 U	0.00824 U
PYRENE	2400	45000	880	0.00982 U	0.0107 U	0.00952 U	0.00977 U	0.0106 U
<b>TOTAL PETROLEUM HYDROCARBONS (MG/KG)</b>								
TPH (C08-C40)	460	2700	360	804 DE	185 E	299 E	3580 DE	434 E

FDEP SCTL = Florida Department of Environmental Protection Soil Cleanup Target Level, Chapter 62-777, F.A.C.

MG/KG = Milligrams per kilogram.

U = Not detected at associated detection limit.

NC = No criterion.

J = Estimated concentration.

D = Data reported from a dilution.

E = Result exceeded calibration limit.

bgs = Below ground surface.

Concentration exceeds criterion.

**TABLE 1**  
**GROUNDWATER ELEVATION AND MONITORING WELL CONSTRUCTION DATA**  
**SITE ASSESSMENT REPORT ADDENDUM**  
**BUILDING 502, TANK 502**  
**NAS CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

Well Number	Total Depth (ft bgs)	Top of Casing Elevation (ft NAVD)	April 9, 2001		December 11, 2001		March 4, 2002		June 6, 2002	
			Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)
CEF-502-1SR	12.48	82.16	6.31	75.85	5.27	76.89	4.65	77.51	8.38	73.78
CEF-502-3S	12.22	80.68	5.03	75.65	3.77	76.91	3.03	77.65	7.14	73.54
CEF-502-4S	12.36	80.68	5.07	75.61	3.73	76.95	3.02	77.66	7.18	73.50
CEF-502-6S	14.80	81.70	5.72	75.98	5.20	76.50	4.64	77.06	7.90	73.80
CEF-502-7D	29.95	81.65	6.00	75.65	4.87	76.78	4.21	77.44	7.84	73.81
CEF-502-8S	13.57	81.75	NA	NM	4.83	76.92	4.14	77.61	8.00	73.75

Well Number	Total Depth (ft bgs)	Top of Casing Elevation (ft NAVD)	December 20, 2002		June 24, 2003		January 28, 2004		November 20, 2006	
			Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)	Depth to Water (ft btoc)	Water Elevation (ft above msl)
CEF-502-1SR	12.48	82.16	4.77	77.39	5.62	76.54	8.36	73.80	9.40	72.76
CEF-502-3S	12.22	80.68	3.52	77.16	4.44	76.24	7.07	73.61	8.46	72.22
CEF-502-4S	12.36	80.68	3.54	77.14	5.45	75.23	7.17	73.51	8.6	72.08
CEF-502-6S	14.80	81.70	4.29	77.41	5.00	76.70	7.96	73.74	9.44	72.26
CEF-502-7D	29.95	81.65	4.62	77.03	5.41	76.24	7.98	73.67	9.59	72.06
CEF-502-8S	13.57	81.75	4.47	77.28	5.30	76.45	8.02	73.73	9.33	72.42

bgs = Below ground surface.

btoc = Below top of casing.

ft = Feet.

msl = Mean sea level.

NAVD = North American Vertical Datum, 1988.

NA = Not applicable.

NM = Not measured.

**TABLE 3  
GROUNDWATER ANALYTICAL DATA  
SITE ASSESSMENT REPORT ADDENDUM  
BUILDING 502, TANK 502  
NAS CECIL FIELD  
JACKSONVILLE, FLORIDA**

CONSTITUENTS	FDEP GCTL (µg/L)	CEF-502-						
		MW-1SR	MW-3S	MW-4S	MW-6S	MW-7D	MW-8S	MW-8S-DU-01
		11/21/06	11/20/06	11/21/06	11/20/06	11/20/06	11/21/06	11/21/06
<b>VOLATILE ORGANICS (µg/L)</b>								
1,2,4-TRIMETHYLBENZENE	10	6.9	0.5 J	0.6 J	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-TRIMETHYLBENZENE	10	2.8	0.2 U	0.6 J	0.2 U	0.2 U	0.2 U	0.2 U
BENZENE	1	0.2 U	0.2 U	0.3 J	0.2 U	0.2 U	0.2 U	0.2 U
ETHYLBENZENE	30	2.5	0.3 U	2.2	0.3 J	0.3 U	0.3 U	0.3 U
ISOPROPYLBENZENE	0.8	2.7	0.1 U	1.2	0.4 J	0.1 U	0.1 U	0.1 U
TOTAL XYLENES	20	0.3 U	0.3 U	0.9 J	0.3 U	0.3 U	0.3 U	0.3 U
<b>SEMIVOLATILE ORGANICS (µg/L)</b>								
1-METHYLNAPHTHALENE	28	<b>52.8 D</b>	6.46	1.48	1.95	0.02 U	0.02 U	0.02 U
2-METHYLNAPHTHALENE	28	<b>110 D</b>	4.92	8.37	3.75	0.02 U	0.02 U	0.02 U
ACENAPHTHENE	20	1.72	0.39	0.29	1.11	0.02 U	0.02 U	0.02 U
ANTHRACENE	2100	0.07 J	0.02 U					
FLUORENE	280	2.78	0.58	0.22	2.16	0.02 U	0.02 U	0.02 U
NAPHTHALENE	14	11.2	0.92	2.69	0.43	0.02 U	0.02 U	0.02 U
PHENANTHRENE	210	2.4	0.13	0.02 U	0.08 J	0.02 U	0.02 U	0.02 U
<b>TOTAL PETROLEUM HYDROCARBONS (MG/L)</b>								
TPH (C08-C40)	5	2.11	0.166 J	0.496	0.33	0.094 U	0.094 U	0.094 U

Concentration exceeds criterion.

D = Data reported from a dilution.

J = Estimated concentration.

U = Not detected at associated detection limit.

µg/L = Micrograms per liter.

mg/L = Milligrams per liter.



CEF-502-6S	11/20/06	GCTL
1,2,4-TRIMETHYLBENZENE	0.02 U µg/L	10
1,3,5-TRIMETHYLBENZENE	0.02 U µg/L	10
BENZENE	0.02 U µg/L	1
ETHYLBENZENE	0.3 J µg/L	30
ISOPROPYLBENZENE	0.4 J µg/L	0.8
1-METHYLNAPHTHALENE	1.95 µg/L	28
2-METHYLNAPHTHALENE	3.75 µg/L	28
ACENAPHTHENE	1.11 µg/L	20
ANTHRACENE	0.02 U µg/L	2100
FLUORENE	2.16 µg/L	280
NAPHTHALENE	0.43 µg/L	14
PHENANTHRENE	0.08 J µg/L	210
TPH	0.33 mg/L	5

APPROXIMATE SOURCE REMOVAL EXCAVATION AREA

FORMER LOCATION OF 1,000 GALLON UST

CEF-502-7D (ND)

CEF-502-4S	11/21/06	GCTL
1,2,4-TRIMETHYLBENZENE	0.06 J µg/L	10
1,3,5-TRIMETHYLBENZENE	0.06 J µg/L	10
BENZENE	0.06 J µg/L	1
ETHYLBENZENE	2.2 µg/L	30
ISOPROPYLBENZENE	1.2 µg/L *	.08
1-METHYLNAPHTHALENE	1.48 µg/L	28
2-METHYLNAPHTHALENE	8.37 µg/L	28
ACENAPHTHENE	0.29 µg/L	20
ANTHRACENE	0.02 U µg/L	2100
FLUORENE	0.22 µg/L	280
NAPHTHALENE	2.69 µg/L	14
TPH	0.496 mg/L	5

GRASS

CEF-502-8S (ND)

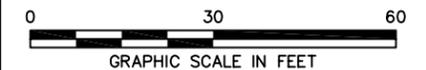
ASPHALT

CEF-502-3S	11/20/06	GCTL
1,2,4-TRIMETHYLBENZENE	0.5 J µg/L	10
1,3,5-TRIMETHYLBENZENE	0.2 U µg/L	10
BENZENE	0.2 U µg/L	1
ISOPROPYLBENZENE	0.1 U µg/L	0.8
1-METHYLNAPHTHALENE	6.46 µg/L	28
2-METHYLNAPHTHALENE	4.92 µg/L	28
ACENAPHTHENE	0.39 µg/L	20
ANTHRACENE	0.02 U µg/L	2100
FLUORENE	0.58 µg/L	280
NAPHTHALENE	0.92 µg/L	14
PHENANTHRENE	0.13 µg/L	210
TPH	0.166 J mg/L	5

CEF-502-1SR	11/21/06	GCTL
1,2,4-TRIMETHYLBENZENE	6.9 µg/L	10
1,3,5-TRIMETHYLBENZENE	2.8 µg/L	10
BENZENE	0.2 U µg/L	1
ETHYLBENZENE	2.5 µg/L	30
ISOPROPYLBENZENE	2.7 µg/L *	0.8
1-METHYLNAPHTHALENE	52.8 D µg/L *	28
2-METHYLNAPHTHALENE	110 D µg/L *	28
ACENAPHTHENE	1.72 µg/L	20
ANTHRACENE	0.07 J µg/L	2100
FLUORENE	2.78 µg/L	280
NAPHTHALENE	11.2 µg/L	14
PHENANTHRENE	2.4 µg/L	210
TPH	2.11 mg/L	5

**LEGEND:**

- ⊕ MONITORING WELL
- mg/L MILLIGRAMS PER LITER
- µg/L MICROGRAMS PER LITER
- J ESTIMATED CONCENTRATION
- U NONE DETECTED
- D DATA REPORTED FROM A DILUTION
- ND NON DETECT
- \* EXCEEDS GCTL
- GCTL GROUNDWATER CLEANUP TARGET LEVEL

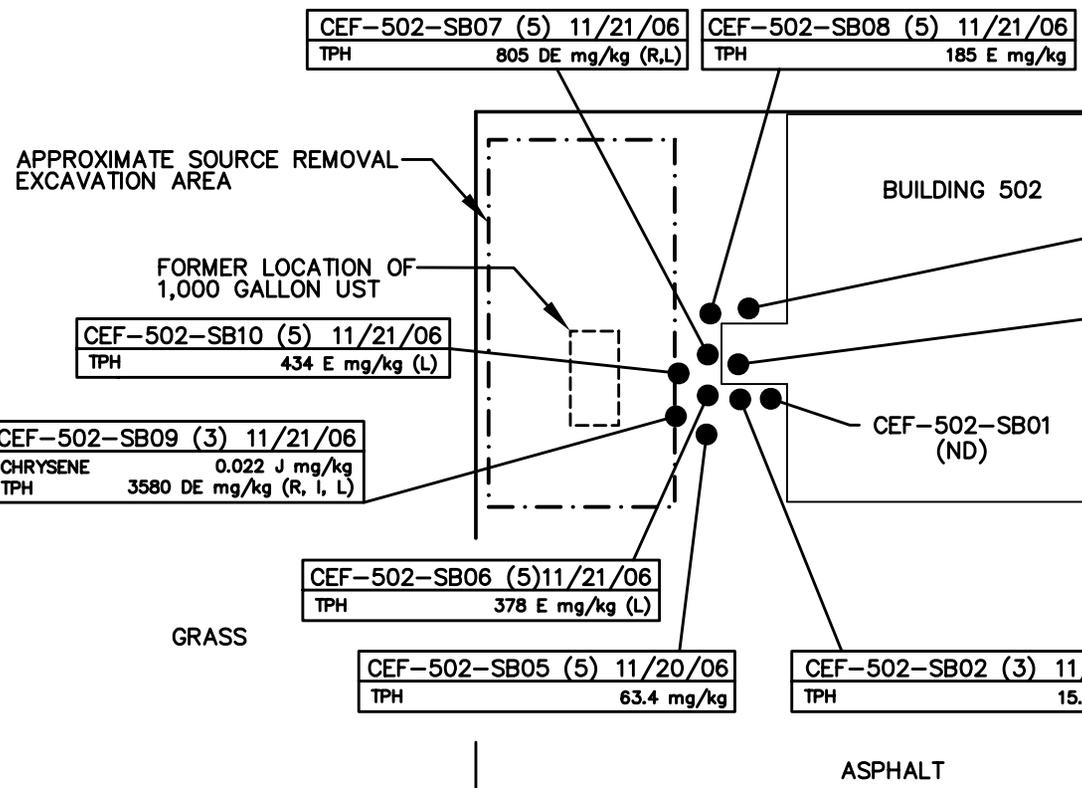


DRAWN BY	DATE
MF	1/3/07
CHECKED BY	DATE
REVISD BY	DATE
SCALE AS NOTED	



**MONITORING WELL RESULTS  
NOVEMBER 2006  
BUILDING 502, TANK 502  
NAS CECIL FIELD  
JACKSONVILLE, FLORIDA**

CONTRACT NO. 4248	
OWNER NO.	
APPROVED BY	DATE
DRAWING NO. FIGURE 4	REV. 0



CEP-502-SB07 (5) 11/21/06 TPH 805 DE mg/kg (R,L)	CEP-502-SB08 (5) 11/21/06 TPH 185 E mg/kg
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CEP-502-SB04 (5) 11/21/06 TPH 70.6 mg/kg
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CEP-502-SB03 (5) 11/21/06 TPH 161 E mg/kg
--

CEP-502-SB10 (5) 11/21/06 TPH 434 E mg/kg (L)
--

CEP-502-SB09 (3) 11/21/06 CHRYSENE 0.022 J mg/kg TPH 3580 DE mg/kg (R, I, L)
--

CEP-502-SB06 (5) 11/21/06 TPH 378 E mg/kg (L)
--

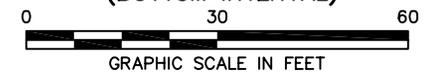
CEP-502-SB05 (5) 11/20/06 TPH 63.4 mg/kg
---

CEP-502-SB02 (3) 11/21/06 TPH 15.3 mg/kg
---

**LEGEND:**

- SOIL SAMPLE LOCATION
- mg/kg MILLIGRAMS PER KILOGRAM
- NA NOT APPLICABLE
- (ND) NOT DETECTED
- J ESTIMATED CONCENTRATION
- D DATA REPORTED FROM A DILUTION
- E RESULT EXCEEDS CALIBRATION LIMIT
- (L) EXCEEDS LEACHABILITY SCTL
- (R) EXCEEDS RESIDENTIAL SCTL
- (I) EXCEEDS INDUSTRIAL SCTL
- (5) DEPTH TO SAMPLE (BOTTOM INTERVAL)

SCTLs mg/kg	(R)	(I)	(L)
CHRYSENE	NA	NA	77
TPH	460	2700	340



DRAWN BY <b>MF</b>	DATE <b>12/29/06</b>
CHECKED BY	DATE
REVISED BY	DATE
SCALE <b>AS NOTED</b>	



**SOIL BORING RESULTS  
NOVEMBER 2006  
BUILDING 502, TANK 502  
NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

CONTRACT NO. <b>4248</b>	
OWNER NO.	
APPROVED BY	DATE
DRAWING NO. <b>FIGURE 3</b>	REV. <b>0</b>



APPROXIMATE SOURCE REMOVAL  
EXCAVATION AREA

FORMER LOCATION OF  
1,000 GALLON UST

CEF-502-6S

CEF-502-7D

CEF-502-4S

GRASS

CEF-503-3S

CEF-502-8S

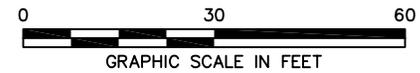
ASPHALT

BUILDING 502

CEF-502-1SR

**LEGEND:**

- ⊕ SHALLOW MONITORING WELL LOCATION
- DEEP MONITORING WELL LOCATION



<b>DRAWN BY</b> MF	<b>DATE</b> 1/31/07
<b>CHECKED BY</b>	<b>DATE</b>
<b>REVISED BY</b>	<b>DATE</b>
<b>SCALE</b> AS NOTED	



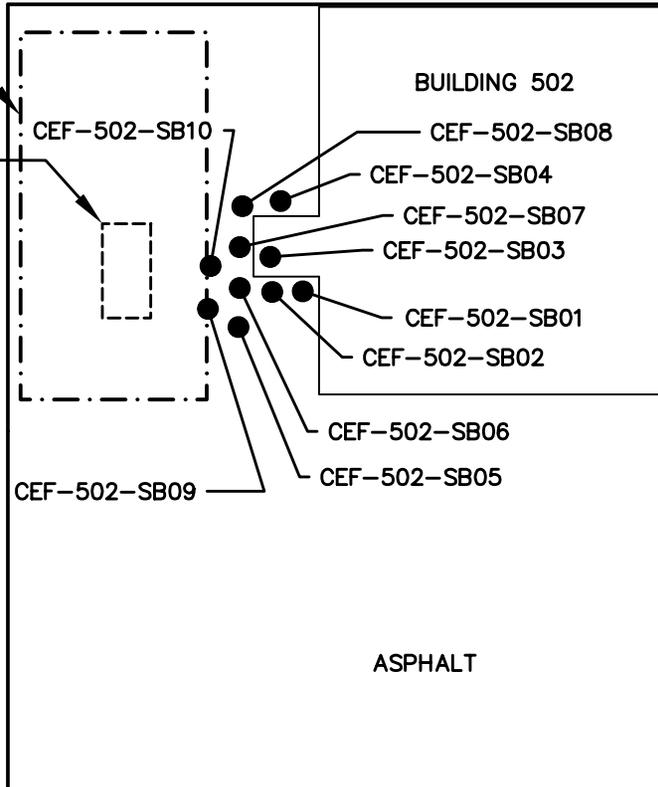
**GROUNDWATER MONITORING WELL LOCATIONS**  
**BUILDING 502**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

<b>CONTRACT NO.</b> 4248	
<b>OWNER NO.</b>	
<b>APPROVED BY</b>	<b>DATE</b>
<b>DRAWING NO.</b> FIGURE 2	<b>REV.</b> 0



APPROXIMATE SOURCE REMOVAL  
EXCAVATION AREA

FORMER LOCATION OF  
1,000 GALLON UST



**LEGEND:**

● SOIL SAMPLE LOCATION

0 30 60

GRAPHIC SCALE IN FEET

<b>DRAWN BY</b> MF	<b>DATE</b> 1/31/07
<b>CHECKED BY</b>	<b>DATE</b>
<b>REVISED BY</b>	<b>DATE</b>
<b>SCALE</b> AS NOTED	



**SOIL BORING LOCATIONS  
BUILDING 502, TANK 502  
NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

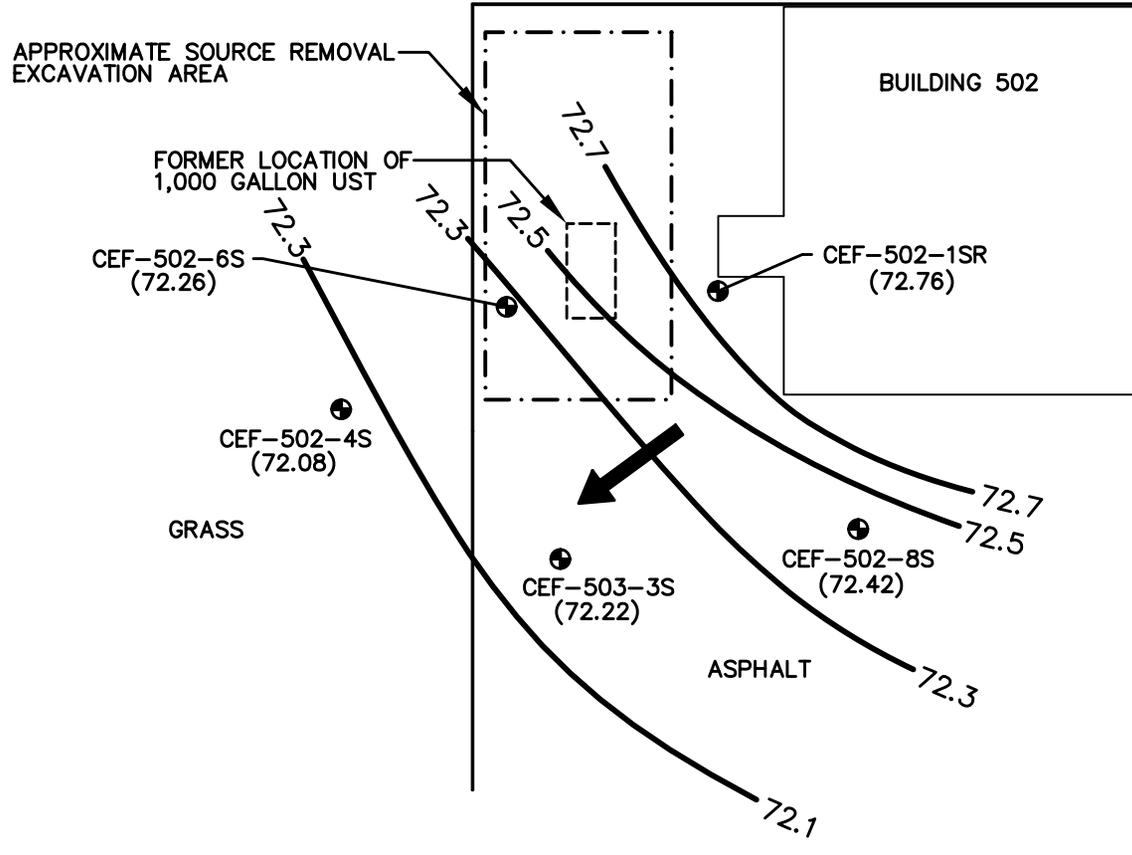
**CONTRACT NO.**  
4248

**OWNER NO.**

**APPROVED BY** \_\_\_\_\_ **DATE** \_\_\_\_\_

**DRAWING NO.**  
**FIGURE 1**

**REV.**  
**0**



**LEGEND:**

- SHALLOW MONITORING WELL
- (72.76) WATER TABLE ELEVATION (FT ABOVE SL)
- 72.5 POTENTIOMETRIC SURFACE ELEVATION (FT ABOVE SL)
- GROUNDWATER CONTOUR
- MSL MEAN SEA LEVEL
- INFERRED DIRECTION OF GROUNDWATER FLOW

0 30 60  
GRAPHIC SCALE IN FEET

DRAWN BY <b>MF</b>	DATE <b>1/5/07</b>
CHECKED BY	DATE
REVISED BY	DATE
SCALE <b>AS NOTED</b>	



**POTENTIOMETRIC SURFACE ELEVATION MAP**  
**NOVEMBER 2006**  
**BUILDING 502, TANK 502**  
**NAS CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

CONTRACT NO. <b>4248</b>	
OWNER NO.	
APPROVED BY	DATE
DRAWING NO. <b>FIGURE 5</b>	REV. <b>0</b>

**ATTACHMENT A**  
**FDEP 2004 COMMENTS**



Jeb Bush  
Governor

# Department of Environmental Protection

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

Colleen M. Castille  
Secretary

June 23, 2004

Mr. Gabe Magwood  
Code ES24 (UST RPM)  
Southern Division  
Naval Facilities Engineering Command  
Post Office Box 190010  
North Charleston, South Carolina 29419-9010

RE: Groundwater Monitoring Report, 1<sup>st</sup> Semi-Annual, 4<sup>th</sup> Year (June 2003), Building 502, Tank 502, Naval Air Station Cecil Field, Jacksonville, Florida

Dear Mr. Magwood:

I have completed the review of the Groundwater Monitoring Report, 1<sup>st</sup> Semi-Annual, 4<sup>th</sup> Year (June 2003), Building 502, Tank 502, Naval Air Station Cecil Field, dated January 30, 2004 (received February 2, 2004), prepared and submitted by Tetra Tech NUS, Inc. The report adequately reports the groundwater contaminant levels in monitoring wells approved in the Natural Attenuation Monitoring Plan Approval Order (NAMP Order) issued by the Department on July 13, 1999 and as modified by subsequent reports. Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene and TRPH continue to remain elevated in monitoring well CEF-502-1SR. I would like to point out that the monitoring period approved in the NAMP Order expires in July 2004. Because of this, the data collected up to the point the NAMP Order expires should be evaluated to determine whether the milestones specified in the NAMP Order have been met and the site can be considered rehabilitated or whether further assessment, further monitoring or more active remediation is required at the site. A report should be prepared and submitted with conclusions on the effectiveness of monitored natural attenuation and recommendations for further work.

I have done some speculating on why contaminant concentrations in groundwater have not been reduced more than they have. Based on a limited review of past reports, it seems possible there may be contaminated soil still present that is impacting groundwater in the vicinity of monitoring well CEF-502-1SR. This contamination may not have been previously identified because of its location beneath Building 502. As this building has apparently been demolished, further investigation of soil contamination in this area may be possible at this time.

Mr. Gabe Magwood  
June 23, 2004  
Page Two (2)

---

If I can be of any further assistance with this matter,  
please contact me at (850) 245-8997.

Sincerely,

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

cc: Paul Calligan, Tetra Tech NUS, Tampa  
Doyle Brittain, USEPA Region 4  
Mike Fitzsimmons, FDEP Northeast District

JJC  <sup>for</sup> ESN 

**ATTACHMENT B**

**FDEP MONITORING ONLY PLAN ORDER**



# Department of Environmental Protection

Jeb Bush  
Governor

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

David B. Struhs  
Secretary

July 13, 1999

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Commanding Officer  
Mr. Bryan Kizer, Code 1842  
SOUTHNAVFACENGCOM  
Post Office Box 190010  
North Charleston, SC 29419-9010

RE: Site Assessment Report and Monitoring Only Proposal for  
Facility 502, Tank 502, Naval Air Station Cecil Field,  
Florida.

Dear Mr. Kizer:

I have reviewed the Site Assessment Report Revision and Monitoring Only Proposal for Natural Attenuation dated April 1999 (received April 23, 1999), submitted for this site. Based upon my review and comments, the enclosed Monitoring Only Plan for Natural Attenuation was signed by Mr. John M. Ruddell, Director of the Division of Waste Management.

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

Sincerely,

Michael J. Deliz, P.G.  
Remedial Project Manager

13-JULY-99  
Date

CC: Debbie Vaughn-Wright, USEPA  
John Flowe, City of Jacksonville  
Scott Glass, SOUTHNAVFACENGCOM  
Dave Kruzicki, NAS Cecil Field  
Eric Blomberg, HLA - Tallahassee

TJB B JJC B RESN B EJV

"Protect, Conserve and Manage Florida's Environment and Natural Resources"



Jeb Bush  
Governor

# Department of Environmental Protection

Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400  
July 13, 1999

David B. Struhs  
Secretary

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

Commanding Officer  
Mr. Bryan Kizer, Code 1842  
SOUTHNAVFACENCOM  
Post Office Box-190010  
North Charleston, South Carolina 29419-0068

Subject: Monitoring Only Plan Approval  
Order Facility 502, Tank 502,  
Naval Air Station, Cecil Field

Dear Mr. Kizer:

The Bureau of Waste Cleanup has completed the review of the Site Assessment Report and Monitoring Only Proposal for Natural Attenuation dated April 1999 (received April 23, 1999), submitted for this site. Pursuant to Rule 62-770.690, Florida Administrative Code (F.A.C.), the Department approves the monitoring only proposal. Pursuant to Rule 62-770.690(7), F.A.C., you are required to complete the monitoring program outlined below. The first sampling event should be performed within 60 days of receipt of this Monitoring Only Plan Approval Order (Order). Water-level measurements should be made immediately prior to each sampling event. The analytical results (laboratory report), chain of custody, cumulative summary table of the analytical results, site map(s) illustrating the most recent analytical results, and the water-level elevation information (cumulative summary table and most recent flow interpretation map), should be submitted to the Department within 60 days of sample collection.

<u>Monitoring Wells</u>	<u>Parameters</u>	<u>Frequency</u>
CEF-502-1S, CEF-502-2S, CEF-502-4S, and CEF-502 5D	602, 8310, and FL-PRO	Semi-annual

*"Protect, Conserve and Manage Florida's Environment and Natural Resources"*

Mr. Bryan Kizer

Page Two

July 13, 1999

If concentrations of chemicals of concern in any of the designated wells increase above the action levels listed below, the well or wells must be resampled no later than 30 days after the initial positive results are known. If the results of the resampling confirm the initial sampling results, then a proposal must be submitted, as described in Rule 62-70.690(7)(f), F.A.C.

Contaminated wells:

CEF-502-1S and CEF-502-2S: 100 µg/l Benzene; 200 µg/l Xylene; 300 µg/l Ethylbenzene; 400 µg/l Toluene; 200 µg/l Naphthalene; and 50 mg/l TRPH.

Perimeter wells:

CEF-502-4S and CEF-502-5D: 1 µg/l Benzene; 20 µg/l Xylene; 30 µg/l Ethylbenzene; 40 µg/l Toluene; 20 µg/l Naphthalene; and 5 mg/l TRPH

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

<u>Benzene</u>	<u>MW-CEF- 502-2S</u>
End of year 1	26
End of year 2	13
End of year 3	6
End of year 4	3
End of year 5	<1

<u>Ethylbenzene</u>	<u>MW-CEF- 502-2S</u>
End of year 1	60
End of year 2	50
End of year 3	40
End of year 4	30
End of year 5	<30

Mr. Bryan Kizer  
Page Three  
July 13, 1999

<u>Xylene</u>	<u>MW-CEF-</u> <u>502-2S</u>
End of year 1	150
End of year 2	100
End of year 3	50
End of year 4	20
End of year 5	<20

<u>Naphthalene</u>	<u>MW-CEF-</u> <u>502-2S</u>
End of year 1	150
End of year 2	100
End of year 3	50
End of year 4	20
End of year 5	<20

<u>TRPH</u>	<u>MW-CEF-</u> <u>502-2S</u>
End of year 1	10
End of year 2	8
End of year 3	6
End of year 4	5
End of year 5	<5

If the applicable No Further Action criteria in Rule 62-70.680, F.A.C., are achieved at the end of the monitoring period, a Site Rehabilitation Completion Report, summarizing the monitoring program and containing documentation supporting the opinion that the cleanup objectives have been achieved, should be submitted as required in Rule 62-770.690(8), F.A.C. If the applicable No Further Action criteria in Rule 62-770.680, F.A.C., are not achieved following one year of monitoring, then a report summarizing the monitoring program should be submitted, including a proposal as described in Rule 62-770.690(7)(g).

Persons affected by this Order have the following options:

If you choose to accept the above decision by the Department you do not have to do anything. This Order is final and effective as of the date on the top of the first page of this Order.

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

Mr. Bryan Kizer

Page Four

July 13, 1999

1. File a petition for administrative hearing with the Office of the General Counsel of the Department within 21 days after receipt of this Order;

OR

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

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

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

A request for an extension of time to file a petition for hearing must be filed (received) in the Office of the General Counsel of the Department at 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000, within 21 days after receipt of this Order. Pursuant to Rule 28-106.111(3), F.A.C., a request for extension of time shall contain a certificate that the moving party has consulted with all other parties, if any, concerning the extension and that the Department and any other parties agree to said extension. Petitioner, if different from Commanding Officer, Naval Air Station Cecil Field, shall mail a copy of the petition to from Commanding Officer, Naval Air Station Cecil Field at the time of filing. Timely filing a request for an extension of time tolls the time period within which a petition for administrative hearing must be filed until the request is acted upon.

#### How to File a Petition for Administrative Hearing

A person whose substantial interests are affected by this Order may petition for administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) in the Office of the General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, within 21 days after receipt of this Order. Petitioner, if different from Commanding Officer, Naval Air Station Cecil Field, shall mail a copy of the petition to from

Mr. Bryan Kizer  
Page Five  
July 13, 1999

Commanding Officer, Naval Air Station Cecil Field at the time of filing. Failure to file a petition within this time period shall waive the right of anyone who may request an administrative hearing under Sections 120.569 and 120.57, F.S.

Pursuant to Rules 62-103.155 and 28-06.201, F.A.C., a petition for administrative hearing shall contain the following information:

- a) The name, address, and telephone number of each petitioner, the name, address, and telephone number of the petitioner's representative, if any, the site owner's name and address, if different from the petitioner, the FDEP facility number, and the name and address of the facility;
- b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- d) A statement of the material facts disputed by the petitioner, if any;
- e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- f) A statement of which rules or statutes petitioner contends requires reversal or modification of the Department's action or proposed action; and
- g) A statement of the relief petitioner seeks, stating precisely what petitioner wants the Department to do regarding the Department's action or proposed action.

This Order is final and effective as of the date on the top of the first page of this Order. Timely filing a petition for administrative hearing postpones the date this Order takes effect until the Department issues either a Final Order pursuant to an administrative hearing or an Order Responding to Supplemental Information provided pursuant to meetings with the Department.  
Judicial Review

Any party to this Order has the right to seek judicial review of this Order pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Department clerk in the Office of

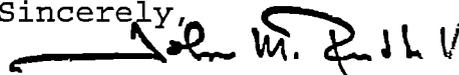
Mr. Bryan Kizer  
Page Six  
July 13, 1999

the General Counsel, 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000. Simultaneously with filing a Notice of Appeal with the Department, petitioner must file a copy of the Notice of Appeal with the applicable filing fees, with the appropriate District Court of Appeal. The Notice of Appeal must be received by the Department clerk within 30 days from the date this Order was signed by the Department clerk (see below).

Questions

Should you have any questions regarding the legal processes, please contact the Office of the General Counsel at (850) 488-9730. Any questions you may have on the technical aspects of this Order should be directed to Michael J. Deliz, P.G. at (850) 921-9991. Contact with any of the above does not constitute a petition for administrative hearing.

Sincerely,



John M. Ruddell, Director  
Division of Waste Management

JMR/mjd

FILING AND ACKNOWLEDGMENT

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

Minnie L. Robinson      7/15/99  
Clerk (or Deputy Clerk)      Date

**ATTACHMENT C**  
**FIELD FORMS**































Project Site Name: Bldg 502 - CTO 025  
 Project No.: 112 G 00379

Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: \_\_\_\_\_  
 QA Sample Type: \_\_\_\_\_

Sample ID No.: CEF-502-85-0  
 Sample Location: MW-85  
 Sampled By: KW  
 C.O.C. No.: 8426  
 Type of Sample:  
 Low Concentration  
 High Concentration

SAMPLING DATA:

Date:	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
<u>1/26/06</u>	<u>clear</u>	<u>5.10</u>	<u>350</u>	<u>26.09</u>	<u>9.1</u>	<u>0.61</u>	<u>X</u>	
Time: <u>0933</u>								
Method: <u>peristaltic</u>								

PURGE DATA:

Date: 1/21/06  
 Method: peristaltic  
 Monitor Reading (ppm): NA  
 Well Casing Diameter & Material  
 Type: 2 in - PVC  
 Total Well Depth (TD): 13.49  
 Static Water Level (WL): 9.56  
 One Casing Volume (gal/L): 0.6288 gal  
 Start Purge (hrs): 0848  
 End Purge (hrs): 0933  
 Total Purge Time (min): 45  
 Total Vol. Purged (gal/L): 7.13 L 13.50 L

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
<u>FI Pca</u>	<u>H2SO4</u>	<u>(2) 1 L AMBER</u>	<u>KW</u>
<u>SW 846 8310</u>	<u>H2SO4</u>	<u>1 L AMBER</u>	<u>L</u>
<u>SW 846 8200 B</u>	<u>HCT</u>	<u>± 3-40 ml</u>	<u>L</u>

OBSERVATIONS / NOTES:

Circle if Applicable: MS/MSD Duplicate ID No.: GW-CEF-502-BW-Dup-01

Signature(s): Kara J. Wundt

Dup-01





Project Site Name: Bldg 502 - CFO OAS Sample ID No.: CEP-502-7D-01  
 Project No.: 12600378 Sample Location: MW 7D  
 Sampled By: KW  
 C.O.C. No.: 2486  
 Domestic Well Data  
 Monitoring Well Data  
 Other Well Type: \_\_\_\_\_  
 QA Sample Type: \_\_\_\_\_  
 Low Concentration  
 High Concentration

**SAMPLING DATA:**

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	
<u>11/20/06</u>	<u>clear</u>	<u>5.71</u>	<u>229</u>	<u>24.15</u>	<u>5.4</u>	<u>0.15</u>	<input checked="" type="checkbox"/>	
Time: <u>1544</u>								
Method: <u>grab</u>								

**PURGE DATA:**

Date: 11/20/06  
 Method: peristaltic  
 Monitor Reading (ppm): N/A  
 Well Casing Diameter & Material  
 Type: 2 in PVC  
 Total Well Depth (TD): 30.11  
 Static Water Level (WL): 9.59  
 One Casing Volume (gal/L): 3.1  
 Start Purge (hrs): 1335  
 End Purge (hrs): 1541  
 Total Purge Time (min): 67  
 Total Vol. Purged (gal/L): 23.48L

**SAMPLE COLLECTION INFORMATION:**

Analysis	Preservative	Container Requirements	Collected
<u>SW846-8310</u>	<u>None</u>	<u>1L Amber (1)</u>	<u>KW</u>
<u>SW846-8260B</u>	<u>H2SO4</u>	<u>3-40ml</u>	<u>KW</u>
<u>FL-PRO</u>	<u>H2SO4</u>	<u>1L Amber (2)</u>	<u>KW</u>

**OBSERVATIONS / NOTES:**

Circle if Applicable:

MS/MSD	Duplicate ID No.:	Signature(s): <u>Kare J. Winkler</u>
--------	-------------------	---





Project Site Name: Bldg 502-CT0025  
Project No.: 112600378

Sample ID No.: CEP-502-35-01

Sample Location: MW-35

Sampled By: KW

C.O.C. No.: 2486

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: \_\_\_\_\_
- QA Sample Type: \_\_\_\_\_

- Type of Sample:
- Low Concentration
- High Concentration

**SAMPLING DATA:**

Date: <u>11/20/06</u>	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
Time: <u>1640</u>	<u>clear</u>	<u>5.63</u>	<u>186</u>	<u>26.36</u>	<u>12</u>	<u>0.41</u>	<u>X</u>	
Method: <u>grab</u>								

**PURGE DATA:**

Date: <u>11/20/06</u>	
Method: <u>peristaltic</u>	
Monitor Reading (ppm): <u>NA</u>	
Well Casing Diameter & Material Type: <u>2 in PVC</u>	
Total Well Depth (TD): <u>13.18</u>	
Static Water Level (WL): <u>8.46</u>	
One Casing Volume(gal/L): <u>0.755 gal</u>	
Start Purge (hrs): <u>1540</u>	
End Purge (hrs): <u>1640 KW</u>	
Total Purge Time (min):	
Total Vol. Purged (gal/L): <u>5 gal</u>	

**SAMPLE COLLECTION INFORMATION:**

Analysis	Preservative	Container Requirements	Collected
<u>SW 846 8310</u>	<u>None</u>	<u>2 1 L - Amber (1)</u>	<u>KW</u>
<u>SW 846 8260 B</u>	<u>HCl</u>	<u>3-40 ml</u>	<u>KW</u>
<u>FL-PR0</u>	<u>None</u>	<u>1 L - Amber (2)</u>	<u>KW</u>

**OBSERVATIONS / NOTES:**

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

*Kare J. Wenzel*





Project Site Name:  
Project No.:

Bldg 502-CTO 025  
KW 4200 112600378

Sample ID No.: CEF-502-65-4

Sample Location:

Sampled By: KW

C.O.C. No.: 1286

Type of Sample:

- Low Concentration
- High Concentration

- Domestic Well Data
- Monitoring Well Data
- Other Well Type:
- QA Sample Type:

SAMPLING DATA:

Date: 11/20/06	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (‰)	Other
Time: 1500	clear	6.24	318	25.77	3.4	0.38	X	
Method: peristaltic								

PURGE DATA:

Date: 11/20/06
Method: peristaltic
Monitor Reading (ppm): NA
Well Casing Diameter & Material Type: 2-inch PVC
Total Well Depth (TD): 15
Static Water Level (WL): 9.44
One Casing Volume(gal/L):
Start Purge (hrs): 1335
End Purge (hrs): 1500
Total Purge Time (min): 965
Total Vol. Purged (gal/L): 5gal

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
SW 846 8310	H <sub>2</sub> SO <sub>4</sub>	1 Lamber	KW
SW 846 8260B	HCl	3-40 vial	✓
PI 800	None	1 Lamber	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
--------	-------------------

Signature(s): *Kara J. Winkler*





# GROUNDWATER SAMPLE LOG SHEET

Project Site Name: CTO 025 - Bldg 502  
Project No.: 112600378

Sample ID No.: CFE-502-1SR01  
Sample Location: MW-1SR

- Domestic Well Data
- Monitoring Well Data
- Other Well Type: \_\_\_\_\_
- QA Sample Type: \_\_\_\_\_

Sampled By: KW  
C.O.C. No.: \_\_\_\_\_  
Type of Sample:  
 Low Concentration  
 High Concentration

### SAMPLING DATA:

Date:	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (‰)	Other
<u>11/21/06</u>	<u>clear</u>	<u>5.11</u>	<u>374</u>	<u>24.24</u>	<u>17</u>	<u>0.24</u>	<u>X</u>	
Time: <u>1042</u>								
Method: <u>peristaltic</u>								

### PURGE DATA:

Date: <u>11/21/06</u>	
Method: <u>peristaltic</u>	
Monitor Reading (ppm): <u>NA</u>	
Well Casing Diameter & Material Type: <u>2 in PVC</u>	
Total Well Depth (TD): <u>12.40</u>	
Static Water Level (WL): <u>9.46</u>	
One Casing Volume (gal/L): <u>0.410 gal</u>	
Start Purge (hrs): <u>0848</u>	
End Purge (hrs): <u>1050</u>	
Total Purge Time (min): <u>120</u>	
Total Vol. Purged (gal/L): <u>5 gal</u>	

### SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
<u>Fluoro</u>	<u>H2SO4</u>	<u>1 L Amber (2)</u>	<u>KW</u>
<u>SW 846-8310</u>	<u>None</u>	<u>1 L Amber (1)</u>	<u>↓</u>
<u>SW 846-8360B</u>	<u>HCl</u>	<u>3-40 ml</u>	<u>↓</u>

### OBSERVATIONS / NOTES:

Circle if Applicable:		Signature(s): <u>Kare J. Winkler</u>
MS/MSD	Duplicate ID No.:	





PROJECT NO: 10600378		FACILITY: Bldg 502		PROJECT MANAGER Dave Sietken		PHONE NUMBER 904-626-425		LABORATORY NAME AND CONTACT: LNC O							
SAMPLERS (SIGNATURE) Kara Fairbridge [Signature]				FIELD OPERATIONS LEADER Kara Cottonair		PHONE NUMBER 904-636-6125		ADDRESS							
				CARRIER/WAYBILL NUMBER hand-delivered				CITY, STATE Jacksonville, FL							
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day				CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS SW 846-8210 FL-PRO FL-17RO SW 846-8201B HCL G							
DATE YEAR 2006		LOCATION ID		TOP DEPTH (FT)		BOTTOM DEPTH (FT)						MATRIX (GW, SO, SW, SD, QC, ETC.)		COLLECTION METHOD GRAB (G) COMP (C)	
TIME		SAMPLE ID										COMMENTS			
1055		DEF-502-5202-05						SO G		1					
1045		DEF-502-5204-05						SO G		1					
1055		DEF-502-5206-05						SO G		1					
0840		DEF-502-5202-03						SO G		1					
1513		DEF-502-FR01						GW G		6		2 3			
1145		DEF-502-4S-01						GW G		4		1 2 low recharge			
1. RELINQUISHED BY [Signature]				DATE 11-21-06		TIME 1620		1. RECEIVED BY [Signature]				DATE 11/21/06		TIME 1620	
2. RELINQUISHED BY				DATE		TIME		2. RECEIVED BY				DATE		TIME	
3. RELINQUISHED BY				DATE		TIME		3. RECEIVED BY				DATE		TIME	
COMMENTS															



PROJECT NO: 112G00378		FACILITY: Building 502		PROJECT MANAGER Dave Sietken		PHONE NUMBER 904-636-6125		LABORATORY NAME AND CONTACT: ENCO			
SAMPLERS (SIGNATURE) Kara J Wimble		FIELD OPERATIONS LEADER Terry Cottencor		PHONE NUMBER 904-636-6125		ADDRESS					
CARRIER/WAYBILL NUMBER Hand-delivered		CITY, STATE Jacksonville, FL									
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/> <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day		CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS SW-846-8310 Ni/Cr G SW-846-8260B HCL G FL-PRO H <sub>2</sub> SO <sub>4</sub> Ni/Cr G FL-PCA					
DATE YEAR 2006		TOP DEPTH (FT)		BOTTOM DEPTH (FT)						MATRIX (GW, SO, SW, SD, QC, ETC.)	
TIME		SAMPLE ID		LOCATION ID		COMMENTS					
11/20 1500		CEF-502-6S-01				GW G 6		1 3 2			
11/20 1544		CEF-502-6TD-01				GW G 6		1 3 2			
11/20 1640		CEF-502-3S-01				GW G 6		1 3 2			
11/20 1600		CEF-502-SB05-0S				SO G 1		1 1		1	
11/20 1550		CEF-502-SB01-0S				SO G 1		1 1		1	
11/21 0935		CEF-502-8S-01				GW G 6		1 3 2			
11/21 0955		CEF-502-GW-DUP-01				GW G 6		1 3 2			
11/21 1045		CEF-502-ISR-01				GW G 6		1 3 2			
11/21 1255		CEF-502-SB07-0S				SO G 1		1 1		1	
11/21 1305		CEF-502-SB08-0S				SO G 1		1 1		1	
11/21 1244		CEF-502-8207-03				SO G 1		1 1		1	
11/21 1214		CEF-502-8207-05				SO G 1		1 1		1	
11/21 0000		CEF-502-8207-01				SO G 1		1 1		1	
1. RELINQUISHED BY [Signature]		DATE 11-21-06		TIME 1620		1. RECEIVED BY [Signature]		DATE 11/21/06		TIME 1620	
2. RELINQUISHED BY		DATE		TIME		2. RECEIVED BY		DATE		TIME	
3. RELINQUISHED BY		DATE		TIME		3. RECEIVED BY		DATE		TIME	
COMMENTS											

**ATTACHMENT D**  
**SOIL LABORATORY ANALYTICAL DATA**

**Environmental Conservation Laboratories, Inc.**

4810 Executive Park Court, Suite 211

Jacksonville FL, 32216-6069

Phone: 904.296.3007 FAX: 904.296.6210



www.encolabs.com

Thursday, December 7, 2006

Tetra Tech NUS (BR006)

Attn: Mr. Dave Siefken

8640 Philips Highway Suite 16

Jacksonville, FL 32256

**RE: Project Number: 112G00378 Building 502, Project Name/Desc: NAS Cecil Field CTO #0025  
ENCO Workorder: B610165**

Dear Mr. Dave Siefken,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, November 21, 2006.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

This data has been produced in accordance with NELAC standards (June, 2003). This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads 'Christina M. Tompkins'.

Chris Tompkins

Project Manager

Enclosure(s)



www.encolabs.com

**SAMPLE SUMMARY/LABORATORY CHRONICLE**

**Client ID:** CEF-502-SB05-05

**Lab ID:** B610165-01

**Sampled:** 11/20/06 16:00

**Received:** 11/21/06 16:20

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<b>Parameter</b>	<b>Hold Date/Time(s)</b>		<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8270C	12/04/06	01/07/07	11/28/06 08:59	12/4/2006 17:52
FLPRO	12/04/06	01/07/07	11/28/06 09:01	11/29/2006 14:47

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**Client ID:** CEF-502-SB01-05

**Lab ID:** B610165-02

**Sampled:** 11/20/06 15:50

**Received:** 11/21/06 16:20

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<b>Parameter</b>	<b>Hold Date/Time(s)</b>		<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8270C	12/04/06	01/07/07	11/28/06 08:59	12/4/2006 18:10
FLPRO	12/04/06	01/07/07	11/28/06 09:01	11/29/2006 15:09

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**Client ID:** CEF-502-SB07-05

**Lab ID:** B610165-03

**Sampled:** 11/21/06 12:55

**Received:** 11/21/06 16:20

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<b>Parameter</b>	<b>Hold Date/Time(s)</b>		<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8270C	12/05/06	01/07/07	11/28/06 08:59	12/4/2006 18:28
FLPRO	12/05/06	01/07/07	11/28/06 09:01	11/29/2006 16:39

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**Client ID:** CEF-502-SB08-05

**Lab ID:** B610165-04

**Sampled:** 11/21/06 13:05

**Received:** 11/21/06 16:20

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<b>Parameter</b>	<b>Hold Date/Time(s)</b>		<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8270C	12/05/06	01/07/07	11/28/06 08:59	12/4/2006 18:45
FLPRO	12/05/06	01/07/07	11/28/06 09:01	11/29/2006 15:32

---

**Client ID:** CEF-502-SB09-03

**Lab ID:** B610165-05

**Sampled:** 11/21/06 13:44

**Received:** 11/21/06 16:20

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<b>Parameter</b>	<b>Hold Date/Time(s)</b>		<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8270C	12/05/06	01/07/07	11/28/06 08:59	12/4/2006 19:03
FLPRO	12/05/06	01/07/07	11/28/06 09:01	11/29/2006 18:07

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**Client ID:** CEF-502-SB10-05

**Lab ID:** B610165-06

**Sampled:** 11/21/06 14:03

**Received:** 11/21/06 16:20

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Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8270C	12/05/06	01/07/07	11/28/06 08:59	12/4/2006 19:20
FLPRO	12/05/06	01/07/07	11/28/06 09:01	11/29/2006 15:54

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**Client ID:** CEF-502-SB-DU-01

**Lab ID:** B610165-07

**Sampled:** 11/21/06 00:00

**Received:** 11/21/06 16:20

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Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8270C	12/05/06	01/07/07	11/28/06 08:59	12/4/2006 19:38
FLPRO	12/05/06	01/07/07	11/28/06 09:01	11/30/2006 11:16

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**Client ID:** CEF-502-SB03-05

**Lab ID:** B610165-08

**Sampled:** 11/21/06 08:55

**Received:** 11/21/06 16:20

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Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8270C	12/05/06	01/07/07	11/28/06 08:59	12/4/2006 19:55
FLPRO	12/05/06	01/07/07	11/28/06 09:01	11/30/2006 11:39

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**Client ID:** CEF-502-SB04-05

**Lab ID:** B610165-09

**Sampled:** 11/21/06 10:45

**Received:** 11/21/06 16:20

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Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8270C	12/05/06	01/07/07	11/28/06 08:59	12/4/2006 20:13
FLPRO	12/05/06	01/07/07	11/28/06 09:01	11/30/2006 13:31

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**Client ID:** CEF-502-SB06-05

**Lab ID:** B610165-10

**Sampled:** 11/21/06 10:55

**Received:** 11/21/06 16:20

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Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8270C	12/05/06	01/07/07	11/28/06 08:59	12/4/2006 20:30
FLPRO	12/05/06	01/07/07	11/28/06 09:01	11/30/2006 10:32

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**Client ID:** CEF-502-SB02-03

**Lab ID:** B610165-11

**Sampled:** 11/21/06 08:40

**Received:** 11/21/06 16:20

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<b>Parameter</b>	<b>Hold Date/Time(s)</b>		<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8270C	12/05/06	01/07/07	11/28/06 08:59	12/4/2006 20:48
FLPRO	12/05/06	01/07/07	11/28/06 09:01	11/30/2006 10:10

---

**SAMPLE DETECTION SUMMARY**

<b>Client ID:</b> CEF-502-SB05-05	<b>Lab ID:</b> B610165-01			
<b>Analyte</b>	<b>Results/Qual</b>	<b>MRL</b>	<b>Units</b>	<b>Method</b>
TPH (C8-C40)	63.4	7.53	mg/kg dry	FLPRO
<b>Client ID:</b> CEF-502-SB07-05	<b>Lab ID:</b> B610165-03			
<b>Analyte</b>	<b>Results/Qual</b>	<b>MRL</b>	<b>Units</b>	<b>Method</b>
TPH (C8-C40)	804 D	36.4	mg/kg dry	FLPRO
<b>Client ID:</b> CEF-502-SB08-05	<b>Lab ID:</b> B610165-04			
<b>Analyte</b>	<b>Results/Qual</b>	<b>MRL</b>	<b>Units</b>	<b>Method</b>
TPH (C8-C40)	185	7.95	mg/kg dry	FLPRO
<b>Client ID:</b> CEF-502-SB09-03	<b>Lab ID:</b> B610165-05			
<b>Analyte</b>	<b>Results/Qual</b>	<b>MRL</b>	<b>Units</b>	<b>Method</b>
Chrysene	0.0220 J	0.0362	mg/kg dry	EPA 8270C
TPH (C8-C40)	3580 D	145	mg/kg dry	FLPRO
<b>Client ID:</b> CEF-502-SB10-05	<b>Lab ID:</b> B610165-06			
<b>Analyte</b>	<b>Results/Qual</b>	<b>MRL</b>	<b>Units</b>	<b>Method</b>
TPH (C8-C40)	434	7.88	mg/kg dry	FLPRO
<b>Client ID:</b> CEF-502-SB-DU-01	<b>Lab ID:</b> B610165-07			
<b>Analyte</b>	<b>Results/Qual</b>	<b>MRL</b>	<b>Units</b>	<b>Method</b>
TPH (C8-C40)	299	7.06	mg/kg dry	FLPRO
<b>Client ID:</b> CEF-502-SB03-05	<b>Lab ID:</b> B610165-08			
<b>Analyte</b>	<b>Results/Qual</b>	<b>MRL</b>	<b>Units</b>	<b>Method</b>
TPH (C8-C40)	70.6	8.31	mg/kg dry	FLPRO
<b>Client ID:</b> CEF-502-SB04-05	<b>Lab ID:</b> B610165-09			
<b>Analyte</b>	<b>Results/Qual</b>	<b>MRL</b>	<b>Units</b>	<b>Method</b>
TPH (C8-C40)	161	7.32	mg/kg dry	FLPRO
<b>Client ID:</b> CEF-502-SB06-05	<b>Lab ID:</b> B610165-10			
<b>Analyte</b>	<b>Results/Qual</b>	<b>MRL</b>	<b>Units</b>	<b>Method</b>
TPH (C8-C40)	378	7.07	mg/kg dry	FLPRO
<b>Client ID:</b> CEF-502-SB02-03	<b>Lab ID:</b> B610165-11			
<b>Analyte</b>	<b>Results/Qual</b>	<b>MRL</b>	<b>Units</b>	<b>Method</b>
TPH (C8-C40)	15.3	7.16	mg/kg dry	FLPRO

**ANALYTICAL REPORT**

Sample ID: CEF-502-SB05-05  
 Lab #: B610165-01  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 87.69

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0121 U	0.0121	0.0376	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0113 U	0.0113	0.0376	mg/kg dry
Acenaphthene	83-32-9	0.00828 U	0.00828	0.0376	mg/kg dry
Acenaphthylene	208-96-8	0.0121 U	0.0121	0.0376	mg/kg dry
Anthracene	120-12-7	0.00787 U	0.00787	0.0376	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00787 U	0.00787	0.0376	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00787 U	0.00787	0.0376	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00608 U	0.00608	0.0376	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0116 U	0.0116	0.0376	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00787 U	0.00787	0.0376	mg/kg dry
Chrysene	218-01-9	0.00832 U	0.00832	0.0376	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0128 U	0.0128	0.0376	mg/kg dry
Fluoranthene	206-44-0	0.0101 U	0.0101	0.0376	mg/kg dry
Fluorene	86-73-7	0.00718 U	0.00718	0.0376	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0132 U	0.0132	0.0376	mg/kg dry
Naphthalene	91-20-3	0.0139 U	0.0139	0.0376	mg/kg dry
Phenanthrene	85-01-8	0.00787 U	0.00787	0.0376	mg/kg dry
Pyrene	129-00-0	0.0101 U	0.0101	0.0376	mg/kg dry

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
p-Terphenyl	92-94-4	1.27	1.90	67 %	34-180



### ANALYTICAL REPORT

Sample ID: CEF-502-SB05-05  
Lab #: B610165-01  
Prep. Method: EPA 3545  
Analyzed: 11/29/06 By: PL  
Anal. Method: FLPRO  
Anal. Batch:  
QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
Work Order #: B610165  
Matrix: Soil  
Unit: mg/kg dry  
Dilution Factor: 1  
Percent Solids: 87.69

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>TPH (C8-C40)</b>	NA	<b>63.4</b>	6.39	7.53	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	4.83	3.80	127 %	29-145
o-Terphenyl	84-15-1	2.12	1.90	112 %	36-140



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**ANALYTICAL REPORT**

Sample ID: CEF-502-SB01-05  
 Lab #: B610165-02  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 84.33

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0126 U	0.0126	0.0391	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0117 U	0.0117	0.0391	mg/kg dry
Acenaphthene	83-32-9	0.00861 U	0.00861	0.0391	mg/kg dry
Acenaphthylene	208-96-8	0.0126 U	0.0126	0.0391	mg/kg dry
Anthracene	120-12-7	0.00818 U	0.00818	0.0391	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00818 U	0.00818	0.0391	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00818 U	0.00818	0.0391	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00632 U	0.00632	0.0391	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0121 U	0.0121	0.0391	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00818 U	0.00818	0.0391	mg/kg dry
Chrysene	218-01-9	0.00866 U	0.00866	0.0391	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0133 U	0.0133	0.0391	mg/kg dry
Fluoranthene	206-44-0	0.0106 U	0.0106	0.0391	mg/kg dry
Fluorene	86-73-7	0.00747 U	0.00747	0.0391	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0138 U	0.0138	0.0391	mg/kg dry
Naphthalene	91-20-3	0.0145 U	0.0145	0.0391	mg/kg dry
Phenanthrene	85-01-8	0.00818 U	0.00818	0.0391	mg/kg dry
Pyrene	129-00-0	0.0106 U	0.0106	0.0391	mg/kg dry

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
p-Terphenyl	92-94-4	1.12	1.98	57 %	34-180



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### ANALYTICAL REPORT

Sample ID: CEF-502-SB01-05  
Lab #: B610165-02  
Prep. Method: EPA 3545  
Analyzed: 11/29/06 By: PL  
Anal. Method: FLPRO  
Anal. Batch:  
QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
Work Order #: B610165  
Matrix: Soil  
Unit: mg/kg dry  
Dilution Factor: 1  
Percent Solids: 84.33

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	6.64 U	6.64	7.83	mg/kg dry
Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
n-Nonatriacontane	7194-86-7	4.35	3.95	110 %	29-145
o-Terphenyl	84-15-1	1.94	1.98	98 %	36-140

**ANALYTICAL REPORT**

Sample ID: CEF-502-SB07-05  
 Lab #: B610165-03  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 90.61

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0117 U	0.0117	0.0364	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0109 U	0.0109	0.0364	mg/kg dry
Acenaphthene	83-32-9	0.00801 U	0.00801	0.0364	mg/kg dry
Acenaphthylene	208-96-8	0.0117 U	0.0117	0.0364	mg/kg dry
Anthracene	120-12-7	0.00762 U	0.00762	0.0364	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00762 U	0.00762	0.0364	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00762 U	0.00762	0.0364	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00588 U	0.00588	0.0364	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0113 U	0.0113	0.0364	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00762 U	0.00762	0.0364	mg/kg dry
Chrysene	218-01-9	0.00806 U	0.00806	0.0364	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0124 U	0.0124	0.0364	mg/kg dry
Fluoranthene	206-44-0	0.00982 U	0.00982	0.0364	mg/kg dry
Fluorene	86-73-7	0.00695 U	0.00695	0.0364	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0128 U	0.0128	0.0364	mg/kg dry
Naphthalene	91-20-3	0.0135 U	0.0135	0.0364	mg/kg dry
Phenanthrene	85-01-8	0.00762 U	0.00762	0.0364	mg/kg dry
Pyrene	129-00-0	0.00982 U	0.00982	0.0364	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
p-Terphenyl	92-94-4	1.94	1.84	105 %	34-180



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### ANALYTICAL REPORT

Sample ID: CEF-502-SB07-05  
 Lab #: B610165-03  
 Prep. Method: EPA 3545  
 Analyzed: 11/29/06 By: PL  
 Anal. Method: FLPRO  
 Anal. Batch:  
 QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 5  
 Percent Solids: 90.61

#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	804 D	30.9	36.4	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	3.88	3.68	106 %	29-145
o-Terphenyl	84-15-1	2.12	1.84	115 %	36-140

**ANALYTICAL REPORT**

Sample ID: CEF-502-SB08-05  
 Lab #: B610165-04  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 82.97

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0128 U	0.0128	0.0398	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0119 U	0.0119	0.0398	mg/kg dry
Acenaphthene	83-32-9	0.00875 U	0.00875	0.0398	mg/kg dry
Acenaphthylene	208-96-8	0.0128 U	0.0128	0.0398	mg/kg dry
Anthracene	120-12-7	0.00832 U	0.00832	0.0398	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00832 U	0.00832	0.0398	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00832 U	0.00832	0.0398	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00642 U	0.00642	0.0398	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0123 U	0.0123	0.0398	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00832 U	0.00832	0.0398	mg/kg dry
Chrysene	218-01-9	0.00880 U	0.00880	0.0398	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0135 U	0.0135	0.0398	mg/kg dry
Fluoranthene	206-44-0	0.0107 U	0.0107	0.0398	mg/kg dry
Fluorene	86-73-7	0.00759 U	0.00759	0.0398	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0140 U	0.0140	0.0398	mg/kg dry
Naphthalene	91-20-3	0.0147 U	0.0147	0.0398	mg/kg dry
Phenanthrene	85-01-8	0.00832 U	0.00832	0.0398	mg/kg dry
Pyrene	129-00-0	0.0107 U	0.0107	0.0398	mg/kg dry

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
p-Terphenyl	92-94-4	1.11	2.01	55 %	34-180



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### ANALYTICAL REPORT

Sample ID: CEF-502-SB08-05  
Lab #: B610165-04  
Prep. Method: EPA 3545  
Analyzed: 11/29/06 By: PL  
Anal. Method: FLPRO  
Anal. Batch:  
QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
Work Order #: B610165  
Matrix: Soil  
Unit: mg/kg dry  
Dilution Factor: 1  
Percent Solids: 82.97

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>TPH (C8-C40)</b>	NA	<b>185</b>	6.75	7.95	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	4.11	4.02	102 %	29-145
o-Terphenyl	84-15-1	1.95	2.01	97 %	36-140

**ANALYTICAL REPORT**

Sample ID: CEF-502-SB09-03  
 Lab #: B610165-05  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 91.05

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0116 U	0.0116	0.0362	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0109 U	0.0109	0.0362	mg/kg dry
Acenaphthene	83-32-9	0.00797 U	0.00797	0.0362	mg/kg dry
Acenaphthylene	208-96-8	0.0116 U	0.0116	0.0362	mg/kg dry
Anthracene	120-12-7	0.00758 U	0.00758	0.0362	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00758 U	0.00758	0.0362	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00758 U	0.00758	0.0362	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00585 U	0.00585	0.0362	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0112 U	0.0112	0.0362	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00758 U	0.00758	0.0362	mg/kg dry
<b>Chrysene</b>	218-01-9	<b>0.0220 J</b>	0.00802	0.0362	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0123 U	0.0123	0.0362	mg/kg dry
Fluoranthene	206-44-0	0.00977 U	0.00977	0.0362	mg/kg dry
Fluorene	86-73-7	0.00692 U	0.00692	0.0362	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0127 U	0.0127	0.0362	mg/kg dry
Naphthalene	91-20-3	0.0134 U	0.0134	0.0362	mg/kg dry
Phenanthrene	85-01-8	0.00758 U	0.00758	0.0362	mg/kg dry
Pyrene	129-00-0	0.00977 U	0.00977	0.0362	mg/kg dry

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
p-Terphenyl	92-94-4	1.73	1.83	94 %	34-180



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### ANALYTICAL REPORT

Sample ID: CEF-502-SB09-03  
 Lab #: B610165-05  
 Prep. Method: EPA 3545  
 Analyzed: 11/29/06 By: PL  
 Anal. Method: FLPRO  
 Anal. Batch:  
 QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 20  
 Percent Solids: 91.05

#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	3580 D	123	145	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	4.03	3.66	110 %	29-145
o-Terphenyl	84-15-1	2.64 S-GC	1.83	144 %	36-140

**ANALYTICAL REPORT**

Sample ID: CEF-502-SB10-05  
 Lab #: B610165-06  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 83.71

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0127 U	0.0127	0.0394	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0118 U	0.0118	0.0394	mg/kg dry
Acenaphthene	83-32-9	0.00867 U	0.00867	0.0394	mg/kg dry
Acenaphthylene	208-96-8	0.0127 U	0.0127	0.0394	mg/kg dry
Anthracene	120-12-7	0.00824 U	0.00824	0.0394	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00824 U	0.00824	0.0394	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00824 U	0.00824	0.0394	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00636 U	0.00636	0.0394	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0122 U	0.0122	0.0394	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00824 U	0.00824	0.0394	mg/kg dry
Chrysene	218-01-9	0.00872 U	0.00872	0.0394	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0134 U	0.0134	0.0394	mg/kg dry
Fluoranthene	206-44-0	0.0106 U	0.0106	0.0394	mg/kg dry
Fluorene	86-73-7	0.00753 U	0.00753	0.0394	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0139 U	0.0139	0.0394	mg/kg dry
Naphthalene	91-20-3	0.0146 U	0.0146	0.0394	mg/kg dry
Phenanthrene	85-01-8	0.00824 U	0.00824	0.0394	mg/kg dry
Pyrene	129-00-0	0.0106 U	0.0106	0.0394	mg/kg dry

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
p-Terphenyl	92-94-4	1.46	1.99	73 %	34-180



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### ANALYTICAL REPORT

Sample ID: CEF-502-SB10-05  
Lab #: B610165-06  
Prep. Method: EPA 3545  
Analyzed: 11/29/06 By: PL  
Anal. Method: FLPRO  
Anal. Batch:  
QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
Work Order #: B610165  
Matrix: Soil  
Unit: mg/kg dry  
Dilution Factor: 1  
Percent Solids: 83.71

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>TPH (C8-C40)</b>	NA	<b>434</b>	6.69	7.88	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	4.33	3.98	109 %	29-145
o-Terphenyl	84-15-1	1.92	1.99	96 %	36-140

**ANALYTICAL REPORT**

Sample ID: CEF-502-SB-DU-01  
 Lab #: B610165-07  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 93.47

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0113 U	0.0113	0.0353	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0106 U	0.0106	0.0353	mg/kg dry
Acenaphthene	83-32-9	0.00777 U	0.00777	0.0353	mg/kg dry
Acenaphthylene	208-96-8	0.0113 U	0.0113	0.0353	mg/kg dry
Anthracene	120-12-7	0.00738 U	0.00738	0.0353	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00738 U	0.00738	0.0353	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00738 U	0.00738	0.0353	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00570 U	0.00570	0.0353	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0109 U	0.0109	0.0353	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00738 U	0.00738	0.0353	mg/kg dry
Chrysene	218-01-9	0.00781 U	0.00781	0.0353	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0120 U	0.0120	0.0353	mg/kg dry
Fluoranthene	206-44-0	0.00952 U	0.00952	0.0353	mg/kg dry
Fluorene	86-73-7	0.00674 U	0.00674	0.0353	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0124 U	0.0124	0.0353	mg/kg dry
Naphthalene	91-20-3	0.0131 U	0.0131	0.0353	mg/kg dry
Phenanthrene	85-01-8	0.00738 U	0.00738	0.0353	mg/kg dry
Pyrene	129-00-0	0.00952 U	0.00952	0.0353	mg/kg dry

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
p-Terphenyl	92-94-4	2.09	1.78	117 %	34-180



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### ANALYTICAL REPORT

Sample ID: CEF-502-SB-DU-01  
Lab #: B610165-07  
Prep. Method: EPA 3545  
Analyzed: 11/30/06 By: PL  
Anal. Method: FLPRO  
Anal. Batch:  
QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
Work Order #: B610165  
Matrix: Soil  
Unit: mg/kg dry  
Dilution Factor: 1  
Percent Solids: 93.47

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>TPH (C8-C40)</b>	NA	<b>299</b>	5.99	7.06	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	4.06	3.57	114 %	29-145
o-Terphenyl	84-15-1	1.95	1.78	110 %	36-140

**ANALYTICAL REPORT**

Sample ID: CEF-502-SB03-05  
 Lab #: B610165-08  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 79.46

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0133 U	0.0133	0.0415	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0125 U	0.0125	0.0415	mg/kg dry
Acenaphthene	83-32-9	0.00914 U	0.00914	0.0415	mg/kg dry
Acenaphthylene	208-96-8	0.0133 U	0.0133	0.0415	mg/kg dry
Anthracene	120-12-7	0.00868 U	0.00868	0.0415	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00868 U	0.00868	0.0415	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00868 U	0.00868	0.0415	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00671 U	0.00671	0.0415	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0128 U	0.0128	0.0415	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00868 U	0.00868	0.0415	mg/kg dry
Chrysene	218-01-9	0.00919 U	0.00919	0.0415	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0141 U	0.0141	0.0415	mg/kg dry
Fluoranthene	206-44-0	0.0112 U	0.0112	0.0415	mg/kg dry
Fluorene	86-73-7	0.00793 U	0.00793	0.0415	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0146 U	0.0146	0.0415	mg/kg dry
Naphthalene	91-20-3	0.0154 U	0.0154	0.0415	mg/kg dry
Phenanthrene	85-01-8	0.00868 U	0.00868	0.0415	mg/kg dry
Pyrene	129-00-0	0.0112 U	0.0112	0.0415	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
p-Terphenyl	92-94-4	1.31	2.10	63 %	34-180



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### ANALYTICAL REPORT

Sample ID: CEF-502-SB03-05  
Lab #: B610165-08  
Prep. Method: EPA 3545  
Analyzed: 11/30/06 By: PL  
Anal. Method: FLPRO  
Anal. Batch:  
QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
Work Order #: B610165  
Matrix: Soil  
Unit: mg/kg dry  
Dilution Factor: 1  
Percent Solids: 79.46

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>TPH (C8-C40)</b>	NA	<b>70.6</b>	7.05	8.31	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	4.80	4.20	114 %	29-145
o-Terphenyl	84-15-1	2.19	2.10	105 %	36-140

**ANALYTICAL REPORT**

Sample ID: CEF-502-SB04-05  
 Lab #: B610165-09  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 90.14

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0118 U	0.0118	0.0366	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0110 U	0.0110	0.0366	mg/kg dry
Acenaphthene	83-32-9	0.00805 U	0.00805	0.0366	mg/kg dry
Acenaphthylene	208-96-8	0.0118 U	0.0118	0.0366	mg/kg dry
Anthracene	120-12-7	0.00765 U	0.00765	0.0366	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00765 U	0.00765	0.0366	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00765 U	0.00765	0.0366	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00591 U	0.00591	0.0366	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0113 U	0.0113	0.0366	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00765 U	0.00765	0.0366	mg/kg dry
Chrysene	218-01-9	0.00810 U	0.00810	0.0366	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0124 U	0.0124	0.0366	mg/kg dry
Fluoranthene	206-44-0	0.00987 U	0.00987	0.0366	mg/kg dry
Fluorene	86-73-7	0.00699 U	0.00699	0.0366	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0129 U	0.0129	0.0366	mg/kg dry
Naphthalene	91-20-3	0.0135 U	0.0135	0.0366	mg/kg dry
Phenanthrene	85-01-8	0.00765 U	0.00765	0.0366	mg/kg dry
Pyrene	129-00-0	0.00987 U	0.00987	0.0366	mg/kg dry

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
p-Terphenyl	92-94-4	2.01	1.85	109 %	34-180



**ANALYTICAL REPORT**

Sample ID: CEF-502-SB04-05  
Lab #: B610165-09  
Prep. Method: EPA 3545  
Analyzed: 11/30/06 By: PL  
Anal. Method: FLPRO  
Anal. Batch:  
QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
Work Order #: B610165  
Matrix: Soil  
Unit: mg/kg dry  
Dilution Factor: 1  
Percent Solids: 90.14

**FL Petroleum Range Organics**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>TPH (C8-C40)</b>	NA	<b>161</b>	6.21	7.32	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	4.19	3.70	113 %	29-145
o-Terphenyl	84-15-1	1.96	1.85	106 %	36-140

**ANALYTICAL REPORT**

Sample ID: CEF-502-SB06-05  
 Lab #: B610165-10  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 93.41

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0113 U	0.0113	0.0353	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0106 U	0.0106	0.0353	mg/kg dry
Acenaphthene	83-32-9	0.00777 U	0.00777	0.0353	mg/kg dry
Acenaphthylene	208-96-8	0.0113 U	0.0113	0.0353	mg/kg dry
Anthracene	120-12-7	0.00739 U	0.00739	0.0353	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00739 U	0.00739	0.0353	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00739 U	0.00739	0.0353	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00570 U	0.00570	0.0353	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0109 U	0.0109	0.0353	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00739 U	0.00739	0.0353	mg/kg dry
Chrysene	218-01-9	0.00782 U	0.00782	0.0353	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0120 U	0.0120	0.0353	mg/kg dry
Fluoranthene	206-44-0	0.00953 U	0.00953	0.0353	mg/kg dry
Fluorene	86-73-7	0.00674 U	0.00674	0.0353	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0124 U	0.0124	0.0353	mg/kg dry
Naphthalene	91-20-3	0.0131 U	0.0131	0.0353	mg/kg dry
Phenanthrene	85-01-8	0.00739 U	0.00739	0.0353	mg/kg dry
Pyrene	129-00-0	0.00953 U	0.00953	0.0353	mg/kg dry

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
p-Terphenyl	92-94-4	2.26	1.78	126 %	34-180



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**ANALYTICAL REPORT**

Sample ID: CEF-502-SB06-05  
Lab #: B610165-10  
Prep. Method: EPA 3545  
Analyzed: 11/30/06 By: PL  
Anal. Method: FLPRO  
Anal. Batch:  
QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
Work Order #: B610165  
Matrix: Soil  
Unit: mg/kg dry  
Dilution Factor: 1  
Percent Solids: 93.41

**FL Petroleum Range Organics**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>TPH (C8-C40)</b>	NA	<b>378</b>	6.00	7.07	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	4.06	3.57	114 %	29-145
o-Terphenyl	84-15-1	2.93 S-GC	1.78	164 %	36-140

**ANALYTICAL REPORT**

Sample ID: CEF-502-SB02-03  
 Lab #: B610165-11  
 Prep. Method: EPA 3545\_MS  
 Analyzed: 12/04/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00073  
 QC Batch: 6K28006

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610165  
 Matrix: Soil  
 Unit: mg/kg dry  
 Dilution Factor: 1  
 Percent Solids: 92.12

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.0115 U	0.0115	0.0358	mg/kg dry
2-Methylnaphthalene	91-57-6	0.0107 U	0.0107	0.0358	mg/kg dry
Acenaphthene	83-32-9	0.00788 U	0.00788	0.0358	mg/kg dry
Acenaphthylene	208-96-8	0.0115 U	0.0115	0.0358	mg/kg dry
Anthracene	120-12-7	0.00749 U	0.00749	0.0358	mg/kg dry
Benzo(a)anthracene	56-55-3	0.00749 U	0.00749	0.0358	mg/kg dry
Benzo(a)pyrene	50-32-8	0.00749 U	0.00749	0.0358	mg/kg dry
Benzo(b)fluoranthene	205-99-2	0.00578 U	0.00578	0.0358	mg/kg dry
Benzo(g,h,i)perylene	191-24-2	0.0111 U	0.0111	0.0358	mg/kg dry
Benzo(k)fluoranthene	207-08-9	0.00749 U	0.00749	0.0358	mg/kg dry
Chrysene	218-01-9	0.00792 U	0.00792	0.0358	mg/kg dry
Dibenzo(a,h)anthracene	53-70-3	0.0122 U	0.0122	0.0358	mg/kg dry
Fluoranthene	206-44-0	0.00966 U	0.00966	0.0358	mg/kg dry
Fluorene	86-73-7	0.00684 U	0.00684	0.0358	mg/kg dry
Indeno(1,2,3-cd)pyrene	193-39-5	0.0126 U	0.0126	0.0358	mg/kg dry
Naphthalene	91-20-3	0.0132 U	0.0132	0.0358	mg/kg dry
Phenanthrene	85-01-8	0.00749 U	0.00749	0.0358	mg/kg dry
Pyrene	129-00-0	0.00966 U	0.00966	0.0358	mg/kg dry
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
p-Terphenyl	92-94-4	1.88	1.81	104 %	34-180



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### ANALYTICAL REPORT

Sample ID: CEF-502-SB02-03  
Lab #: B610165-11  
Prep. Method: EPA 3545  
Analyzed: 11/30/06 By: PL  
Anal. Method: FLPRO  
Anal. Batch:  
QC Batch: 6K28007

Project: NAS Cecil Field CTO #0025  
Work Order #: B610165  
Matrix: Soil  
Unit: mg/kg dry  
Dilution Factor: 1  
Percent Solids: 92.12

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	15.3	6.08	7.16	mg/kg dry
Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
n-Nonatriacontane	7194-86-7	3.00	3.62	83 %	29-145
o-Terphenyl	84-15-1	1.57	1.81	87 %	36-140



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**QUALITY CONTROL**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
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**Semivolatile Organic Compounds by GCMS SIM - Quality Control**

Batch 6K28006 - EPA 3545\_MS

**Blank (6K28006-BLK1)**

Prepared: 11/28/2006 08:59 Analyzed: 12/04/2006 16:42

Benzo(a)anthracene	0.00690 U	0.0330	mg/kg wet
Benzo(b)fluoranthene	0.00533 U	0.0330	mg/kg wet
Benzo(k)fluoranthene	0.00690 U	0.0330	mg/kg wet
Benzo(g,h,i)perylene	0.0102 U	0.0330	mg/kg wet
Benzo(a)pyrene	0.00690 U	0.0330	mg/kg wet
Dibenzo(a,h)anthracene	0.0112 U	0.0330	mg/kg wet
Indeno(1,2,3-cd)pyrene	0.0116 U	0.0330	mg/kg wet
Naphthalene	0.0122 U	0.0330	mg/kg wet
2-Methylnaphthalene	0.00990 U	0.0330	mg/kg wet
1-Methylnaphthalene	0.0106 U	0.0330	mg/kg wet
Acenaphthylene	0.0106 U	0.0330	mg/kg wet
Acenaphthene	0.00726 U	0.0330	mg/kg wet
Fluorene	0.00630 U	0.0330	mg/kg wet
Phenanthrene	0.00690 U	0.0330	mg/kg wet
Anthracene	0.00690 U	0.0330	mg/kg wet
Fluoranthene	0.00890 U	0.0330	mg/kg wet
Pyrene	0.00890 U	0.0330	mg/kg wet
Chrysene	0.00730 U	0.0330	mg/kg wet

Surrogate: *p*-Terphenyl 1.13 mg/kg wet 1.67 68 34-180

**LCS (6K28006-BS1)**

Prepared: 11/28/2006 08:59 Analyzed: 12/04/2006 17:00

Benzo(a)anthracene	0.533	0.0330	mg/kg wet	0.667	80	50-105
Benzo(b)fluoranthene	0.500	0.0330	mg/kg wet	0.667	75	55-120
Benzo(k)fluoranthene	0.553	0.0330	mg/kg wet	0.667	83	50-120
Benzo(g,h,i)perylene	0.473	0.0330	mg/kg wet	0.667	71	55-115
Benzo(a)pyrene	0.527	0.0330	mg/kg wet	0.667	79	40-125
Dibenzo(a,h)anthracene	0.593	0.0330	mg/kg wet	0.667	89	45-115
Indeno(1,2,3-cd)pyrene	0.537	0.0330	mg/kg wet	0.667	80	55-135
Naphthalene	0.480	0.0330	mg/kg wet	0.667	72	50-104
2-Methylnaphthalene	0.510	0.0330	mg/kg wet	0.667	76	48-117
1-Methylnaphthalene	0.503	0.0330	mg/kg wet	0.667	75	43-114
Acenaphthylene	0.520	0.0330	mg/kg wet	0.667	78	35-115
Acenaphthene	0.507	0.0330	mg/kg wet	0.667	76	35-110
Fluorene	0.527	0.0330	mg/kg wet	0.667	79	45-105
Phenanthrene	0.503	0.0330	mg/kg wet	0.667	75	55-125
Anthracene	0.523	0.0330	mg/kg wet	0.667	78	40-125
Fluoranthene	0.587	0.0330	mg/kg wet	0.667	88	40-135
Pyrene	0.573	0.0330	mg/kg wet	0.667	86	50-115
Chrysene	0.507	0.0330	mg/kg wet	0.667	76	55-120

Surrogate: *p*-Terphenyl 1.92 mg/kg wet 1.67 115 34-180

**Matrix Spike (6K28006-MS1)**

Source: B610165-01

Prepared: 11/28/2006 08:59 Analyzed: 12/04/2006 17:17

Benzo(a)anthracene	0.342	0.0376	mg/kg dry	0.760	0.00787 U	45	52-114
Benzo(b)fluoranthene	0.312	0.0376	mg/kg dry	0.760	0.00608 U	41	49-116
Benzo(k)fluoranthene	0.312	0.0376	mg/kg dry	0.760	0.00787 U	41	43-133
Benzo(g,h,i)perylene	0.247	0.0376	mg/kg dry	0.760	0.0116 U	32	36-115

**QUALITY CONTROL**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
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**Semivolatile Organic Compounds by GCMS SIM - Quality Control**

Batch 6K28006 - EPA 3545\_MS

**Matrix Spike (6K28006-MS1) Continued** Source: B610165-01 Prepared: 11/28/2006 08:59 Analyzed: 12/04/2006 17:17

Benzo(a)pyrene	0.293	0.0376	mg/kg dry	0.760	0.00787 U	38	50-113			
Dibenzo(a,h)anthracene	0.422	0.0376	mg/kg dry	0.760	0.0128 U	55	41-118			
Indeno(1,2,3-cd)pyrene	0.319	0.0376	mg/kg dry	0.760	0.0132 U	42	43-115			
Naphthalene	0.418	0.0376	mg/kg dry	0.760	0.0139 U	55	50-114			
2-Methylnaphthalene	0.418	0.0376	mg/kg dry	0.760	0.0113 U	55	48-117			
1-Methylnaphthalene	0.411	0.0376	mg/kg dry	0.760	0.0121 U	54	43-114			
Acenaphthylene	0.407	0.0376	mg/kg dry	0.760	0.0121 U	53	47-118			
Acenaphthene	0.388	0.0376	mg/kg dry	0.760	0.00828 U	51	49-117			
Fluorene	0.395	0.0376	mg/kg dry	0.760	0.00718 U	52	47-119			
Phenanthrene	0.376	0.0376	mg/kg dry	0.760	0.00787 U	50	51-113			
Anthracene	0.369	0.0376	mg/kg dry	0.760	0.00787 U	48	49-125			
Fluoranthene	0.403	0.0376	mg/kg dry	0.760	0.0101 U	53	52-132			
Pyrene	0.392	0.0376	mg/kg dry	0.760	0.0101 U	52	52-126			
Chrysene	0.346	0.0376	mg/kg dry	0.760	0.00832 U	46	47-128			

Surrogate: p-Terphenyl 1.55 mg/kg dry 1.90 82 34-180

**Matrix Spike (6K28006-MS2)** Source: B610165-01 Prepared: 11/28/2006 08:59 Analyzed: 12/05/2006 10:54

Benzo(a)anthracene	0.407	0.0376	mg/kg dry	0.760	0.00787 U	53	52-114			
Benzo(b)fluoranthene	0.373	0.0376	mg/kg dry	0.760	0.00608 U	49	49-116			
Benzo(k)fluoranthene	0.384	0.0376	mg/kg dry	0.760	0.00787 U	50	43-133			
Benzo(g,h,i)perylene	0.308	0.0376	mg/kg dry	0.760	0.0116 U	40	36-115			
Benzo(a)pyrene	0.357	0.0376	mg/kg dry	0.760	0.00787 U	47	50-113			
Dibenzo(a,h)anthracene	0.509	0.0376	mg/kg dry	0.760	0.0128 U	67	41-118			
Indeno(1,2,3-cd)pyrene	0.388	0.0376	mg/kg dry	0.760	0.0132 U	51	43-115			
Naphthalene	0.502	0.0376	mg/kg dry	0.760	0.0139 U	66	50-114			
2-Methylnaphthalene	0.506	0.0376	mg/kg dry	0.760	0.0113 U	66	48-117			
1-Methylnaphthalene	0.494	0.0376	mg/kg dry	0.760	0.0121 U	65	43-114			
Acenaphthylene	0.479	0.0376	mg/kg dry	0.760	0.0121 U	63	47-118			
Acenaphthene	0.460	0.0376	mg/kg dry	0.760	0.00828 U	60	49-117			
Fluorene	0.475	0.0376	mg/kg dry	0.760	0.00718 U	62	47-119			
Phenanthrene	0.449	0.0376	mg/kg dry	0.760	0.00787 U	59	51-113			
Anthracene	0.441	0.0376	mg/kg dry	0.760	0.00787 U	58	49-125			
Fluoranthene	0.487	0.0376	mg/kg dry	0.760	0.0101 U	64	52-132			
Pyrene	0.471	0.0376	mg/kg dry	0.760	0.0101 U	62	52-126			
Chrysene	0.414	0.0376	mg/kg dry	0.760	0.00832 U	54	47-128			

Surrogate: p-Terphenyl 1.90 mg/kg dry 1.90 100 34-180

**Matrix Spike Dup (6K28006-MSD1)** Source: B610165-01 Prepared: 11/28/2006 08:59 Analyzed: 12/04/2006 17:35

Benzo(a)anthracene	0.258	0.0376	mg/kg dry	0.760	0.00787 U	34	52-114	28	20	
Benzo(b)fluoranthene	0.209	0.0376	mg/kg dry	0.760	0.00608 U	28	49-116	39	23	
Benzo(k)fluoranthene	0.255	0.0376	mg/kg dry	0.760	0.00787 U	34	43-133	20	22	
Benzo(g,h,i)perylene	0.201	0.0376	mg/kg dry	0.760	0.0116 U	26	36-115	20	24	
Benzo(a)pyrene	0.217	0.0376	mg/kg dry	0.760	0.00787 U	28	50-113	30	21	
Dibenzo(a,h)anthracene	0.361	0.0376	mg/kg dry	0.760	0.0128 U	48	41-118	16	21	
Indeno(1,2,3-cd)pyrene	0.258	0.0376	mg/kg dry	0.760	0.0132 U	34	43-115	21	23	
Naphthalene	0.365	0.0376	mg/kg dry	0.760	0.0139 U	48	50-114	14	23	

**QUALITY CONTROL**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
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**Semivolatile Organic Compounds by GCMS SIM - Quality Control**

Batch 6K28006 - EPA 3545\_MS

**Matrix Spike Dup (6K28006-MSD1) Continued** Source: B610165-01 Prepared: 11/28/2006 08:59 Analyzed: 12/04/2006 17:35

2-Methylnaphthalene	0.365	0.0376	mg/kg dry	0.760	0.0113 U	48	48-117	14	20	
1-Methylnaphthalene	0.354	0.0376	mg/kg dry	0.760	0.0121 U	46	43-114	15	23	
Acenaphthylene	0.331	0.0376	mg/kg dry	0.760	0.0121 U	44	47-118	21	23	
Acenaphthene	0.319	0.0376	mg/kg dry	0.760	0.00828 U	42	49-117	19	19	
Fluorene	0.319	0.0376	mg/kg dry	0.760	0.00718 U	42	47-119	21	22	
Phenanthrene	0.293	0.0376	mg/kg dry	0.760	0.00787 U	38	51-113	25	22	
Anthracene	0.281	0.0376	mg/kg dry	0.760	0.00787 U	37	49-125	27	24	
Fluoranthene	0.304	0.0376	mg/kg dry	0.760	0.0101 U	40	52-132	28	20	
Pyrene	0.296	0.0376	mg/kg dry	0.760	0.0101 U	39	52-126	28	25	
Chrysene	0.266	0.0376	mg/kg dry	0.760	0.00832 U	35	47-128	26	23	

Surrogate: p-Terphenyl 1.33 mg/kg dry 1.90 70 34-180

**Matrix Spike Dup (6K28006-MSD2)** Source: B610165-01 Prepared: 11/28/2006 08:59 Analyzed: 12/05/2006 11:11

Benzo(a)anthracene	0.285	0.0376	mg/kg dry	0.760	0.00787 U	38	52-114	35	20	
Benzo(b)fluoranthene	0.236	0.0376	mg/kg dry	0.760	0.00608 U	31	49-116	45	23	
Benzo(k)fluoranthene	0.289	0.0376	mg/kg dry	0.760	0.00787 U	38	43-133	28	22	
Benzo(g,h,i)perylene	0.228	0.0376	mg/kg dry	0.760	0.0116 U	30	36-115	30	24	
Benzo(a)pyrene	0.247	0.0376	mg/kg dry	0.760	0.00787 U	32	50-113	36	21	
Dibenzo(a,h)anthracene	0.414	0.0376	mg/kg dry	0.760	0.0128 U	54	41-118	21	21	
Indeno(1,2,3-cd)pyrene	0.293	0.0376	mg/kg dry	0.760	0.0132 U	38	43-115	28	23	
Naphthalene	0.411	0.0376	mg/kg dry	0.760	0.0139 U	54	50-114	20	23	
2-Methylnaphthalene	0.407	0.0376	mg/kg dry	0.760	0.0113 U	53	48-117	22	20	
1-Methylnaphthalene	0.388	0.0376	mg/kg dry	0.760	0.0121 U	51	43-114	24	23	
Acenaphthylene	0.365	0.0376	mg/kg dry	0.760	0.0121 U	48	47-118	27	23	
Acenaphthene	0.350	0.0376	mg/kg dry	0.760	0.00828 U	46	49-117	27	19	
Fluorene	0.357	0.0376	mg/kg dry	0.760	0.00718 U	47	47-119	28	22	
Phenanthrene	0.327	0.0376	mg/kg dry	0.760	0.00787 U	43	51-113	31	22	
Anthracene	0.315	0.0376	mg/kg dry	0.760	0.00787 U	42	49-125	33	24	
Fluoranthene	0.346	0.0376	mg/kg dry	0.760	0.0101 U	46	52-132	34	20	
Pyrene	0.338	0.0376	mg/kg dry	0.760	0.0101 U	44	52-126	33	25	
Chrysene	0.300	0.0376	mg/kg dry	0.760	0.00832 U	40	47-128	32	23	

Surrogate: p-Terphenyl 1.55 mg/kg dry 1.90 81 34-180

**FL Petroleum Range Organics - Quality Control**

Batch 6K28007 - EPA 3545

**Blank (6K28007-BLK1)** Prepared: 11/28/2006 09:01 Analyzed: 11/29/2006 12:35

TPH (C8-C40)	5.60 U	6.60	mg/kg wet							
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**LCS (6K28007-BS1)** Prepared: 11/28/2006 09:01 Analyzed: 11/29/2006 12:57

TPH (C8-C40)	35.9	6.60	mg/kg wet	56.7		63	48-118			
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**Matrix Spike (6K28007-MS1)** Source: B610165-01 Prepared: 11/28/2006 09:01 Analyzed: 11/29/2006 13:20

TPH (C8-C40)	105	7.53	mg/kg dry	64.6	63.4	65	40-136			
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**Matrix Spike Dup (6K28007-MSD1)** Source: B610165-01 Prepared: 11/28/2006 09:01 Analyzed: 11/29/2006 13:41

TPH (C8-C40)	116	7.53	mg/kg dry	64.6	63.4	82	40-136	10	25	
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**NOTES AND DEFINITIONS**

- D Data reported from a dilution
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- U Analyte included in the analysis, but not detected

**LABORATORY CERTIFICATION SUMMARY**

<b>Analysis</b>	<b>Matrix</b>	<b>Cert ID</b>	<b>Cert Number</b>
8270C PAH SIM	Soil	NELAC	E82277
FLPRO	Soil	NELAC	E82277

B610164 + B610165  
PAGE 1 OF 2

2486

CHAIN OF CUSTODY

TETRA TECH NUS, INC.

PROJECT NO. 118600378		FACILITY: Building 502		PROJECT MANAGER: Dave Siefken		PHONE NUMBER: 904-636-6125		LABORATORY NAME AND CONTACT: ENCO			
SAMPLERS (SIGNATURE): Kara J. Wumble		FIELD OPERATIONS LEADER: Terry Cottrell		PHONE NUMBER: 904-636-6125		ADDRESS: FL - PRG		CITY/STATE: JACKSONVILLE FL			
STANDARD TAT <input checked="" type="checkbox"/>		RUSH TAT <input type="checkbox"/>		CARRIER/BILL NUMBER: Rand - de liva		CONTAINER TYPE: PLASTIC (P) or GLASS (G)		PRESERVATIVE USED			
DATE	TIME	LOCATION ID	SAMPLE ID	TOP DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD	NO. OF CONTAINERS	COMB (G)	COMB (G)		
11/20	1500	CEF-502-6S-01			GW	GW	6	1	3		
11/20	1544	CEF-502-6TD-01			GW	GW	6	1	3		
11/20	1640	CEF-502-3S-01			GW	GW	6	1	3		
11/20	1600	CEF-502-S80S-0S			SO	SO	1	1	1		
11/20	1550	CEF-502-S801-0S			SO	SO	1	1	1		
11/21	0935	CEF-502-8S-01			GW	GW	6	1	3		
11/21	0956	CEF-502-GW-DUP-01			GW	GW	6	1	3		
11/21	1045	CEF-502-15R-01			GW	GW	6	1	3		
11/21	1255	CEF-502-S207-0S			SO	SO	1	1	1		
11/21	1305	CEF-502-S808-0S			SO	SO	1	1	1		
11/21	1344	CEF-502-S809-03			SO	SO	1	1	1		
11/21	1503	CEF-502-S810-0S			SO	SO	1	1	1		
11/21	1600	CEF-502-S8-DU-01			SO	SO	1	1	1		
1. RELINQUISHED BY: [Signature]		DATE: 11/21/04		TIME: 1630		1. RECEIVED BY: [Signature]		DATE: 11/21/04		TIME: 1620	
2. RELINQUISHED BY:		DATE:		TIME:		2. RECEIVED BY:		DATE:		TIME:	
3. RELINQUISHED BY:		DATE:		TIME:		3. RECEIVED BY:		DATE:		TIME:	

COMMENTS: TYPICAL  
 DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)  
 FORM NO. TNUS-001 4/02R



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B610164 + B610165  
PAGE 2 OF 2

2487

NUMBER

CHAIN OF CUSTODY

TETRA TECH NUS, INC.



DATE	YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SQ, SW, SD, QC, ETC)	COLLECTION METHOD	GRAB (G)	COMP (C)	No. OF CONTAINERS	CONTAINER TYPE	PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	LABORATORY NAME AND CONTACT:
11/21	2006	0855	CEF-502-SB03-05				SO G				1	SW 846-8210	G	None	ENCO
11/21		1045	CEF-502-SB04-05				SO G				1	SW 846-8210	G	None	ENCO
11/21		1055	CEF-502-SB06-05				SO G				1	SW 846-8210	G	None	ENCO
11/21		0840	CEF-502-SB02-03				SO G				1	SW 846-8210	G	None	ENCO
11/21		1513	CEF-502-PB01				GW G				6	SW 846-8210	G	None	ENCO
11/21		1145	CEF-502-45-n1				GW G				4	SW 846-8210	G	None	ENCO
<p>PROJECT MANAGER: Dave Stefken          FIELD OPERATIONS LEADER: Ryan Cotnam          CARRIER/BILL NUMBER: hand-delivered          CITY, STATE: Jacksonville, FL</p>															
<p>STANDARD TAT: <input checked="" type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day. <input type="checkbox"/> 14 day</p>															
<p>1. RELINQUISHED BY: [Signature]          DATE: 11-31-06 TIME: 1620          2. RELINQUISHED BY: [Signature]          DATE: 11/21/06 TIME: 1620          3. RELINQUISHED BY: [Signature]          DATE: [ ] TIME: [ ]</p>															
<p>COMMENTS: low recd ngy</p>															

402R FORM NO. TINUS-001

PINK (FILE COPY)

YELLOW (FIELD COPY)

WHITE (ACCOMPANIES SAMPLE)

**ATTACHMENT E**  
**GROUNDWATER LABORATORY ANALYTICAL DATA**

**Environmental Conservation Laboratories, Inc.**

4810 Executive Park Court, Suite 211

Jacksonville FL, 32216-6069

Phone: 904.296.3007 FAX: 904.296.6210



www.encolabs.com

Wednesday, December 6, 2006

Tetra Tech NUS (BR006)

Attn: Mr. Dave Siefken

8640 Philips Highway Suite 16

Jacksonville, FL 32256

**RE: Project Number: 112G00378 Building 502, Project Name/Desc: NAS Cecil Field CTO #0025  
ENCO Workorder: B610164**

Dear Mr. Dave Siefken,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, November 21, 2006.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

This data has been produced in accordance with NELAC standards (June, 2003). This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads 'Christina M. Tompkins'.

Chris Tompkins

Project Manager

Enclosure(s)



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**SAMPLE SUMMARY/LABORATORY CHRONICLE**

**Client ID:** CEF-502-6S-01

**Lab ID:** B610164-01

**Sampled:** 11/20/06 15:00

**Received:** 11/21/06 16:20

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<b>Parameter</b>	<b>Hold Date/Time(s)</b>		<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8260B	12/04/06		12/04/06 09:00	12/4/2006 14:36
EPA 8270C	11/27/06	01/06/07	11/27/06 13:47	11/30/2006 15:25
FLPRO	11/27/06	01/06/07	11/27/06 13:40	11/28/2006 03:45

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**Client ID:** CEF-502-7D-01

**Lab ID:** B610164-02

**Sampled:** 11/20/06 15:44

**Received:** 11/21/06 16:20

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<b>Parameter</b>	<b>Hold Date/Time(s)</b>		<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8260B	12/04/06		12/04/06 09:00	12/4/2006 15:07
EPA 8270C	11/27/06	01/06/07	11/27/06 13:47	11/30/2006 15:42
FLPRO	11/27/06	01/06/07	11/27/06 13:40	11/28/2006 04:07

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**Client ID:** CEF-502-3S-01

**Lab ID:** B610164-03

**Sampled:** 11/20/06 16:40

**Received:** 11/21/06 16:20

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<b>Parameter</b>	<b>Hold Date/Time(s)</b>		<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8260B	12/04/06		12/04/06 09:00	12/4/2006 15:37
EPA 8270C	11/27/06	01/06/07	11/27/06 13:47	11/30/2006 16:00
FLPRO	11/27/06	01/06/07	11/27/06 13:40	11/28/2006 04:29

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**Client ID:** CEF-502-85-01

**Lab ID:** B610164-04

**Sampled:** 11/21/06 09:35

**Received:** 11/21/06 16:20

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<b>Parameter</b>	<b>Hold Date/Time(s)</b>		<b>Prep Date/Time(s)</b>	<b>Analysis Date/Time(s)</b>
EPA 8260B	12/05/06		12/04/06 09:00	12/4/2006 16:08
EPA 8270C	11/28/06	01/06/07	11/27/06 13:47	11/30/2006 16:17
FLPRO	11/28/06	01/06/07	11/27/06 13:40	11/28/2006 04:52

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**Client ID:** CEF-502-GW-DUP-01

**Lab ID:** B610164-05

**Sampled:** 11/21/06 09:55

**Received:** 11/21/06 16:20

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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	12/05/06	12/04/06 09:00	12/4/2006 16:39
EPA 8270C	11/28/06 01/06/07	11/27/06 13:47	11/30/2006 16:35
FLPRO	11/28/06 01/06/07	11/27/06 13:40	11/28/2006 05:14

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**Client ID:** CEF-502-15R-01

**Lab ID:** B610164-06

**Sampled:** 11/21/06 09:45

**Received:** 11/21/06 16:20

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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	12/05/06	12/04/06 09:00	12/4/2006 17:10
EPA 8270C	11/28/06 01/06/07	11/27/06 13:47	11/30/2006 16:52
FLPRO	11/28/06 01/06/07	11/27/06 13:40	11/28/2006 05:37

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**Client ID:** CEF-502-15R-01

**Lab ID:** B610164-06RE1

**Sampled:** 11/21/06 09:45

**Received:** 11/21/06 16:20

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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8270C	11/28/06 01/06/07	11/27/06 13:47	11/30/2006 19:48

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**Client ID:** CEF-502-FB-01

**Lab ID:** B610164-07

**Sampled:** 11/21/06 15:13

**Received:** 11/21/06 16:20

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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	12/05/06	12/04/06 09:00	12/4/2006 17:40
EPA 8270C	11/28/06 01/06/07	11/27/06 13:47	11/30/2006 17:10
FLPRO	11/28/06 01/06/07	11/27/06 13:40	11/28/2006 05:59

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**Client ID:** CEF-502-4S-01

**Lab ID:** B610164-08

**Sampled:** 11/21/06 11:45

**Received:** 11/21/06 16:20

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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	12/05/06	12/04/06 09:00	12/4/2006 18:11
EPA 8270C	11/28/06 01/06/07	11/27/06 13:47	11/30/2006 17:28
FLPRO	11/28/06 01/06/07	11/27/06 13:40	11/28/2006 06:22

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**SAMPLE DETECTION SUMMARY**

**Client ID: CEF-502-6S-01**

**Lab ID: B610164-01**

Analyte	Results/Qual	MRL	Units	Method
1-Methylnaphthalene	1.95	0.10	ug/L	EPA 8270C
2-Methylnaphthalene	3.75	0.10	ug/L	EPA 8270C
Acenaphthene	1.11	0.10	ug/L	EPA 8270C
Ethylbenzene	0.3 J	1.0	ug/L	EPA 8260B
Fluorene	2.16	0.10	ug/L	EPA 8270C
Isopropylbenzene	0.4 J	1.0	ug/L	EPA 8260B
Naphthalene	0.43	0.10	ug/L	EPA 8270C
Phenanthrene	0.08 J	0.10	ug/L	EPA 8270C
TPH (C8-C40)	0.330	0.170	mg/L	FLPRO

**Client ID: CEF-502-3S-01**

**Lab ID: B610164-03**

Analyte	Results/Qual	MRL	Units	Method
1,2,4-Trimethylbenzene	0.5 J	1.0	ug/L	EPA 8260B
1-Methylnaphthalene	6.46	0.10	ug/L	EPA 8270C
2-Methylnaphthalene	4.92	0.10	ug/L	EPA 8270C
Acenaphthene	0.39	0.10	ug/L	EPA 8270C
Fluorene	0.58	0.10	ug/L	EPA 8270C
Naphthalene	0.92	0.10	ug/L	EPA 8270C
Phenanthrene	0.13	0.10	ug/L	EPA 8270C
TPH (C8-C40)	0.166 J	0.170	mg/L	FLPRO

**Client ID: CEF-502-15R-01**

**Lab ID: B610164-06**

Analyte	Results/Qual	MRL	Units	Method
1,2,4-Trimethylbenzene	6.9	1.0	ug/L	EPA 8260B
1,3,5-Trimethylbenzene	2.8	1.0	ug/L	EPA 8260B
Acenaphthene	1.72	0.10	ug/L	EPA 8270C
Anthracene	0.07 J	0.10	ug/L	EPA 8270C
Ethylbenzene	2.5	1.0	ug/L	EPA 8260B
Fluorene	2.78	0.10	ug/L	EPA 8270C
Isopropylbenzene	2.7	1.0	ug/L	EPA 8260B
Naphthalene	11.2	0.10	ug/L	EPA 8270C
Phenanthrene	2.40	0.10	ug/L	EPA 8270C
TPH (C8-C40)	2.11	0.170	mg/L	FLPRO

**Client ID: CEF-502-15R-01**

**Lab ID: B610164-06RE1**

Analyte	Results/Qual	MRL	Units	Method
1-Methylnaphthalene	52.8 D	1.00	ug/L	EPA 8270C
2-Methylnaphthalene	110 D	1.00	ug/L	EPA 8270C

**Client ID: CEF-502-4S-01**

**Lab ID: B610164-08**

Analyte	Results/Qual	MRL	Units	Method
1,2,4-Trimethylbenzene	0.6 J	1.0	ug/L	EPA 8260B
1,3,5-Trimethylbenzene	0.6 J	1.0	ug/L	EPA 8260B
1-Methylnaphthalene	1.48	0.10	ug/L	EPA 8270C



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2-Methylnaphthalene	8.37	0.10	ug/L	EPA 8270C
Acenaphthene	0.29	0.10	ug/L	EPA 8270C
Benzene	0.3 J	1.0	ug/L	EPA 8260B
Ethylbenzene	2.2	1.0	ug/L	EPA 8260B
Fluorene	0.22	0.10	ug/L	EPA 8270C
Isopropylbenzene	1.2	1.0	ug/L	EPA 8260B
Naphthalene	2.69	0.10	ug/L	EPA 8270C
TPH (C8-C40)	0.496	0.170	mg/L	FLPRO
Xylenes (Total)	0.9 J	1.0	ug/L	EPA 8260B



### ANALYTICAL REPORT

Sample ID: CEF-502-6S-01  
Lab #: B610164-01  
Prep. Method: EPA 5030B\_MS  
Analyzed: 12/04/06 By: jdb  
Anal. Method: EPA 8260B  
Anal. Batch: BA00076  
QC Batch: 6L04023

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

#### **Volatile Organic Compounds by GCMS**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
1,2,4-Trimethylbenzene	95-63-6	0.2 U	0.2	1.0	ug/L
1,3,5-Trimethylbenzene	108-67-8	0.2 U	0.2	1.0	ug/L
Benzene	71-43-2	0.2 U	0.2	1.0	ug/L
<b>Ethylbenzene</b>	100-41-4	<b>0.3 J</b>	0.3	1.0	ug/L
<b>Isopropylbenzene</b>	98-82-8	<b>0.4 J</b>	0.1	1.0	ug/L
Methyl-tert-Butyl Ether	1634-04-4	0.2 U	0.2	1.0	ug/L
Toluene	108-88-3	0.2 U	0.2	1.0	ug/L
Xylenes (Total)	NA	0.3 U	0.3	1.0	ug/L

<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
4-Bromofluorobenzene	460-00-4	48.8	50.0	98 %	75-120
Dibromofluoromethane	1868-53-7	52.3	50.0	105 %	85-115
Toluene-d8	2037-26-5	50.3	50.0	101 %	85-120



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**ANALYTICAL REPORT**

Sample ID: CEF-502-6S-01  
 Lab #: B610164-01  
 Prep. Method: EPA 3510C\_MS  
 Analyzed: 11/30/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00071  
 QC Batch: 6K27016

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610164  
 Matrix: Water  
 Unit: ug/L  
 Dilution Factor: 1

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>1-Methylnaphthalene</b>	90-12-0	<b>1.95</b>	0.02	0.10	ug/L
<b>2-Methylnaphthalene</b>	91-57-6	<b>3.75</b>	0.02	0.10	ug/L
<b>Acenaphthene</b>	83-32-9	<b>1.11</b>	0.02	0.10	ug/L
Acenaphthylene	208-96-8	0.01 U	0.01	0.10	ug/L
Anthracene	120-12-7	0.02 U	0.02	0.10	ug/L
Benzo(a)anthracene	56-55-3	0.01 U	0.01	0.10	ug/L
Benzo(a)pyrene	50-32-8	0.01 U	0.01	0.10	ug/L
Benzo(b)fluoranthene	205-99-2	0.03 U	0.03	0.10	ug/L
Benzo(g,h,i)perylene	191-24-2	0.03 U	0.03	0.10	ug/L
Benzo(k)fluoranthene	207-08-9	0.02 U	0.02	0.10	ug/L
Chrysene	218-01-9	0.02 U	0.02	0.10	ug/L
Dibenzo(a,h)anthracene	53-70-3	0.02 U	0.02	0.10	ug/L
Fluoranthene	206-44-0	0.01 U	0.01	0.10	ug/L
<b>Fluorene</b>	86-73-7	<b>2.16</b>	0.02	0.10	ug/L
Indeno(1,2,3-cd)pyrene	193-39-5	0.02 U	0.02	0.10	ug/L
<b>Naphthalene</b>	91-20-3	<b>0.43</b>	0.02	0.10	ug/L
<b>Phenanthrene</b>	85-01-8	<b>0.08 J</b>	0.02	0.10	ug/L
Pyrene	129-00-0	0.02 U	0.02	0.10	ug/L
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
p-Terphenyl	92-94-4	3.25	5.00	65 %	10-167



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### ANALYTICAL REPORT

Sample ID: CEF-502-6S-01  
Lab #: B610164-01  
Prep. Method: EPA 3510C  
Analyzed: 11/28/06 By: jbh  
Anal. Method: FLPRO  
Anal. Batch: BA00072  
QC Batch: 6K27003

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: mg/L  
Dilution Factor: 1

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	<b>0.330</b>	0.094	0.170	mg/L
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	0.0916	0.100	92 %	22-137
o-Terphenyl	84-15-1	0.0461	0.0500	92 %	33-133



### ANALYTICAL REPORT

Sample ID: CEF-502-7D-01  
Lab #: B610164-02  
Prep. Method: EPA 5030B\_MS  
Analyzed: 12/04/06 By: jdb  
Anal. Method: EPA 8260B  
Anal. Batch: BA00076  
QC Batch: 6L04023

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

#### **Volatile Organic Compounds by GCMS**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
1,2,4-Trimethylbenzene	95-63-6	0.2 U	0.2	1.0	ug/L
1,3,5-Trimethylbenzene	108-67-8	0.2 U	0.2	1.0	ug/L
Benzene	71-43-2	0.2 U	0.2	1.0	ug/L
Ethylbenzene	100-41-4	0.3 U	0.3	1.0	ug/L
Isopropylbenzene	98-82-8	0.1 U	0.1	1.0	ug/L
Methyl-tert-Butyl Ether	1634-04-4	0.2 U	0.2	1.0	ug/L
Toluene	108-88-3	0.2 U	0.2	1.0	ug/L
Xylenes (Total)	NA	0.3 U	0.3	1.0	ug/L

<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
4-Bromofluorobenzene	460-00-4	48.2	50.0	96 %	75-120
Dibromofluoromethane	1868-53-7	51.6	50.0	103 %	85-115
Toluene-d8	2037-26-5	50.5	50.0	101 %	85-120

**ANALYTICAL REPORT**

Sample ID: CEF-502-7D-01  
Lab #: B610164-02  
Prep. Method: EPA 3510C\_MS  
Analyzed: 11/30/06 By: jj  
Anal. Method: EPA 8270C  
Anal. Batch: BA00071  
QC Batch: 6K27016

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

**Semivolatile Organic Compounds by GCMS SIM**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
1-Methylnaphthalene	90-12-0	0.02 U	0.02	0.10	ug/L
2-Methylnaphthalene	91-57-6	0.02 U	0.02	0.10	ug/L
Acenaphthene	83-32-9	0.02 U	0.02	0.10	ug/L
Acenaphthylene	208-96-8	0.01 U	0.01	0.10	ug/L
Anthracene	120-12-7	0.02 U	0.02	0.10	ug/L
Benzo(a)anthracene	56-55-3	0.01 U	0.01	0.10	ug/L
Benzo(a)pyrene	50-32-8	0.01 U	0.01	0.10	ug/L
Benzo(b)fluoranthene	205-99-2	0.03 U	0.03	0.10	ug/L
Benzo(g,h,i)perylene	191-24-2	0.03 U	0.03	0.10	ug/L
Benzo(k)fluoranthene	207-08-9	0.02 U	0.02	0.10	ug/L
Chrysene	218-01-9	0.02 U	0.02	0.10	ug/L
Dibenzo(a,h)anthracene	53-70-3	0.02 U	0.02	0.10	ug/L
Fluoranthene	206-44-0	0.01 U	0.01	0.10	ug/L
Fluorene	86-73-7	0.02 U	0.02	0.10	ug/L
Indeno(1,2,3-cd)pyrene	193-39-5	0.02 U	0.02	0.10	ug/L
Naphthalene	91-20-3	0.02 U	0.02	0.10	ug/L
Phenanthrene	85-01-8	0.02 U	0.02	0.10	ug/L
Pyrene	129-00-0	0.02 U	0.02	0.10	ug/L

<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
p-Terphenyl	92-94-4	3.39	5.00	68 %	10-167



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### ANALYTICAL REPORT

Sample ID: CEF-502-7D-01  
Lab #: B610164-02  
Prep. Method: EPA 3510C  
Analyzed: 11/28/06 By: jbh  
Anal. Method: FLPRO  
Anal. Batch: BA00072  
QC Batch: 6K27003

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: mg/L  
Dilution Factor: 1

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	0.094 U	0.094	0.170	mg/L

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
n-Nonatriacontane	7194-86-7	0.101	0.100	101 %	22-137
o-Terphenyl	84-15-1	0.0446	0.0500	89 %	33-133



### ANALYTICAL REPORT

Sample ID: CEF-502-3S-01  
Lab #: B610164-03  
Prep. Method: EPA 5030B\_MS  
Analyzed: 12/04/06 By: jdb  
Anal. Method: EPA 8260B  
Anal. Batch: BA00076  
QC Batch: 6L04023

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

#### **Volatile Organic Compounds by GCMS**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
<b>1,2,4-Trimethylbenzene</b>	95-63-6	<b>0.5 J</b>	0.2	1.0	ug/L
1,3,5-Trimethylbenzene	108-67-8	0.2 U	0.2	1.0	ug/L
Benzene	71-43-2	0.2 U	0.2	1.0	ug/L
Ethylbenzene	100-41-4	0.3 U	0.3	1.0	ug/L
Isopropylbenzene	98-82-8	0.1 U	0.1	1.0	ug/L
Methyl-tert-Butyl Ether	1634-04-4	0.2 U	0.2	1.0	ug/L
Toluene	108-88-3	0.2 U	0.2	1.0	ug/L
Xylenes (Total)	NA	0.3 U	0.3	1.0	ug/L

<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
4-Bromofluorobenzene	460-00-4	49.0	50.0	98 %	75-120
Dibromofluoromethane	1868-53-7	51.0	50.0	102 %	85-115
Toluene-d8	2037-26-5	50.1	50.0	100 %	85-120

**ANALYTICAL REPORT**

Sample ID: CEF-502-3S-01  
Lab #: B610164-03  
Prep. Method: EPA 3510C\_MS  
Analyzed: 11/30/06 By: jj  
Anal. Method: EPA 8270C  
Anal. Batch: BA00071  
QC Batch: 6K27016

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>1-Methylnaphthalene</b>	90-12-0	<b>6.46</b>	0.02	0.10	ug/L
<b>2-Methylnaphthalene</b>	91-57-6	<b>4.92</b>	0.02	0.10	ug/L
<b>Acenaphthene</b>	83-32-9	<b>0.39</b>	0.02	0.10	ug/L
Acenaphthylene	208-96-8	0.01 U	0.01	0.10	ug/L
Anthracene	120-12-7	0.02 U	0.02	0.10	ug/L
Benzo(a)anthracene	56-55-3	0.01 U	0.01	0.10	ug/L
Benzo(a)pyrene	50-32-8	0.01 U	0.01	0.10	ug/L
Benzo(b)fluoranthene	205-99-2	0.03 U	0.03	0.10	ug/L
Benzo(g,h,i)perylene	191-24-2	0.03 U	0.03	0.10	ug/L
Benzo(k)fluoranthene	207-08-9	0.02 U	0.02	0.10	ug/L
Chrysene	218-01-9	0.02 U	0.02	0.10	ug/L
Dibenzo(a,h)anthracene	53-70-3	0.02 U	0.02	0.10	ug/L
Fluoranthene	206-44-0	0.01 U	0.01	0.10	ug/L
<b>Fluorene</b>	86-73-7	<b>0.58</b>	0.02	0.10	ug/L
Indeno(1,2,3-cd)pyrene	193-39-5	0.02 U	0.02	0.10	ug/L
<b>Naphthalene</b>	91-20-3	<b>0.92</b>	0.02	0.10	ug/L
<b>Phenanthrene</b>	85-01-8	<b>0.13</b>	0.02	0.10	ug/L
Pyrene	129-00-0	0.02 U	0.02	0.10	ug/L
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
p-Terphenyl	92-94-4	3.52	5.00	70 %	10-167



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### ANALYTICAL REPORT

Sample ID: CEF-502-3S-01  
Lab #: B610164-03  
Prep. Method: EPA 3510C  
Analyzed: 11/28/06 By: jbh  
Anal. Method: FLPRO  
Anal. Batch: BA00072  
QC Batch: 6K27003

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: mg/L  
Dilution Factor: 1

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	0.166 J	0.094	0.170	mg/L
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	0.0724	0.100	72 %	22-137
o-Terphenyl	84-15-1	0.0349	0.0500	70 %	33-133



### ANALYTICAL REPORT

Sample ID: CEF-502-85-01  
Lab #: B610164-04  
Prep. Method: EPA 5030B\_MS  
Analyzed: 12/04/06 By: jdb  
Anal. Method: EPA 8260B  
Anal. Batch: BA00076  
QC Batch: 6L04023

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

#### **Volatile Organic Compounds by GCMS**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
1,2,4-Trimethylbenzene	95-63-6	0.2 U	0.2	1.0	ug/L
1,3,5-Trimethylbenzene	108-67-8	0.2 U	0.2	1.0	ug/L
Benzene	71-43-2	0.2 U	0.2	1.0	ug/L
Ethylbenzene	100-41-4	0.3 U	0.3	1.0	ug/L
Isopropylbenzene	98-82-8	0.1 U	0.1	1.0	ug/L
Methyl-tert-Butyl Ether	1634-04-4	0.2 U	0.2	1.0	ug/L
Toluene	108-88-3	0.2 U	0.2	1.0	ug/L
Xylenes (Total)	NA	0.3 U	0.3	1.0	ug/L

<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
4-Bromofluorobenzene	460-00-4	49.9	50.0	100 %	75-120
Dibromofluoromethane	1868-53-7	49.1	50.0	98 %	85-115
Toluene-d8	2037-26-5	50.6	50.0	101 %	85-120



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### ANALYTICAL REPORT

Sample ID: CEF-502-85-01  
Lab #: B610164-04  
Prep. Method: EPA 3510C\_MS  
Analyzed: 11/30/06 By: jj  
Anal. Method: EPA 8270C  
Anal. Batch: BA00071  
QC Batch: 6K27016

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

#### **Semivolatile Organic Compounds by GCMS SIM**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
1-Methylnaphthalene	90-12-0	0.02 U	0.02	0.10	ug/L
2-Methylnaphthalene	91-57-6	0.02 U	0.02	0.10	ug/L
Acenaphthene	83-32-9	0.02 U	0.02	0.10	ug/L
Acenaphthylene	208-96-8	0.01 U	0.01	0.10	ug/L
Anthracene	120-12-7	0.02 U	0.02	0.10	ug/L
Benzo(a)anthracene	56-55-3	0.01 U	0.01	0.10	ug/L
Benzo(a)pyrene	50-32-8	0.01 U	0.01	0.10	ug/L
Benzo(b)fluoranthene	205-99-2	0.03 U	0.03	0.10	ug/L
Benzo(g,h,i)perylene	191-24-2	0.03 U	0.03	0.10	ug/L
Benzo(k)fluoranthene	207-08-9	0.02 U	0.02	0.10	ug/L
Chrysene	218-01-9	0.02 U	0.02	0.10	ug/L
Dibenzo(a,h)anthracene	53-70-3	0.02 U	0.02	0.10	ug/L
Fluoranthene	206-44-0	0.01 U	0.01	0.10	ug/L
Fluorene	86-73-7	0.02 U	0.02	0.10	ug/L
Indeno(1,2,3-cd)pyrene	193-39-5	0.02 U	0.02	0.10	ug/L
Naphthalene	91-20-3	0.02 U	0.02	0.10	ug/L
Phenanthrene	85-01-8	0.02 U	0.02	0.10	ug/L
Pyrene	129-00-0	0.02 U	0.02	0.10	ug/L

<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
p-Terphenyl	92-94-4	3.77	5.00	75 %	10-167



**ANALYTICAL REPORT**

Sample ID: CEF-502-85-01  
Lab #: B610164-04  
Prep. Method: EPA 3510C  
Analyzed: 11/28/06 By: jbh  
Anal. Method: FLPRO  
Anal. Batch: BA00072  
QC Batch: 6K27003

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: mg/L  
Dilution Factor: 1

**FL Petroleum Range Organics**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	0.094 U	0.094	0.170	mg/L

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
n-Nonatriacontane	7194-86-7	0.0906	0.100	91 %	22-137
o-Terphenyl	84-15-1	0.0435	0.0500	87 %	33-133



### ANALYTICAL REPORT

Sample ID: CEF-502-GW-DUP-01  
Lab #: B610164-05  
Prep. Method: EPA 5030B\_MS  
Analyzed: 12/04/06 By: jdb  
Anal. Method: EPA 8260B  
Anal. Batch: BA00076  
QC Batch: 6L04023

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

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#### Volatile Organic Compounds by GCMS

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1,2,4-Trimethylbenzene	95-63-6	0.2 U	0.2	1.0	ug/L
1,3,5-Trimethylbenzene	108-67-8	0.2 U	0.2	1.0	ug/L
Benzene	71-43-2	0.2 U	0.2	1.0	ug/L
Ethylbenzene	100-41-4	0.3 U	0.3	1.0	ug/L
Isopropylbenzene	98-82-8	0.1 U	0.1	1.0	ug/L
Methyl-tert-Butyl Ether	1634-04-4	0.2 U	0.2	1.0	ug/L
Toluene	108-88-3	0.2 U	0.2	1.0	ug/L
Xylenes (Total)	NA	0.3 U	0.3	1.0	ug/L

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
4-Bromofluorobenzene	460-00-4	49.6	50.0	99 %	75-120
Dibromofluoromethane	1868-53-7	52.0	50.0	104 %	85-115
Toluene-d8	2037-26-5	50.3	50.0	101 %	85-120

**ANALYTICAL REPORT**

Sample ID: CEF-502-GW-DUP-01  
Lab #: B610164-05  
Prep. Method: EPA 3510C\_MS  
Analyzed: 11/30/06 By: jj  
Anal. Method: EPA 8270C  
Anal. Batch: BA00071  
QC Batch: 6K27016

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

**Semivolatile Organic Compounds by GCMS SIM**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
1-Methylnaphthalene	90-12-0	0.02 U	0.02	0.10	ug/L
2-Methylnaphthalene	91-57-6	0.02 U	0.02	0.10	ug/L
Acenaphthene	83-32-9	0.02 U	0.02	0.10	ug/L
Acenaphthylene	208-96-8	0.01 U	0.01	0.10	ug/L
Anthracene	120-12-7	0.02 U	0.02	0.10	ug/L
Benzo(a)anthracene	56-55-3	0.01 U	0.01	0.10	ug/L
Benzo(a)pyrene	50-32-8	0.01 U	0.01	0.10	ug/L
Benzo(b)fluoranthene	205-99-2	0.03 U	0.03	0.10	ug/L
Benzo(g,h,i)perylene	191-24-2	0.03 U	0.03	0.10	ug/L
Benzo(k)fluoranthene	207-08-9	0.02 U	0.02	0.10	ug/L
Chrysene	218-01-9	0.02 U	0.02	0.10	ug/L
Dibenzo(a,h)anthracene	53-70-3	0.02 U	0.02	0.10	ug/L
Fluoranthene	206-44-0	0.01 U	0.01	0.10	ug/L
Fluorene	86-73-7	0.02 U	0.02	0.10	ug/L
Indeno(1,2,3-cd)pyrene	193-39-5	0.02 U	0.02	0.10	ug/L
Naphthalene	91-20-3	0.02 U	0.02	0.10	ug/L
Phenanthrene	85-01-8	0.02 U	0.02	0.10	ug/L
Pyrene	129-00-0	0.02 U	0.02	0.10	ug/L

<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
p-Terphenyl	92-94-4	3.73	5.00	75 %	10-167



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### ANALYTICAL REPORT

Sample ID: CEF-502-GW-DUP-01  
Lab #: B610164-05  
Prep. Method: EPA 3510C  
Analyzed: 11/28/06 By: jbh  
Anal. Method: FLPRO  
Anal. Batch: BA00072  
QC Batch: 6K27003

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: mg/L  
Dilution Factor: 1

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#### FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	0.094 U	0.094	0.170	mg/L

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
n-Nonatriacontane	7194-86-7	0.0812	0.100	81 %	22-137
o-Terphenyl	84-15-1	0.0422	0.0500	84 %	33-133



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### ANALYTICAL REPORT

Sample ID: CEF-502-15R-01  
Lab #: B610164-06  
Prep. Method: EPA 5030B\_MS  
Analyzed: 12/04/06 By: jdb  
Anal. Method: EPA 8260B  
Anal. Batch: BA00076  
QC Batch: 6L04023

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

#### **Volatile Organic Compounds by GCMS**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
<b>1,2,4-Trimethylbenzene</b>	95-63-6	<b>6.9</b>	0.2	1.0	ug/L
<b>1,3,5-Trimethylbenzene</b>	108-67-8	<b>2.8</b>	0.2	1.0	ug/L
Benzene	71-43-2	0.2 U	0.2	1.0	ug/L
<b>Ethylbenzene</b>	100-41-4	<b>2.5</b>	0.3	1.0	ug/L
<b>Isopropylbenzene</b>	98-82-8	<b>2.7</b>	0.1	1.0	ug/L
Methyl-tert-Butyl Ether	1634-04-4	0.2 U	0.2	1.0	ug/L
Toluene	108-88-3	0.2 U	0.2	1.0	ug/L
Xylenes (Total)	NA	0.3 U	0.3	1.0	ug/L

<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
4-Bromofluorobenzene	460-00-4	49.6	50.0	99 %	75-120
Dibromofluoromethane	1868-53-7	49.3	50.0	99 %	85-115
Toluene-d8	2037-26-5	50.7	50.0	101 %	85-120

**ANALYTICAL REPORT**

Sample ID: CEF-502-15R-01  
 Lab #: B610164-06  
 Prep. Method: EPA 3510C\_MS  
 Analyzed: 11/30/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00071  
 QC Batch: 6K27016

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610164  
 Matrix: Water  
 Unit: ug/L  
 Dilution Factor: 1

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>Acenaphthene</b>	83-32-9	<b>1.72</b>	0.02	0.10	ug/L
Acenaphthylene	208-96-8	0.01 U	0.01	0.10	ug/L
<b>Anthracene</b>	120-12-7	<b>0.07 J</b>	0.02	0.10	ug/L
Benzo(a)anthracene	56-55-3	0.01 U	0.01	0.10	ug/L
Benzo(a)pyrene	50-32-8	0.01 U	0.01	0.10	ug/L
Benzo(b)fluoranthene	205-99-2	0.03 U	0.03	0.10	ug/L
Benzo(g,h,i)perylene	191-24-2	0.03 U	0.03	0.10	ug/L
Benzo(k)fluoranthene	207-08-9	0.02 U	0.02	0.10	ug/L
Chrysene	218-01-9	0.02 U	0.02	0.10	ug/L
Dibenzo(a,h)anthracene	53-70-3	0.02 U	0.02	0.10	ug/L
Fluoranthene	206-44-0	0.01 U	0.01	0.10	ug/L
<b>Fluorene</b>	86-73-7	<b>2.78</b>	0.02	0.10	ug/L
Indeno(1,2,3-cd)pyrene	193-39-5	0.02 U	0.02	0.10	ug/L
<b>Naphthalene</b>	91-20-3	<b>11.2</b>	0.02	0.10	ug/L
<b>Phenanthrene</b>	85-01-8	<b>2.40</b>	0.02	0.10	ug/L
Pyrene	129-00-0	0.02 U	0.02	0.10	ug/L
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
p-Terphenyl	92-94-4	2.92	5.00	58 %	10-167



**ANALYTICAL REPORT**

Sample ID: CEF-502-15R-01  
Lab #: B610164-06  
Prep. Method: EPA 3510C  
Analyzed: 11/28/06 By: jbh  
Anal. Method: FLPRO  
Anal. Batch: BA00072  
QC Batch: 6K27003

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: mg/L  
Dilution Factor: 1

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**FL Petroleum Range Organics**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
<b>TPH (C8-C40)</b>	NA	<b>2.11</b>	0.094	0.170	mg/L
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	0.0837	0.100	84 %	22-137
o-Terphenyl	84-15-1	0.0471	0.0500	94 %	33-133



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### ANALYTICAL REPORT

Sample ID: CEF-502-15R-01  
Lab #: B610164-06RE1  
Prep. Method: EPA 3510C\_MS  
Analyzed: 11/30/06 By: jj  
Anal. Method: EPA 8270C  
Anal. Batch: BA00071  
QC Batch: 6K27016

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 10

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#### Semivolatile Organic Compounds by GCMS SIM

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	52.8 D	0.21	1.00	ug/L
2-Methylnaphthalene	91-57-6	110 D	0.21	1.00	ug/L



### ANALYTICAL REPORT

Sample ID: CEF-502-FB-01  
Lab #: B610164-07  
Prep. Method: EPA 5030B\_MS  
Analyzed: 12/04/06 By: jdb  
Anal. Method: EPA 8260B  
Anal. Batch: BA00076  
QC Batch: 6L04023

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

#### **Volatile Organic Compounds by GCMS**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
1,2,4-Trimethylbenzene	95-63-6	0.2 U	0.2	1.0	ug/L
1,3,5-Trimethylbenzene	108-67-8	0.2 U	0.2	1.0	ug/L
Benzene	71-43-2	0.2 U	0.2	1.0	ug/L
Ethylbenzene	100-41-4	0.3 U	0.3	1.0	ug/L
Isopropylbenzene	98-82-8	0.1 U	0.1	1.0	ug/L
Methyl-tert-Butyl Ether	1634-04-4	0.2 U	0.2	1.0	ug/L
Toluene	108-88-3	0.2 U	0.2	1.0	ug/L
Xylenes (Total)	NA	0.3 U	0.3	1.0	ug/L

<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
4-Bromofluorobenzene	460-00-4	48.5	50.0	97 %	75-120
Dibromofluoromethane	1868-53-7	49.0	50.0	98 %	85-115
Toluene-d8	2037-26-5	48.7	50.0	97 %	85-120



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### ANALYTICAL REPORT

Sample ID: CEF-502-FB-01  
Lab #: B610164-07  
Prep. Method: EPA 3510C\_MS  
Analyzed: 11/30/06 By: jj  
Anal. Method: EPA 8270C  
Anal. Batch: BA00071  
QC Batch: 6K27016

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

#### Semivolatile Organic Compounds by GCMS SIM

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.02 U	0.02	0.10	ug/L
2-Methylnaphthalene	91-57-6	0.02 U	0.02	0.10	ug/L
Acenaphthene	83-32-9	0.02 U	0.02	0.10	ug/L
Acenaphthylene	208-96-8	0.01 U	0.01	0.10	ug/L
Anthracene	120-12-7	0.02 U	0.02	0.10	ug/L
Benzo(a)anthracene	56-55-3	0.01 U	0.01	0.10	ug/L
Benzo(a)pyrene	50-32-8	0.01 U	0.01	0.10	ug/L
Benzo(b)fluoranthene	205-99-2	0.03 U	0.03	0.10	ug/L
Benzo(g,h,i)perylene	191-24-2	0.03 U	0.03	0.10	ug/L
Benzo(k)fluoranthene	207-08-9	0.02 U	0.02	0.10	ug/L
Chrysene	218-01-9	0.02 U	0.02	0.10	ug/L
Dibenzo(a,h)anthracene	53-70-3	0.02 U	0.02	0.10	ug/L
Fluoranthene	206-44-0	0.01 U	0.01	0.10	ug/L
Fluorene	86-73-7	0.02 U	0.02	0.10	ug/L
Indeno(1,2,3-cd)pyrene	193-39-5	0.02 U	0.02	0.10	ug/L
Naphthalene	91-20-3	0.02 U	0.02	0.10	ug/L
Phenanthrene	85-01-8	0.02 U	0.02	0.10	ug/L
Pyrene	129-00-0	0.02 U	0.02	0.10	ug/L

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
p-Terphenyl	92-94-4	3.42	5.00	68 %	10-167



**ANALYTICAL REPORT**

Sample ID: CEF-502-FB-01  
Lab #: B610164-07  
Prep. Method: EPA 3510C  
Analyzed: 11/28/06 By: jbh  
Anal. Method: FLPRO  
Anal. Batch: BA00072  
QC Batch: 6K27003

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: mg/L  
Dilution Factor: 1

**FL Petroleum Range Organics**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	0.094 U	0.094	0.170	mg/L

Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
n-Nonatriacontane	7194-86-7	0.0971	0.100	97 %	22-137
o-Terphenyl	84-15-1	0.0465	0.0500	93 %	33-133



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### ANALYTICAL REPORT

Sample ID: CEF-502-4S-01  
Lab #: B610164-08  
Prep. Method: EPA 5030B\_MS  
Analyzed: 12/04/06 By: jdb  
Anal. Method: EPA 8260B  
Anal. Batch: BA00076  
QC Batch: 6L04023

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: ug/L  
Dilution Factor: 1

#### Volatile Organic Compounds by GCMS

<u>Parameter</u>	<u>CAS Number</u>	<u>Analytical Results</u>	<u>MDL</u>	<u>MRL</u>	<u>Units</u>
<b>1,2,4-Trimethylbenzene</b>	95-63-6	<b>0.6 J</b>	0.2	1.0	ug/L
<b>1,3,5-Trimethylbenzene</b>	108-67-8	<b>0.6 J</b>	0.2	1.0	ug/L
<b>Benzene</b>	71-43-2	<b>0.3 J</b>	0.2	1.0	ug/L
<b>Ethylbenzene</b>	100-41-4	<b>2.2</b>	0.3	1.0	ug/L
<b>Isopropylbenzene</b>	98-82-8	<b>1.2</b>	0.1	1.0	ug/L
Methyl-tert-Butyl Ether	1634-04-4	0.2 U	0.2	1.0	ug/L
Toluene	108-88-3	0.2 U	0.2	1.0	ug/L
<b>Xylenes (Total)</b>	NA	<b>0.9 J</b>	0.3	1.0	ug/L

<u>Surrogate Recovery</u>		<u>Result</u>	<u>Spike Level</u>	<u>% Recovery</u>	<u>% Recovery Limits</u>
4-Bromofluorobenzene	460-00-4	48.5	50.0	97 %	75-120
Dibromofluoromethane	1868-53-7	48.3	50.0	97 %	85-115
Toluene-d8	2037-26-5	49.6	50.0	99 %	85-120

**ANALYTICAL REPORT**

Sample ID: CEF-502-4S-01  
 Lab #: B610164-08  
 Prep. Method: EPA 3510C\_MS  
 Analyzed: 11/30/06 By: jj  
 Anal. Method: EPA 8270C  
 Anal. Batch: BA00071  
 QC Batch: 6K27016

Project: NAS Cecil Field CTO #0025  
 Work Order #: B610164  
 Matrix: Water  
 Unit: ug/L  
 Dilution Factor: 1

**Semivolatile Organic Compounds by GCMS SIM**

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
<b>1-Methylnaphthalene</b>	90-12-0	<b>1.48</b>	0.02	0.10	ug/L
<b>2-Methylnaphthalene</b>	91-57-6	<b>8.37</b>	0.02	0.10	ug/L
<b>Acenaphthene</b>	83-32-9	<b>0.29</b>	0.02	0.10	ug/L
Acenaphthylene	208-96-8	0.01 U	0.01	0.10	ug/L
Anthracene	120-12-7	0.02 U	0.02	0.10	ug/L
Benzo(a)anthracene	56-55-3	0.01 U	0.01	0.10	ug/L
Benzo(a)pyrene	50-32-8	0.01 U	0.01	0.10	ug/L
Benzo(b)fluoranthene	205-99-2	0.03 U	0.03	0.10	ug/L
Benzo(g,h,i)perylene	191-24-2	0.03 U	0.03	0.10	ug/L
Benzo(k)fluoranthene	207-08-9	0.02 U	0.02	0.10	ug/L
Chrysene	218-01-9	0.02 U	0.02	0.10	ug/L
Dibenzo(a,h)anthracene	53-70-3	0.02 U	0.02	0.10	ug/L
Fluoranthene	206-44-0	0.01 U	0.01	0.10	ug/L
<b>Fluorene</b>	86-73-7	<b>0.22</b>	0.02	0.10	ug/L
Indeno(1,2,3-cd)pyrene	193-39-5	0.02 U	0.02	0.10	ug/L
<b>Naphthalene</b>	91-20-3	<b>2.69</b>	0.02	0.10	ug/L
Phenanthrene	85-01-8	0.02 U	0.02	0.10	ug/L
Pyrene	129-00-0	0.02 U	0.02	0.10	ug/L
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
p-Terphenyl	92-94-4	2.65	5.00	53 %	10-167



**ANALYTICAL REPORT**

Sample ID: CEF-502-4S-01  
Lab #: B610164-08  
Prep. Method: EPA 3510C  
Analyzed: 11/28/06 By: jbh  
Anal. Method: FLPRO  
Anal. Batch: BA00072  
QC Batch: 6K27003

Project: NAS Cecil Field CTO #0025  
Work Order #: B610164  
Matrix: Water  
Unit: mg/L  
Dilution Factor: 1

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**FL Petroleum Range Organics**

<b>Parameter</b>	<b>CAS Number</b>	<b>Analytical Results</b>	<b>MDL</b>	<b>MRL</b>	<b>Units</b>
<b>TPH (C8-C40)</b>	NA	<b>0.496</b>	0.094	0.170	mg/L
<b>Surrogate Recovery</b>		<b>Result</b>	<b>Spike Level</b>	<b>% Recovery</b>	<b>% Recovery Limits</b>
n-Nonatriacontane	7194-86-7	0.0964	0.100	96 %	22-137
o-Terphenyl	84-15-1	0.0476	0.0500	95 %	33-133

**QUALITY CONTROL**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
<b>Volatile Organic Compounds by GCMS - Quality Control</b>										
<i>Batch 6L04023 - EPA 5030B_MS</i>										
<b>Blank (6L04023-BLK1)</b>				Prepared: 12/04/2006 09:00 Analyzed: 12/04/2006 11:31						
Methyl-tert-Butyl Ether	0.2 U	1.0	ug/L							
Benzene	0.2 U	1.0	ug/L							
Toluene	0.2 U	1.0	ug/L							
Ethylbenzene	0.3 U	1.0	ug/L							
Isopropylbenzene	0.1 U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.2 U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.2 U	1.0	ug/L							
Xylenes (Total)	0.3 U	1.0	ug/L							
<i>Surrogate: Dibromofluoromethane</i>	52.9		ug/L	50.0		106	85-115			
<i>Surrogate: Toluene-d8</i>	50.2		ug/L	50.0		100	85-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	49.1		ug/L	50.0		98	75-120			
<b>Blank (6L04023-BLK2)</b>				Prepared: 12/04/2006 09:00 Analyzed: 12/05/2006 00:50						
Methyl-tert-Butyl Ether	0.2 U	1.0	ug/L							
Benzene	0.2 U	1.0	ug/L							
Toluene	0.2 U	1.0	ug/L							
Ethylbenzene	0.3 U	1.0	ug/L							
Isopropylbenzene	0.1 U	1.0	ug/L							
1,3,5-Trimethylbenzene	0.2 U	1.0	ug/L							
1,2,4-Trimethylbenzene	0.2 U	1.0	ug/L							
Xylenes (Total)	0.3 U	1.0	ug/L							
<i>Surrogate: Dibromofluoromethane</i>	48.0		ug/L	50.0		96	85-115			
<i>Surrogate: Toluene-d8</i>	49.9		ug/L	50.0		100	85-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	49.2		ug/L	50.0		98	75-120			
<b>LCS (6L04023-BS1)</b>				Prepared: 12/04/2006 09:00 Analyzed: 12/04/2006 12:02						
Methyl-tert-Butyl Ether	19.7	1.0	ug/L	20.0		99	39-98			
Benzene	19.3	1.0	ug/L	20.0		96	80-120			
Toluene	17.0	1.0	ug/L	20.0		85	75-120			
Ethylbenzene	16.5	1.0	ug/L	20.0		82	75-112			
Isopropylbenzene	19.3	1.0	ug/L	20.0		96	75-125			
1,3,5-Trimethylbenzene	16.9	1.0	ug/L	20.0		85	75-122			
1,2,4-Trimethylbenzene	17.5	1.0	ug/L	20.0		88	75-124			
Xylenes (Total)	52.1	1.0	ug/L				0-200			
<b>Matrix Spike (6L04023-MS1)</b>				<b>Source: B610107-08</b>		Prepared: 12/04/2006 09:00 Analyzed: 12/04/2006 12:33				
Methyl-tert-Butyl Ether	19.7	1.0	ug/L	20.0	0.2 U	99	0-200			
Benzene	19.6	1.0	ug/L	20.0	0.2 U	98	64-138			
Toluene	17.6	1.0	ug/L	20.0	0.2 U	88	72-124			
Ethylbenzene	18.0	1.0	ug/L	20.0	0.3 U	90	0-200			
Isopropylbenzene	20.0	1.0	ug/L	20.0	0.1 U	100	0-200			
1,3,5-Trimethylbenzene	17.8	1.0	ug/L	20.0	0.2 U	89	0-200			
1,2,4-Trimethylbenzene	18.3	1.0	ug/L	20.0	0.2 U	92	0-200			
Xylenes (Total)	53.7	1.0	ug/L		0.810		0-200			
<b>Matrix Spike Dup (6L04023-MSD1)</b>				<b>Source: B610107-08</b>		Prepared: 12/04/2006 09:00 Analyzed: 12/04/2006 13:04				
Methyl-tert-Butyl Ether	20.9	1.0	ug/L	20.0	0.2 U	105	0-200	6	23	



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**QUALITY CONTROL**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
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**Volatile Organic Compounds by GCMS - Quality Control**

Batch 6L04023 - EPA 5030B\_MS

Matrix Spike Dup (6L04023-MSD1) Continued Source: B610107-08 Prepared: 12/04/2006 09:00 Analyzed: 12/04/2006 13:04

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
Benzene	19.0	1.0	ug/L	20.0	0.2 U	95	64-138	3	22	
Toluene	17.6	1.0	ug/L	20.0	0.2 U	88	72-124	0.2	24	
Ethylbenzene	18.0	1.0	ug/L	20.0	0.3 U	90	0-200	0.1	25	
Isopropylbenzene	20.5	1.0	ug/L	20.0	0.1 U	102	0-200	3	25	
1,3,5-Trimethylbenzene	18.5	1.0	ug/L	20.0	0.2 U	93	0-200	4	26	
1,2,4-Trimethylbenzene	18.7	1.0	ug/L	20.0	0.2 U	94	0-200	2	26	
Xylenes (Total)	55.0	1.0	ug/L		0.810		0-200	2	200	

**Semivolatile Organic Compounds by GCMS SIM - Quality Control**

Batch 6K27016 - EPA 3510C\_MS

Blank (6K27016-BLK1) Prepared: 11/27/2006 13:47 Analyzed: 11/30/2006 10:35

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
Naphthalene	0.02 U	0.10	ug/L							
2-Methylnaphthalene	0.02 U	0.10	ug/L							
1-Methylnaphthalene	0.02 U	0.10	ug/L							
Acenaphthylene	0.01 U	0.10	ug/L							
Acenaphthene	0.02 U	0.10	ug/L							
Benzo(a)anthracene	0.01 U	0.10	ug/L							
Benzo(b)fluoranthene	0.03 U	0.10	ug/L							
Benzo(k)fluoranthene	0.02 U	0.10	ug/L							
Fluorene	0.02 U	0.10	ug/L							
Benzo(g,h,i)perylene	0.03 U	0.10	ug/L							
Benzo(a)pyrene	0.01 U	0.10	ug/L							
Phenanthrene	0.02 U	0.10	ug/L							
Anthracene	0.02 U	0.10	ug/L							
Fluoranthene	0.01 U	0.10	ug/L							
Pyrene	0.02 U	0.10	ug/L							
Chrysene	0.02 U	0.10	ug/L							
Dibenzo(a,h)anthracene	0.02 U	0.10	ug/L							
Indeno(1,2,3-cd)pyrene	0.02 U	0.10	ug/L							

Surrogate: p-Terphenyl 4.19 ug/L 5.00 84 10-167

LCS (6K27016-BS1) Prepared: 11/27/2006 13:47 Analyzed: 11/30/2006 10:53

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
Naphthalene	1.21	0.10	ug/L	2.00		60	33-100			
2-Methylnaphthalene	1.23	0.10	ug/L	2.00		62	36-98			
1-Methylnaphthalene	1.20	0.10	ug/L	2.00		60	34-95			
Acenaphthylene	1.23	0.10	ug/L	2.00		62	37-103			
Acenaphthene	1.23	0.10	ug/L	2.00		62	36-100			
Benzo(a)anthracene	1.38	0.10	ug/L	2.00		69	40-108			
Benzo(b)fluoranthene	1.33	0.10	ug/L	2.00		66	0-200			
Benzo(k)fluoranthene	1.41	0.10	ug/L	2.00		70	0-200			
Fluorene	1.27	0.10	ug/L	2.00		64	39-104			
Benzo(g,h,i)perylene	1.43	0.10	ug/L	2.00		72	19-118			
Benzo(a)pyrene	1.34	0.10	ug/L	2.00		67	33-108			
Phenanthrene	1.28	0.10	ug/L	2.00		64	38-104			
Anthracene	1.31	0.10	ug/L	2.00		66	36-109			

**QUALITY CONTROL**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
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**Semivolatile Organic Compounds by GCMS SIM - Quality Control**

Batch 6K27016 - EPA 3510C\_MS

**LCS (6K27016-BS1) Continued**

Prepared: 11/27/2006 13:47 Analyzed: 11/30/2006 10:53

Fluoranthene	1.55	0.10	ug/L	2.00		78	40-119			
Pyrene	1.53	0.10	ug/L	2.00		76	38-116			
Chrysene	1.35	0.10	ug/L	2.00		68	39-112			
Dibenzo(a,h)anthracene	1.72	0.10	ug/L	2.00		86	30-109			
Indeno(1,2,3-cd)pyrene	1.58	0.10	ug/L	2.00		79	33-112			

Surrogate: *p*-Terphenyl 4.09 ug/L 5.00 82 10-167

**Matrix Spike (6K27016-MS1)**

Source: B610161-02

Prepared: 11/27/2006 13:47 Analyzed: 11/30/2006 11:10

Naphthalene	1.31	0.10	ug/L	2.00	0.02 U	66	33-100			
2-Methylnaphthalene	1.32	0.10	ug/L	2.00	0.02 U	66	36-98			
1-Methylnaphthalene	1.28	0.10	ug/L	2.00	0.02 U	64	34-95			
Acenaphthylene	1.29	0.10	ug/L	2.00	0.01 U	64	37-103			
Acenaphthene	1.29	0.10	ug/L	2.00	0.02 U	64	36-100			
Benzo(a)anthracene	1.37	0.10	ug/L	2.00	0.01 U	68	40-108			
Benzo(b)fluoranthene	1.39	0.10	ug/L	2.00	0.03 U	70	0-200			
Benzo(k)fluoranthene	1.43	0.10	ug/L	2.00	0.02 U	72	0-200			
Fluorene	1.31	0.10	ug/L	2.00	0.02 U	66	39-104			
Benzo(g,h,i)perylene	1.44	0.10	ug/L	2.00	0.03 U	72	19-118			
Benzo(a)pyrene	1.37	0.10	ug/L	2.00	0.01 U	68	33-108			
Phenanthrene	1.32	0.10	ug/L	2.00	0.02 U	66	38-104			
Anthracene	1.34	0.10	ug/L	2.00	0.02 U	67	36-109			
Fluoranthene	1.60	0.10	ug/L	2.00	0.01 U	80	40-119			
Pyrene	1.57	0.10	ug/L	2.00	0.02 U	78	38-116			
Chrysene	1.39	0.10	ug/L	2.00	0.02 U	70	39-112			
Dibenzo(a,h)anthracene	1.74	0.10	ug/L	2.00	0.02 U	87	30-109			
Indeno(1,2,3-cd)pyrene	1.60	0.10	ug/L	2.00	0.02 U	80	33-112			

Surrogate: *p*-Terphenyl 4.01 ug/L 5.00 80 10-167

**Matrix Spike Dup (6K27016-MSD1)**

Source: B610161-02

Prepared: 11/27/2006 13:47 Analyzed: 11/30/2006 11:28

Naphthalene	1.26	0.10	ug/L	2.00	0.02 U	63	33-100	4	27	
2-Methylnaphthalene	1.27	0.10	ug/L	2.00	0.02 U	64	36-98	4	33	
1-Methylnaphthalene	1.24	0.10	ug/L	2.00	0.02 U	62	34-95	3	29	
Acenaphthylene	1.24	0.10	ug/L	2.00	0.01 U	62	37-103	4	24	
Acenaphthene	1.25	0.10	ug/L	2.00	0.02 U	62	36-100	3	23	
Benzo(a)anthracene	1.33	0.10	ug/L	2.00	0.01 U	66	40-108	3	22	
Benzo(b)fluoranthene	1.33	0.10	ug/L	2.00	0.03 U	66	0-200	4	200	
Benzo(k)fluoranthene	1.34	0.10	ug/L	2.00	0.02 U	67	0-200	6	200	
Fluorene	1.27	0.10	ug/L	2.00	0.02 U	64	39-104	3	22	
Benzo(g,h,i)perylene	1.38	0.10	ug/L	2.00	0.03 U	69	19-118	4	27	
Benzo(a)pyrene	1.30	0.10	ug/L	2.00	0.01 U	65	33-108	5	23	
Phenanthrene	1.27	0.10	ug/L	2.00	0.02 U	64	38-104	4	22	
Anthracene	1.29	0.10	ug/L	2.00	0.02 U	64	36-109	4	20	
Fluoranthene	1.51	0.10	ug/L	2.00	0.01 U	76	40-119	6	20	
Pyrene	1.48	0.10	ug/L	2.00	0.02 U	74	38-116	6	22	
Chrysene	1.32	0.10	ug/L	2.00	0.02 U	66	39-112	5	21	
Dibenzo(a,h)anthracene	1.68	0.10	ug/L	2.00	0.02 U	84	30-109	4	32	



**QUALITY CONTROL**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sample Notes
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**Semivolatile Organic Compounds by GCMS SIM - Quality Control**

*Batch 6K27016 - EPA 3510C\_MS*

**Matrix Spike Dup (6K27016-MSD1) Continued**      **Source: B610161-02**      Prepared: 11/27/2006 13:47 Analyzed: 11/30/2006 11:28

Indeno(1,2,3-cd)pyrene	1.54	0.10	ug/L	2.00	0.02 U	77	33-112	4	22	
<i>Surrogate: p-Terphenyl</i>	<i>4.03</i>		<i>ug/L</i>	<i>5.00</i>		<i>81</i>	<i>10-167</i>			

**FL Petroleum Range Organics - Quality Control**

*Batch 6K27003 - EPA 3510C*

**Blank (6K27003-BLK1)**      Prepared: 11/27/2006 07:11 Analyzed: 11/27/2006 14:43

TPH (C8-C40)	0.094 U	0.170	mg/L							
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**LCS (6K27003-BS1)**      Prepared: 11/27/2006 07:11 Analyzed: 11/27/2006 15:06

TPH (C8-C40)	1.36	0.170	mg/L	1.70		80	46-126			
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**Matrix Spike (6K27003-MS1)**      **Source: B610184-01**      Prepared: 11/27/2006 07:11 Analyzed: 11/27/2006 15:28

TPH (C8-C40)	1.37	0.170	mg/L	1.70	0.094 U	80	48-118			
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**Matrix Spike Dup (6K27003-MSD1)**      **Source: B610184-01**      Prepared: 11/27/2006 07:11 Analyzed: 11/27/2006 15:50

TPH (C8-C40)	1.44	0.170	mg/L	1.70	0.094 U	85	48-118	5	30	
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**NOTES AND DEFINITIONS**

- D Data reported from a dilution
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- U Analyte included in the analysis, but not detected

**LABORATORY CERTIFICATION SUMMARY**

<b>Analysis</b>	<b>Matrix</b>	<b>Cert ID</b>	<b>Cert Number</b>
8260B Extended	Water	NELAC	E82277
8270C PAH SIM	Water	NELAC	E82277
FLPRO	Water	NELAC	E82277

B610164 + B610165  
PAGE 1 OF 2

2486

CHAIN OF CUSTODY

TETRA TECH NUS, INC.

PROJECT NO:	FACILITY:	PROJECT MANAGER:	PHONE NUMBER:	LABORATORY NAME AND CONTACT:
SAMPLERS (SIGNATURE):	Building 502	DAVE STEFEN	904-636-6125	ENCO
Kara J. Wumble		FIELD OPERATIONS LEADER:	PHONE NUMBER:	ADDRESS:
M. J. [Signature]		TERRY COTTENOUR	904-636-6125	
[Signature]		CARRIER/BILL NUMBER:		CITY/STATE:
		Hand - de Inverna		JACKSONVILLE, FL

DATE	TIME	LOCATION ID	SAMPLE ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, OC, ETC.)	COLLECTION METHOD	COMP (G)	GRAB (G)	NO. OF CONTAINERS	CONTAINER TYPE	PRESERVATIVE USED	COMMENTS		
11/20	1500	CEF-502-6S-01				GW	G	6	1	3	PLASTIC (P) or GLASS (G)				
11/20	1544	CEF-502-6TD-01				GW	G	6	1	3	PLASTIC (P) or GLASS (G)				
11/20	1640	CEF-502-3S-01				GW	G	6	1	3	PLASTIC (P) or GLASS (G)				
11/20	1600	CEF-502-S80S-0S				SO	G	1	1	1	PLASTIC (P) or GLASS (G)				
11/20	1550	CEF-502-S801-0S				SO	G	1	1	1	PLASTIC (P) or GLASS (G)				
11/21	0935	CEF-502-8S-01				GW	G	6	1	3	PLASTIC (P) or GLASS (G)				
11/21	0956	CEF-502-GW-DUP-01				GW	G	6	1	3	PLASTIC (P) or GLASS (G)				
11/21	1045	CEF-502-1SR-01				GW	G	6	1	3	PLASTIC (P) or GLASS (G)				
11/21	1255	CEF-502-S207-0S				SO	G	1	1	1	PLASTIC (P) or GLASS (G)				
11/21	1305	CEF-502-S808-0S				SO	G	1	1	1	PLASTIC (P) or GLASS (G)				
11/21	1344	CEF-502-S809-03				SO	G	1	1	1	PLASTIC (P) or GLASS (G)				
11/21	1353	CEF-502-S810-0S				SO	G	1	1	1	PLASTIC (P) or GLASS (G)				
11/21	1000	CEF-502-S8-DU-01				SO	G	1	1	1	PLASTIC (P) or GLASS (G)				
1. RELINQUISHED BY: [Signature]											DATE: 11/21/06	TIME: 1620	1. RECEIVED BY: [Signature]	DATE: 11/21/06	TIME: 1620
2. RELINQUISHED BY:											DATE:	TIME:	2. RECEIVED BY:	DATE:	TIME:
3. RELINQUISHED BY:											DATE:	TIME:	3. RECEIVED BY:	DATE:	TIME:



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B610164 + B610165  
PAGE 2 OF 2

2487

NUMBER

CHAIN OF CUSTODY

TETRA TECH NUS, INC.



DATE	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SQ, SW, SD, QC, ETC)	COLLECTION METHOD	GRAB (G)	COMP (C)	No. OF CONTAINERS	CONTAINER TYPE	PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	COMMENTS
11/21	0855	CEF-502-SB03-05				SO	G	1	1	1	SW 846-8210	G	None	
11/21	1045	CEF-502-SB04-05				SO	G	1	1	1	SW 846-8210	G	None	
11/21	1055	CEF-502-SB06-05				SO	G	1	1	1	SW 846-8210	G	None	
11/21	0840	CEF-502-SB02-03				GW	G	1	1	1	SW 846-8210	G	None	
11/21	1513	CEF-502-PB01				GW	G	4	1	2	SW 846-8210	G	None	low recovery
11/21	1145	CEF-502-45-n1				GW	G	1	1	1	SW 846-8210	G	None	

DATE	TIME	1. RECEIVED BY	DATE	TIME
11-31-06	1620	[Signature]	11/21/06	1620

PROJECT MANAGER: Dave Steffen  
 FIELD OPERATIONS LEADER: Ryan Cotnam  
 CARRIER/BILL NUMBER: hand-delivered  
 LABORATORY NAME AND CONTACT: ENCO  
 ADDRESS: Jacksonville, FL  
 CITY, STATE: Jacksonville, FL

402R FORM NO. TINUS-001

PINK (FILE COPY)

YELLOW (FIELD COPY)

WHITE (ACCOMPANIES SAMPLE)

Appendix M  
Dig and Haul Package, Building 290A, Tank G290A  
(Tetra Tech NUS, Inc., November 2007)

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**TETRA TECH NUS, INC.**

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Document Tracking Number 07JAX0052

November 16, 2007

Project Number 112GN4248

Mr. David Grabka  
Florida Department of Environmental Protection  
Twin Towers Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Reference: CLEAN III Contract Number N62467-94-D-0888  
Contract Task Order 0248

Subject: Dig and Haul Package, Building 290A, Tank G290A  
Naval Air Station Cecil Field  
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Dig and Haul Package for the subject site. This package has been prepared for the United States Navy, Naval Facilities Engineering Command Southeast (NAVFAC SE) under Contract Task Order 0248 for the Comprehensive Long-term Environmental Action Navy (CLEAN) III Contract Number N62467-94-D-0888.

**SITE BACKGROUND**

Tank G290-A was an aboveground storage tank (AST) located immediately north of Building 290A and southeast of the intersection of the north-south and east-west runways at Naval Air Station (NAS) Cecil Field. Building 290A houses a standby generator for Building 290. Tank G290-A, with a capacity of 250 gallons, was installed in 1995 and was in compliance with State of Florida tank regulations. Tank G290-A replaced Tank G290-U, which was an underground storage tank located west of Building 290A. Tank G290-U was removed in November 1995 by Innovative Services International and received a clean closure. According to Mr. Roy Craigue of Jacksonville Aviation Authority (JAA), Tank G290-A was removed in June 2007 by the JAA Maintenance Department. The concrete secondary containment pad remained in place.

A Contamination Assessment Plan was prepared by ABB Environmental Services, Inc. (ABB-ES) in November 1996 for the assessment of soil and groundwater at Tank G290-A. Confirmatory soil screening was conducted by ABB-ES in 1998. Three soil borings were installed around the AST, and soil samples were collected for screening with an organic vapor analyzer (OVA). The results of that investigation indicated that contaminated soil was not present at the site. Because the tanks could not be taken out of service at that time, it was agreed that supplemental confirmatory sampling would be conducted when the tanks were taken out of service or transferred to confirm that no releases had occurred subsequent to the original investigation.

A field investigation was conducted by TtNUS between June 7 and 16, 2000. The Sampling and Analysis Plan (SAP) specified that existing monitoring well CEF-290-2S be sampled as part of the field investigation. However, when TtNUS personnel arrived at the site to conduct the investigation, the



monitoring well could not be located. Therefore, a replacement monitoring well was installed and sampled in accordance with the SAP. Replacement well CEF-290A-2SR was installed on September 12, 2000, and sampled on September 26, 2000. The soil investigation indicated that soil boring B290-A-SB-005 (SB-005), located directly under the secondary containment drain, exhibited an OVA equipped with a flame ionization detector (FID) response of approximately 100 parts per million (ppm) at the 0- to 1-foot interval. The 1- to 3- and 3- to 5-foot sample intervals both exhibited responses of 20 ppm. There was no observed OVA-FID response for soil borings B290-A-SB-001, B290-A-SB-002, B290-A-SB-003, and B290-A-SB-004. Laboratory analytical results from the groundwater sample collected from this well indicated that concentrations of contaminants of concern were less than detection limits, and the detection limits were less than the Groundwater Cleanup Target Levels specified in Chapter 62-777, Florida Administrative Code (FAC). Based on the findings of this investigation and of the previous investigation conducted by ABB-ES, TtNUS recommended No Further Action for Tank Site G290-A.

A comment letter from the Florida Department of Environmental Protection (FDEP) dated April 5, 2002, stated that the Department could not concur with the recommendation for No Further Action because an elevated OVA-FID response was detected in a surface soil sample collected from under the secondary containment drain, possibly indicating petroleum-impacted soil. The letter requested that a soil sample be collected from that location and analyzed for Gasoline Analytical Group (GAG) and Kerosene Analytical Group (KAG) parameters as listed in Chapter 62-770, FAC, to determine if there has been a petroleum release requiring further assessment.

On April 12, 2002, TtNUS collected a soil sample from under the secondary containment drain, at the approximate location and depth interval of the elevated OVA-FID response [SB-005 at 0 to 1 foot below ground surface (bgs)]. The sample was analyzed for GAG and KAG constituents as defined by Chapter 62-770, FAC. The laboratory analytical results indicated that the total recoverable petroleum hydrocarbon (TRPH) concentration exceeded the Soil Cleanup Target Level (SCTL) specified in Chapter 62-777, FAC. In addition, detection limits for several polynuclear aromatic hydrocarbons (PAHs) were elevated due to matrix interference. TtNUS recommended that a source removal be conducted to remove petroleum-impacted soil from the site. Prior to initiating the source removal, additional soil samples were recommended to delineate the extent of contaminated soil and to define the limits of the excavation. An FDEP comment letter, dated March 10, 2004, stated that the Department concurred that additional delineation to determine the extent of contaminated soil should be conducted prior to initiating source removal.

On March 22, 2005, TtNUS collected three additional soil samples in the vicinity of Tank G290-A to delineate the extent of contaminated soil. Sample CEF-B290A-SB-006-01 was collected approximately 5 feet due north of CEF-B290A-SB-005. Additionally, samples CEF-B290A-SB-001-01 and CEF-B290A-SB-002-01 were collected west and east, respectively, of CEF-B290A-SB-005. The samples were collected at the 0- to 1-foot depth interval. The samples were analyzed for PAHs using United States Environmental Protection Agency Method SW-846 8310 and TRPH using the Florida Petroleum Range Organics method. The laboratory analytical results indicated that PAH and TRPH concentrations for all three locations were less than the SCTLs specified in Chapter 62-777, FAC. TtNUS recommended that a source removal be conducted to remove petroleum-impacted soil from an approximate 10-foot by 10-foot area as delineated by the locations of the three soil samples collected in 2005 (CEF-B290A-SB-001-01, CEF-B290A-SB-002-01, and CEF-B290A-SB-006-01) as well as soil sampling locations previously screened by OVA-FID on June 16, 2000 (CEF-B290A-SB-003 and CEF-B290A-SB-004). The Supplemental Soil Assessment Letter Report stated that the area should be excavated to the top of the water table and replaced with clean fill material.

On September 14, 2007, TtNUS conducted confirmatory soil sampling in the vicinity of former Tank G290-A to delineate the southern boundary of the proposed soil removal area. Sample CEF-290A-SB007 was collected from the area adjacent to the northern edge of the concrete secondary containment at 2 feet bgs and analyzed for PAHs and TRPHs. Naphthalene was detected with a concentration of 0.0021 milligram per kilogram (mg/kg), less than its residential SCTL of 55 mg/kg. All of



the other target analytes were not detected in soil sample CEF-290A-SB-007. Additionally, a soil boring was advanced at the location of the previously collected sample SB-005 to confirm the depth of observed contamination. Samples were collected from depths of 2 and 4 feet bgs and submitted for laboratory analyses of PAHs and TRPHs. In the sample collected from the 2-foot depth, naphthalene was detected at a concentration of 0.0019 mg/kg, less than its residential SCTL of 55 mg/kg. In the sample collected from the 4-foot depth, TRPH was detected at a concentration of 8.2 mg/kg less than its residential SCTL of 460 mg/kg. Based on the September 2007 sampling results, TtNUS recommends that the proposed excavation area include the area north of the secondary containment basin as shown on Figure 1 to a depth of 2 feet bgs.

To obtain site closure, post-excavation groundwater monitoring will be necessary in accordance with Chapter 62-770.750, FAC. TtNUS will supervise the installation of a shallow monitoring well at soil boring location SB005 and subsequently collect a groundwater sample for fixed base laboratory analysis after the dig and haul to confirm that naphthalene and TRPH have not leached into the groundwater.

### **GUIDANCE NOTES**

This information is provided for general guidance purposes only. The approximate area of excavation is shown on Figure 1. The actual extent of excavation will be defined in the field by TtNUS with white spraydown paint (or equivalent) prior to the execution of the removal action.

The Remedial Action Contractor shall be responsible for the following:

- The schedule and methods of excavation.
- All aspects of work site health and safety.
- Identification and avoidance of all aboveground and underground utilities or other manmade structures.
- Waste characterization, transport (both on and off site), and disposal of all excavated soil.
- Notification of TtNUS and the Navy if observations indicate that contaminants may extend beyond the planned lateral or vertical limits of the excavation.
- Depth of excavation is 2 feet bgs. Except where necessary for avoidance of structures or utilities or where otherwise specified by TtNUS, the excavations should extend to the depths presented in this Dig and Haul Package.
- Excavated soil shall be stockpiled on and covered with heavy-duty polyethylene sheeting at the site. This shall be done in a manner to avoid the potential for contaminating surrounding soil or surface water. Alternately, soils may be stockpiled in properly covered roll-off containers.
- Stockpiling and combining of materials from different sites is permitted with prior approval of the NAS Cecil Field Base Realignment and Closure Cleanup Team, if similar types and concentrations of contaminants are involved and contaminants were generated by similar processes.
- Materials used to backfill the excavation shall be from an uncontaminated source and be capable of supporting the same type of vegetation as the soil removed. The ground surface shall be restored to a similar or better condition than existed prior to excavation.



If you have any questions regarding the information presented in this document, please contact me by phone at (904) 730-4669, extension 213, or via e-mail at Mark.Peterson@TetraTech.com.

Sincerely,

Mark A. Peterson, P.G.  
Florida License Number PG-0001852

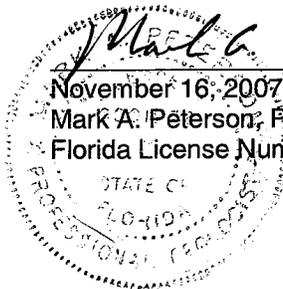
Enclosures (1)

- c: M. Davidson, NAVFAC SE
- M. Halil, CH2M Hill
- J. Logan, TtNUS
- R. Simcik, TtNUS (Bookcase File)
- ~~M. Donnet, TtNUS (Cool DMS)~~
- M. Perry, TtNUS (unbound)
- M. Speranza, TtNUS (letter only)
- D. Humbert, TtNUS (letter only)
- J. Johnson, TtNUS (Information Repository)
- CTO 0248 Project File

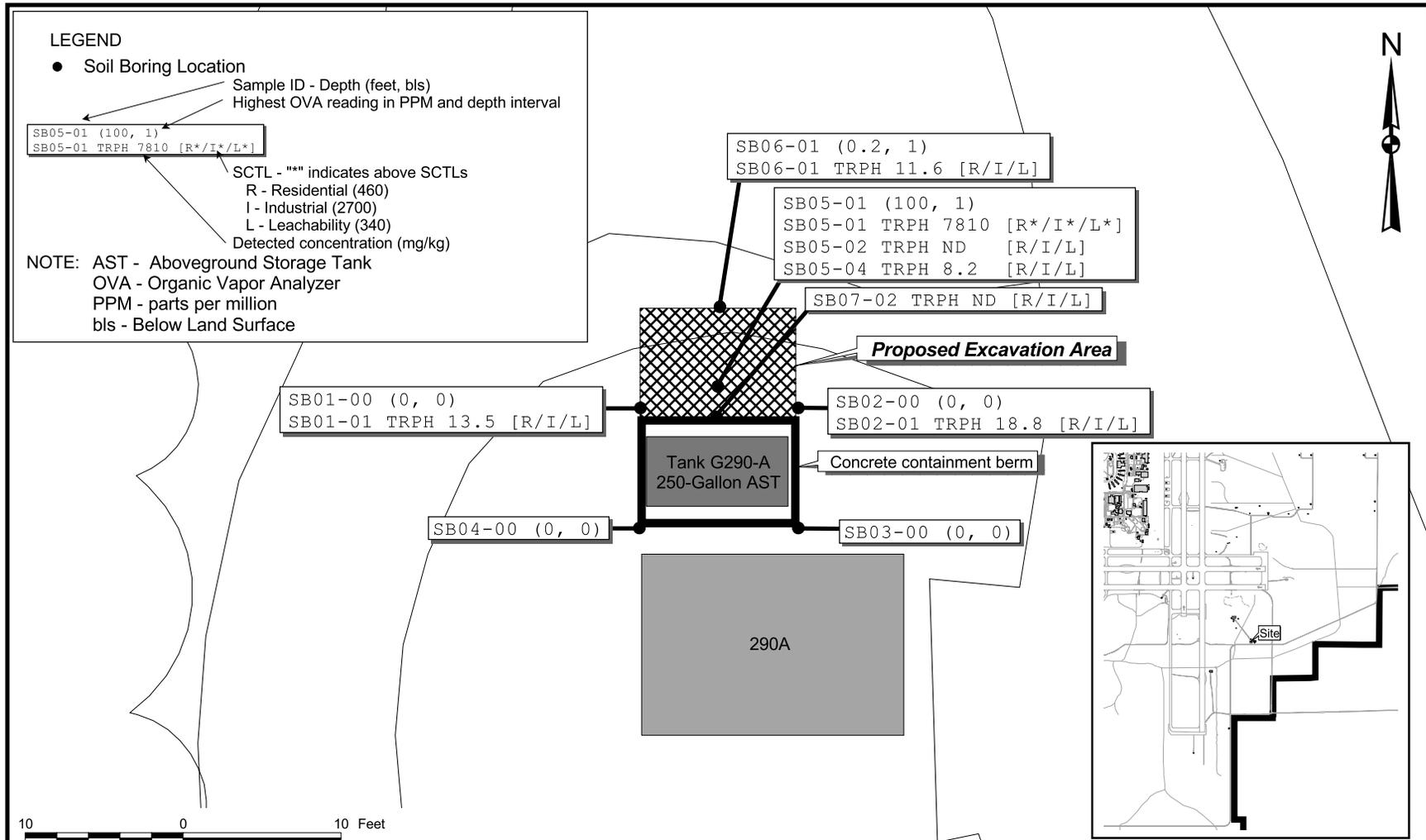
**CERTIFICATION**

The information contained herein is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the information described in this report. This Dig and Haul Package was developed for the Building 290 A, Tank 290A, and should not be construed to apply to any other site.

  
 November 16, 2007  
 Mark A. Peterson, P.G.  
 Florida License Number PG-0001852



**FIGURE**



DRAWN BY	DATE
MJJ	25Aug05
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



PROPOSED SOIL REMOVAL AREA  
BUILDING 290A, TANK G290-A  
NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA

Appendix N  
Supplemental Soil Assessment Letter Report for Tank G290-A  
(Tetra Tech NUS, Inc., November 2006)

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**TETRA TECH NUS, INC.**

8640 Phillips Highway, Suite 16 • Jacksonville, FL 32256  
Tel 904.636.6125 • Fax 904.636.6165 • www.tetrattech.com

Document Tracking Number 06JAX0074

November 9, 2006

Project Number 112GN4248

Mr. David Grabka  
Florida Department of Environmental Protection  
Twin Towers Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Reference: CLEAN III Contract Number N62467-94-D-0888  
Contract Task Order 0248

Subject: Supplemental Soil Assessment Letter Report for Tank G290-A  
Naval Air Station Cecil Field, Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Supplemental Soil Assessment Letter Report for Tank G290-A at Naval Air Station (NAS) Cecil Field. This report has been prepared for the United States Navy, Naval Facilities Engineering Command Southeast (NAVFAC SE) under Contract Task Order (CTO) 0248 of the Comprehensive Long-term Environmental Action Navy (CLEAN) III Contract Number N62467-94-D-0888. This Supplemental Soil Assessment Letter Report addresses comments issued by the Florida Department of Environmental Protection (FDEP) in a technical review letter dated March 10, 2004.

#### **SITE HISTORY**

Tank G290-A is an aboveground storage tank (AST) located immediately north of Building 290A and southeast of the intersection of the north-south and east-west runways. Building 290A houses a standby generator for Building 290. Tank G290-A was installed in 1995, has a 250-gallon capacity, and is in compliance with State tank regulations. Tank G290-A replaced Tank G290-U, which was an underground storage tank located west of Building 290A. Tank G290-U was removed in November 1995 by Innovative Services International and received a clean closure.

Confirmatory soil screening was conducted by ABB Environmental Services, Inc. (ABB-ES) in 1998. Three soil borings were installed around the AST, and soil samples were collected for screening with an organic vapor analyzer (OVA). The results of that investigation indicated that contaminated soil was not present at the site. However, because the tanks could not be taken out of service at that time, it was agreed that supplemental confirmatory sampling would be conducted when the tanks were taken out of service or transferred to confirm that no releases had occurred subsequent to the original investigation.

A soil investigation was conducted by TtNUS between June 7 and 16, 2000. The Sampling and Analysis Plan (SAP) specified that existing monitoring well CEF-290-2S be sampled as part of the field investigation. However, when TtNUS personnel arrived at the site to conduct the investigation, the monitoring well could not be located. Therefore, a replacement monitoring well was installed and sampled in accordance with the SAP. Replacement well CEF-290A-2SR was installed on September 12, 2000, and sampled on September 26, 2000. The soil investigation indicated that soil boring B290-A-SB-005

(SB-005), located directly under the secondary containment drain, exhibited an OVA equipped with a flame ionization detector (FID) response of approximately 100 parts per million (ppm) at the 0- to 1-foot (ft) interval. The 1- to 3- and 3- to 5-ft sample intervals both exhibited responses of 20 ppm. Laboratory analytical results from the groundwater sample indicated that concentrations of contaminants of concern were less than detection limits, and the detection limits were less than the Groundwater Cleanup Target Levels (GCTLs) specified in Chapter 62-770, Florida Administrative Code (FAC). Based on the findings of this investigation and of the previous investigation conducted by ABB-ES, TtNUS recommended No Further Action for Tank Site G290-A.

An April 5, 2002, FDEP comment letter stated that the Department could not concur with the recommendation for No Further Action because an elevated OVA-FID response was detected in a surface soil sample collected from under the secondary containment drain, possibly indicating petroleum-impacted soil. The letter requested that a soil sample be collected from that location and analyzed for the gasoline analytical group (GAG) and kerosene analytical group (KAG) listed in Chapter 62-770, FAC, to determine if there has been a petroleum release requiring further assessment.

On April 12, 2002, TtNUS collected a soil sample from under the secondary containment drain, at the approximate location and depth interval of the elevated OVA-FID response [SB-005 at 0 to 1 ft below ground surface (bgs)]. The sample was analyzed for constituents of the GAG and KAG as defined by Chapter 62-770, FAC. The laboratory analytical results indicated that the total petroleum hydrocarbon (TPH) concentration exceeded the Soil Cleanup Target Level (SCTL) specified in Chapter 62-770, FAC. In addition, detection limits for several polynuclear aromatic hydrocarbons (PAHs) were elevated due to matrix interference. TtNUS recommended that a source removal be conducted to remove petroleum-impacted soil from the site. Prior to initiating the source removal, additional soil samples needed to be collected to delineate the extent of contaminated soil and to define the limits of the excavation.

An FDEP comment letter dated March 10, 2004, stated that the Department concurred that additional delineation to determine the extent of contaminated soil should be conducted prior to initiating source removal.

## **FIELD OPERATIONS**

TtNUS mobilized to the site on March 22, 2005, for additional sampling and analysis of soil as proposed for delineation of soil to be excavated for the Tank G290-A, Building 290A. The general location within the former NAS Cecil Field Main Base is shown on the attached Figure 1. During this investigation, soils were screened with an OVA-FID at CEF-B290A-SB-006-01 located approximately 5 ft due north of CEF-B290A-SB-005 (see Figure 2). The screening intervals were the same as previously accomplished for this site on June 16, 2000, (0 to 1 ft bls, 1 to 3 ft bls, and 3 to 5 ft bls). Two locations (east and west of CEF-B290A-SB-005) were sampled, but were not be screened because OVA-FID data was generated for those approximate locations during the previous sampling event in June 2000. The two sampling locations are labeled CEF-B290A-SB-001-01 and CEF-B290A-SB-002-01 on the attached Figure 2. The screening was accomplished in accordance with Chapter 62-770.200(12), FAC.

The corrected screening data at CEF-B290A-SB-006-01 were then used to determine the depth of collection for the fixed-base laboratory samples. The depth to water was determined so that no laboratory sample was collected below the capillary fringe. The samples for CEF-B290A-SB-001-01 and CEF-B290A-SB-002-01 were collected from the same interval (0 to 1 ft bls) as previously collected at the CEF-B290A-SB-005 location.

The sampling activities and procedures were performed in general accordance with FDEP and TtNUS Standard Operating Procedures.

Following collection, the soil samples were placed on ice and shipped under chain of custody to Accutest Laboratories in Orlando, Florida for analysis. The samples were analyzed for PAHs using United States

Mr. David Grabka  
FDEP  
November 9, 2006 – Page 3 of 3

Environmental Protection Agency Method SW-846 8310 and TPH using the Florida Petroleum Range Organics (FL-PRO) method.

## RESULTS

Soil boring B290A-SB-006-001, located approximately 5 ft due north of CEF-B290A-SB-005, exhibited an OVA-FID response of approximately 0.2 ppm at the 0- to 1-ft interval. The 1- to 3- and 3- to 5- ft sample intervals did not exhibit OVA-FID responses. The general lithology of the soils excavated were silty fine-grained sands in various shades of gray and brown. The depth of the water table was 3.5 ft bgs at B290A-SB-006-001. The soil OVA-FID data collected during the investigation are summarized in Table 1.

The laboratory analytical results indicate that PAH concentrations for all three locations were less than the detection limit of the instrument, and TPH concentrations were less than the SCTLs specified in Chapter 62-770, FAC. The laboratory analytical results are summarized in Table 2, and the laboratory analytical report is provided in Attachment A.

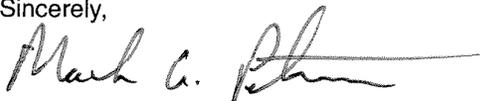
## CONCLUSIONS AND RECOMMENDATIONS

TtNUS recommends that a source removal be conducted to remove petroleum-impacted soil from an approximate 10-ft by 13-ft area as presented in Figure 3 and as delineated by the location of the three soil samples discussed in this report (CEF-B290A-SB-001-01, CEF-B290A-SB-002-01, and CEF-B290A-SB-006-01) as well as soil sampling locations previously screened by OVA-FID on June 16, 2000 (CEF-B290A-SB-003 and CEF-B290A-SB-004). The proposed area should be excavated to the top of the water table and replaced with clean fill material. To obtain site closure, post-excavation groundwater monitoring will be necessary in accordance with Chapter 62-770.750, FAC. Analyses should be for PAHs and TPH. Well CEF-290A-2SR and well CEF-290A-02S should be sampled for the post-excavation monitoring event. Figure 4 shows the monitoring well locations.

Since soil contamination at this site is restricted to shallow soils, post excavation monitoring is required for one event rather than quarterly. At the completion of monitoring, assuming GCTLs are not exceeded, a no further action proposal should be prepared in accordance with Chapter 62-780, FAC.

If you have any questions regarding the information presented in this document, please contact me by phone at (904) 636-6125 or via e-mail at Mark.Peterson@ttnus.com.

Sincerely,



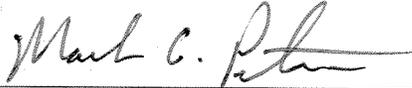
Mark A. Peterson, P.G.  
Task Order Manager  
Florida License Number PG-0001852

Enclosures (6)

pc: G. Magwood, NAVFAC SE (CD only)  
M. Halil, CH2M Hill (CD only)  
M. Perry, TtNUS (unbound and CD)  
D. Humbert, TtNUS (letter only)  
M. Speranza, TtNUS (letter only)  
M. Jonnet, TtNUS (Cecil DMS) (CD)  
J. Logan, TtNUS  
R. Simcik, TtNUS (Bookcase File)  
J. Johnson, TtNUS (Information Repository) (CD)  
CTO 0248 Project File

## **CERTIFICATION**

The information contained is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the information described in this report. This Supplemental Soil Assessment Letter Report was developed for Tank G290-A at the Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.



---

November 9, 2006

Mark A. Peterson, P.G.

Florida License Number PG-0001852

## TABLES

**Table 1**  
**Soil Vapor Field Screening Results**

Building 290A, Tank G290-A  
Naval Air Station Cecil Field  
Jacksonville, Florida

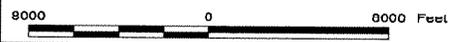
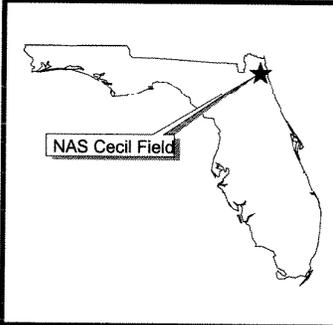
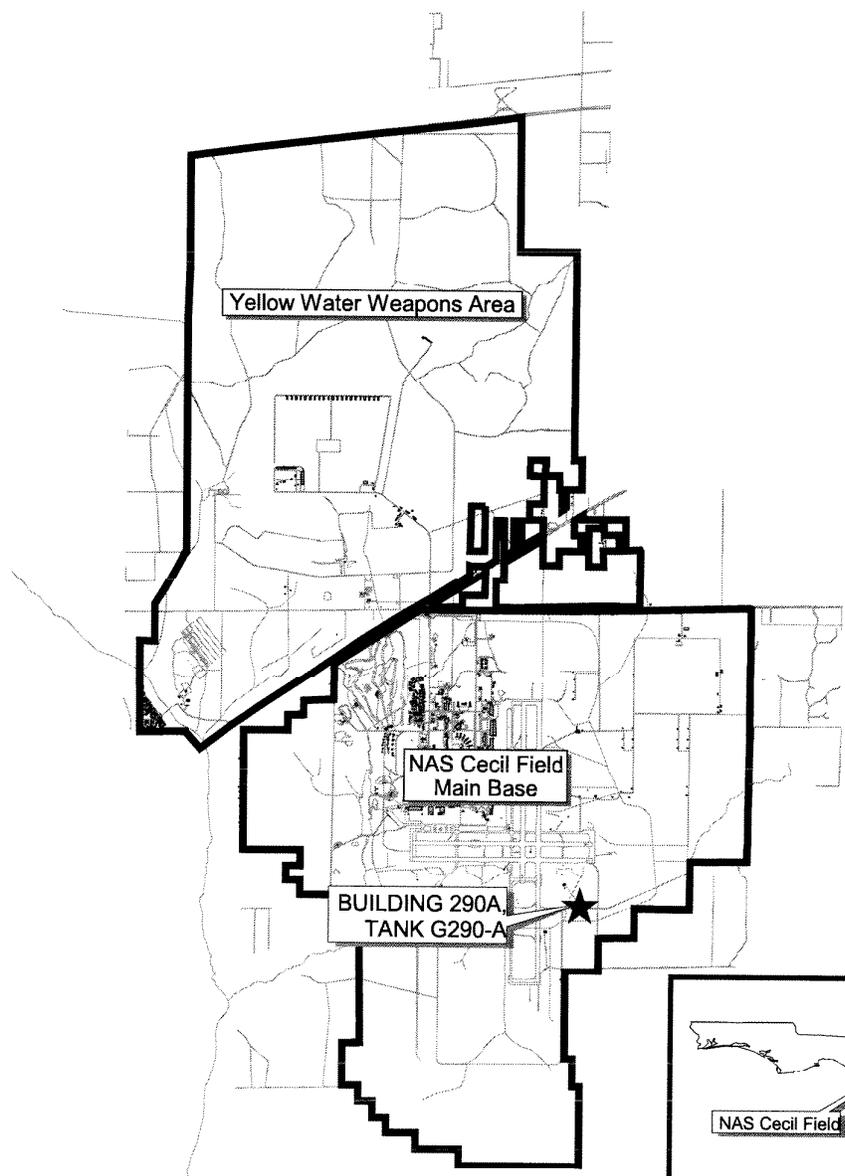
Sample Identification	Depth (ft bgs)	OVA Result (ppm)			Lithologic Description	Analytical Sample	Analysis
		Unfiltered	Filtered	Net			
CEF-B290A-SB							
001	1	ND	ND	ND	Silty fine sand, light gray	CEF-B290A-SB001-01	PAHs by 8310 and TPH by FL-PRO
002	1	ND	ND	ND	Silty fine sand, light gray	CEF-B290A-SB002-01	PAHs by 8310 and TPH by FL-PRO
006	1	0.2	0.0	0.2	Silty fine sand, gray	CEF-B290A-SB006-01	PAHs by 8310 and TPH by FL-PRO
	2	0.0	ND	0.0	Silty fine sand, brown		
	4	0.0	0.0	0.0	Silty fine sand, brown		

**Table 2**  
**Summary of Soil Sample Analytical Results**

Building 290A, Tank G290-A  
Naval Air Station Cecil Field  
Jacksonville, Florida

Compounds	SCTLs <sup>1</sup>			CEF-B290A-		
				SB-001-01	SB-002-01	SB-006-01
	Residential	Leachability	Industrial	1 ft bls	1 ft bls	1 ft bls
<b>PAHs</b>						
Acenaphthene	2,400	2.1	20,000	0.190 U	0.180 U	0.190 U
Acenaphthylene	1,800	27	20,000	0.190 U	0.180 U	0.190 U
Anthracene	21,000	2,500	300,000	0.190 U	0.180 U	0.190 U
Benzo(a)anthracene	#	0.8	#	0.093 U	0.088 U	0.095 U
Benzo(a)pyrene	0.1	8	0.7	0.019 U	0.018 U	0.019 U
Benzo(b)fluoranthene	#	2.4	#	0.019 U	0.018 U	0.019 U
Benzo(g,h,i)perylene	2,500	32,000	52,000	0.019 U	0.018 U	0.019 U
Benzo(k)fluoranthene	#	24	#	0.019 U	0.018 U	0.019 U
Chrysene	#	77	#	0.093 U	0.088 U	0.095 U
Dibenz(a,h)anthracene	#	0.7	#	0.019 U	0.018 U	0.019 U
Fluoranthene	3,200	1,200	59,000	0.093 U	0.088 U	0.095 U
Fluorene	2,600	160	33000	0.190 U	0.180 U	0.190 U
Indeno(1,2,3-cd)pyrene	#	6.6	#	0.019 U	0.018 U	0.019 U
Naphthalene	55	1.2	300	0.093 U	0.088 U	0.095 U
1-Methylnaphthalene	200	3.1	1800	0.093 U	0.088 U	0.095 U
2-Methylnaphthalene	210	8.5	2100	0.093 U	0.088 U	0.095 U
Phenanthrene	2,200	250	36000	0.190 U	0.180 U	0.190 U
Pyrene	2,400	880	45000	0.093 U	0.088 U	0.095 U
<b>TPH (C8-C40)</b>	460	340	2700	13.5	18.8	11.6
<b>Benzo(a)pyrene Equivalents<sup>2</sup></b>	0.1	nc	0.8	0	0	0
<b>Notes:</b>						
1 Established in Chapter 62-777, FAC.						
All results are in milligrams per kilogram.						
U = Indicates that the compound was analyzed for but not detected in excess the laboratory method detection limit.						
# = Site concentrations of carcinogenic PAHs must be converted to benzo(a)pyrene equivalents before comparison with benzo(a)pyrene SCTLs for using the approach described.						
in the February 2005 Final Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 62-777, FAC.						
2 Calculated.						
NC = no criterion.						

## FIGURES

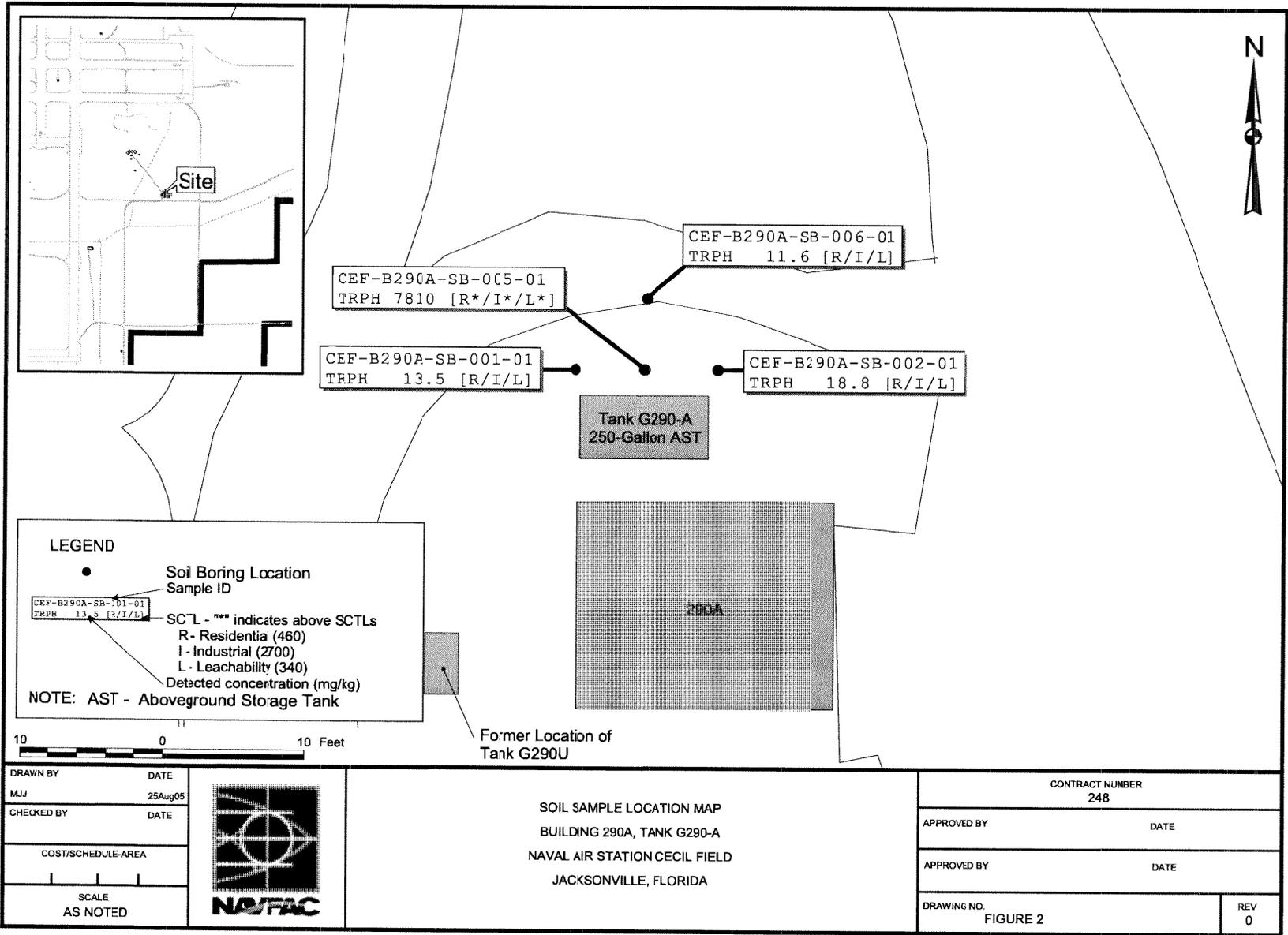


DRAWN BY	DATE
MJJ	24Mar06
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE	AS NOTED



GENERAL LOCATION MAP  
BUILDING 290A, TANK G290-A  
NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA

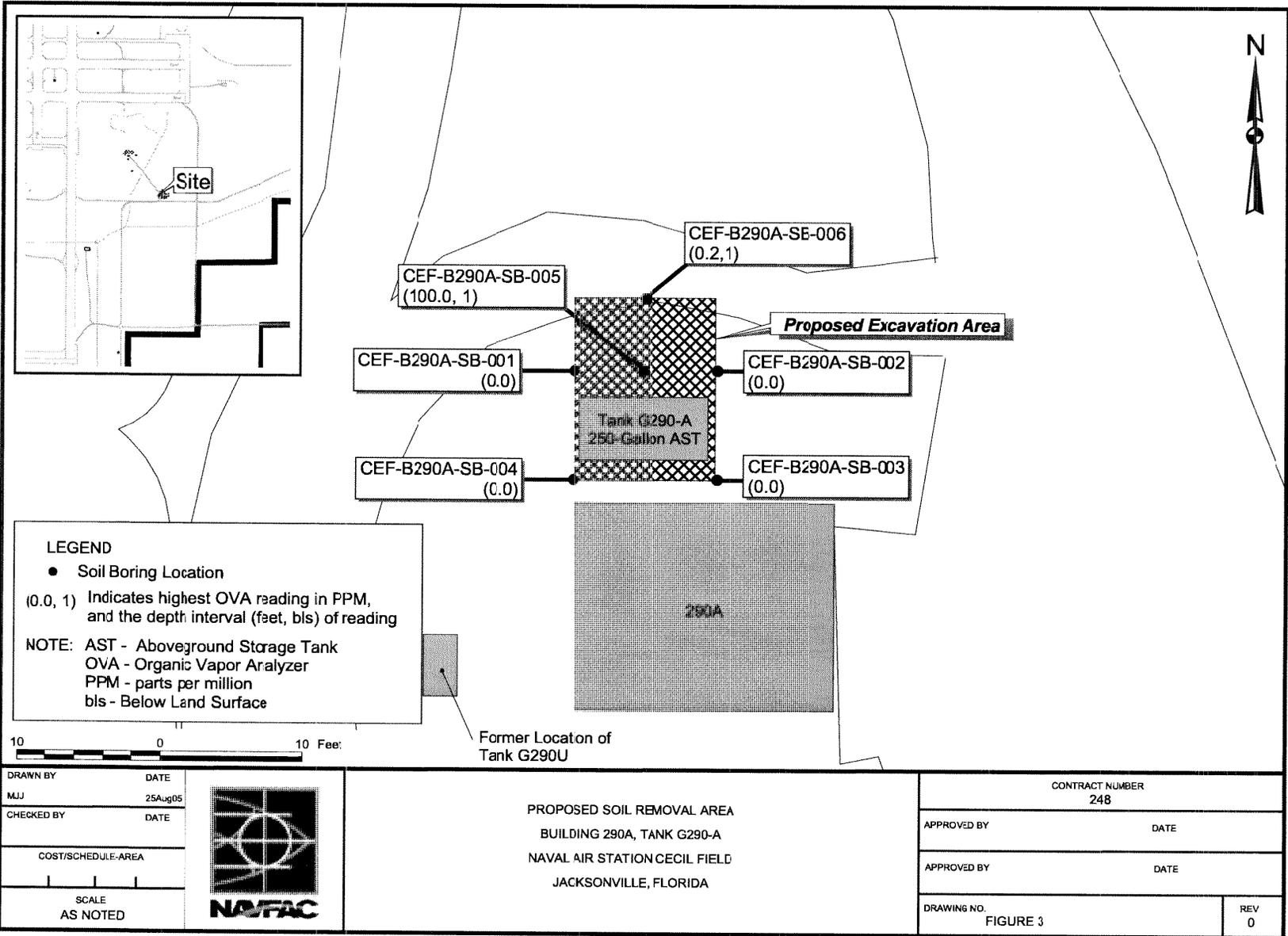
CONTRACT NUMBER	
248	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	REV
FIGURE 1	0

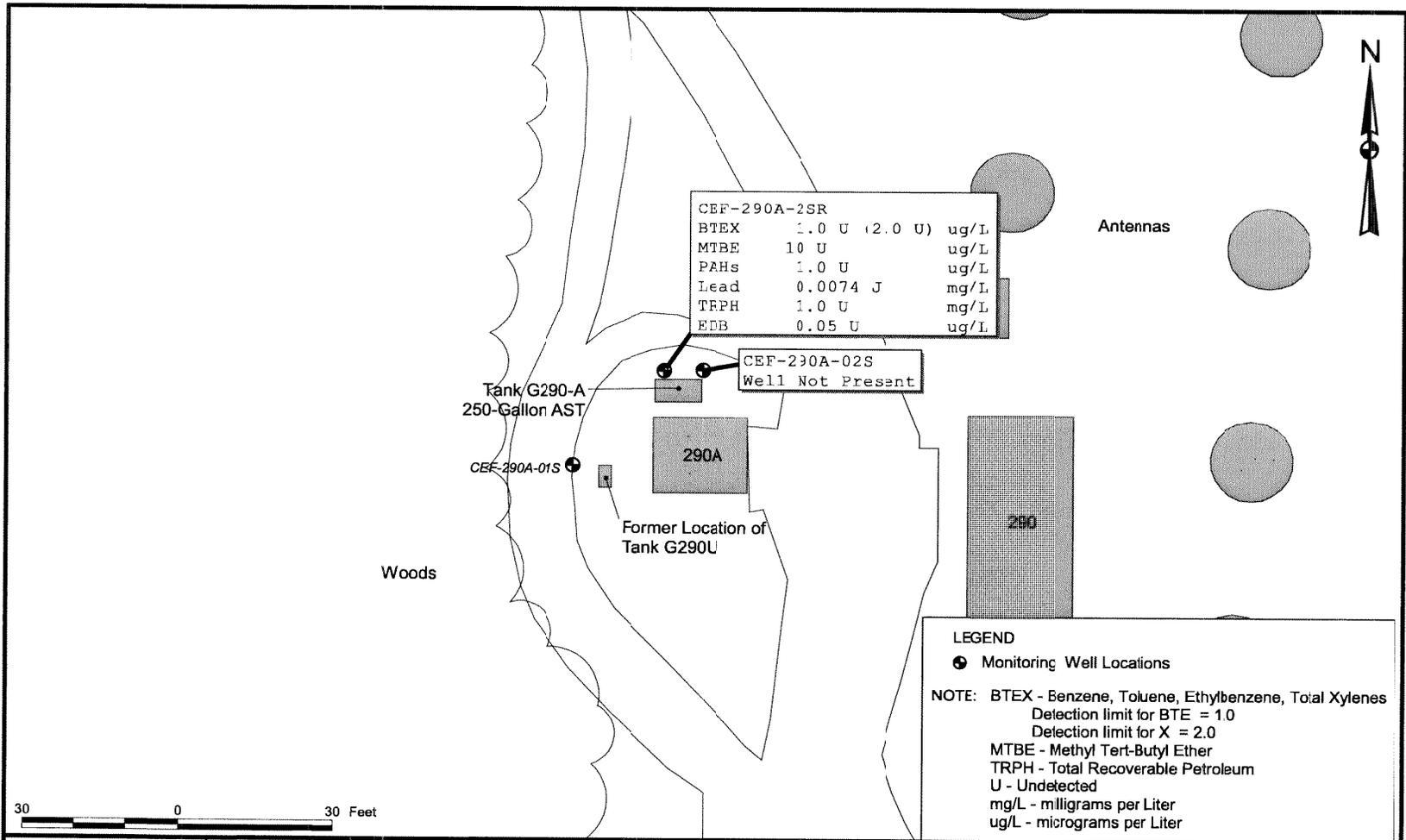


DRAWN BY	DATE
MJJ	25Aug05
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE	
AS NOTED	

**SOIL SAMPLE LOCATION MAP**  
**BUILDING 290A, TANK G290-A**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

CONTRACT NUMBER <b>248</b>	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. <b>FIGURE 2</b>	REV <b>0</b>





**LEGEND**  
 ● Monitoring Well Locations

**NOTE:** BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes  
 Detection limit for BTE = 1.0  
 Detection limit for X = 2.0  
 MTBE - Methyl Tert-Butyl Ether  
 TRPH - Total Recoverable Petroleum  
 U - Undetected  
 mg/L - milligrams per Liter  
 ug/L - micrograms per Liter

DRAWN BY	DATE
MJJ	15Nov00
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



GROUNDWATER MONITORING WELL LOCATIONS AND CONTAMINANT CONCENTRATIONS  
 CONFIRMATORY SAMPLING REPORT  
 BUILDING 290A, TANK G290-A  
 NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 121	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO FIGURE 4	REV 0

P:\GIS\CECIL\Tank\_g290a-1.apr 04Dec00 MJJLayout2

**ATTACHMENT A**  
**LABORATORY ANALYTICAL REPORT**

Technical Report for

Tetra Tech NUS

NAS Cecil Field-CTO-248

N4242-WR#1001712/ Tank 290A

Accutest Job Number: F30558

Sampling Date: 03/22/05

Report to:

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

ATTN: Amy Thomson

Total number of pages in report: 263



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  
This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

**TABLE OF CONTENTS**  
**FULL LABORATORY DATA DELIVERABLES**

<b>1. TITLE / COVER PAGE</b>	
<b>2. TABLE OF CONTENTS</b>	
<b>3. CASE NARRATIVE</b>	
<b>4. SAMPLE RECEIPT FORM</b>	
<b>5. CUSTODY DOCUMENTATION</b>	
<b>6. SUMMARY PACKAGE</b>	
<b>7. RESULTS SUMMARY</b>	
<b>8. GC SUPPORT DATA (SW846- METHOD 8310)</b>	
8.1. Sample Result Report of Analysis	SGC.01
8.2. Surrogate Recoveries Summary	SGC.02
8.3. GC Surrogate Retention Time Summary	SGC.03
8.4. Method Blank Summary	SGC.04
8.5. Blank Spike Summary	SGC.05
8.6. Matrix Spike / Matrix Spike Duplicate Summary	SGC.06
8.7. Sample Duplicate Summary	SGC.07
8.8. Initial Calibration Summary	SGC.08
8.9. Continuing Calibration Summary	SGC.09
8.10. Logs and Bench Sheets	SGC.10
8.11. Sample Prep Report	SGC.11
<b>9. GC SUPPORT DATA (METHOD FL PRO)</b>	
9.1. Sample Result Report of Analysis	SGC.01
9.2. Surrogate Recoveries Summary	SGC.02
9.3. GC Surrogate Retention Time Summary	SGC.03
9.4. Method Blank Summary	SGC.04
9.5. Blank Spike Summary	SGC.05
9.6. Matrix Spike / Matrix Spike Duplicate Summary	SGC.06
9.7. Sample Duplicate Summary	SGC.07
9.8. Initial Calibration Summary	SGC.08
9.9. Continuing Calibration Summary	SGC.09
9.10. Logs and Bench Sheets	SGC.10
9.11. Sample Prep Report	SGC.11

0002

## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** Tetra Tech NUS

**Job No:** F30558

**Site:** NAS Cecil Field-CTO-248

**Report Date:** 4/13/2005 10:59:52

4 Samples were collected on 03/22/2005 and were received at Accutest on 03/23/2005 properly preserved, at 3.8 Deg. C and intact. These Samples received an Accutest job number of F30558. 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:** OP12790

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.

Samples F30558-IMS, F30558-1MSD were used as the QC samples indicated.

### Extractables by GC by Method FLORIDA-PRO

**Matrix:** SO

**Batch ID:** OP12789

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.

Samples F30558-IMS, F30558-1MSD were used as the QC samples indicated.

### Wet Chemistry by Method EPA 160.3 M

**Matrix:** SO

**Batch ID:** GN16921

Sample F30596-2DUP 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:

\_\_\_\_\_  
Ellen Pampel, Inorganic QA (signature on file)

Date: April 13, 2005

Wednesday, April 13, 2005

0004

**ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION**

ACCUTEST'S JOB NUMBER: F30558 CLIENT: Tetra Tech PROJECT: N4242, CTO 248  
DATE/TIME RECEIVED: 3/23/05 9:00 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 3.8  
METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER  
AIRBILL NUMBERS: \_\_\_\_\_

**COOLER INFORMATION**

- CUSTODY SEAL NOT PRESENT/INTACT
- NO COC RECEIVED
- ANALYSES NOT MARKED ON COC
- ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- TEMPERATURE CRITERIA NOT MET

**TRIP BLANK INFORMATION**

- TRIP BLANK NOT PROVIDED
- TRIP BLANK NOT ON COC
- TRIP BLANK INTACT
- TRIP BLANK NOT INTACT
- RECEIVED WATER TRIP BLANK
- RECEIVED SOIL TRIP BLANK

**SOIL INFORMATION**

NUMBER OF ENCORES ? 0  
NUMBER OF 5035 FIELD KITS ? 0

SUMMARY OF COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SAMPLE INFORMATION**

- SAMPLE LABELS PRESENT ON ALL BOTTLES
- CORRECT NUMBER OF CONTAINERS USED
- SAMPLE RECEIVED IMPROPERLY PRESERVED
- INSUFFICIENT VOLUME FOR ANALYSIS
- SAMPLE RECEIVED PAST HOLD TIME
- TIMES ON COC DON'T MATCH LABEL
- ID'S ON COC DON'T MATCH LABEL
- VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- UNCLEAR FILTERING INSTRUCTIONS
- UNCLEAR COMPOSITING INSTRUCTIONS
- SAMPLE(S) RECEIVED BROKEN
- % SOLIDS JAR NOT RECEIVED

TECHNICIAN SIGNATURE/DATE [Signature] 3/23/05 TECHNICIAN SIGNATURE/DATE [Signature]



TETRA TECH NUS, INC.

F30558  
CHAIN OF CUSTODY

NUMBER 290A-032105

PAGE 1 OF 1

PROJECT NO: N4242, CTV 248		FACILITY: NASCF, TANK 290A		PROJECT MANAGER: PAUL CALIGAN		PHONE NUMBER: 813 806 0202		LABORATORY NAME AND CONTACT: ACCUTEST H. WANDRAY			
SAMPLERS (SIGNATURE): Merrin W. Dale				FIELD OPERATIONS LEADER: MERRY DALE		PHONE NUMBER: 904 636 6125		ADDRESS: 4405 VIVELAND Rd., C-15			
				CARRIER/WAYBILL NUMBER: Fedex 8427 1834 9649				CITY, STATE: ORLANDO, FL 32811			
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/>								CONTAINER TYPE: PLASTIC (P) or GLASS (G)			
<input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day								PRESERVATIVE USED			
DATE YEAR	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	TYPE OF ANALYSIS PAHS SWS46 SB10 Note G TRPH FL-PAO Note G		
1	03/22 1125	CEF-B290A-SB006-01 *		0	1	SO	G	4	2	2	Cool to 4°C
2	03/22 1140	CEF-B290A-SB001-01		0	1	SO	G	2	1	1	
3	03/22 1153	CEF-B290A-SB002-01		0	1	SO	G	2	1	1	Work Release
4	03/22 0000	CEF-B290A-SB-D402		0	1	SO	G	2	1	1	1001712
MWD											
1. RELINQUISHED BY: Merrin W. Dale				DATE: 03/22/05	TIME: 1600	1. RECEIVED BY: Fedex				DATE: 03/22/05	TIME: —
2. RELINQUISHED BY: FX				DATE: 3/23/05	TIME: 9:00	2. RECEIVED BY: [Signature]				DATE: 3/23/05	TIME: 9:00
3. RELINQUISHED BY:				DATE:	TIME:	3. RECEIVED BY:				DATE:	TIME:
COMMENTS: 0008											

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE)

YELLOW (FIELD COPY)

PINK (FILE COPY)

4/02R

## Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB006-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-1	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 86.5
<b>Method:</b> SW846 8310 SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004064.D	1	03/25/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.3 g	5.0 ml
Run #2		

## Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	190 U	760	190	ug/kg	
208-96-8	Acenaphthylene	190 U	760	190	ug/kg	
120-12-7	Anthracene	190 U	380	190	ug/kg	
56-55-3	Benzo(a)anthracene	95 U	380	95	ug/kg	
50-32-8	Benzo(a)pyrene	19 U	76	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	19 U	76	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19 U	76	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	19 U	76	19	ug/kg	
218-01-9	Chrysene	95 U	380	95	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	19 U	76	19	ug/kg	
206-44-0	Fluoranthene	95 U	380	95	ug/kg	
86-73-7	Fluorene	190 U	380	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19 U	76	19	ug/kg	
91-20-3	Naphthalene	95 U	380	95	ug/kg	
90-12-0	1-Methylnaphthalene	95 U	380	95	ug/kg	
91-57-6	2-Methylnaphthalene	95 U	380	95	ug/kg	
85-01-8	Phenanthrene	190 U	380	190	ug/kg	
129-00-0	Pyrene	95 U	380	95	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	53%		49-124%
92-94-4	p-Terphenyl	57%		56-141%

0010

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

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

## Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB001-01	
<b>Lab Sample ID:</b> F30558-2	<b>Date Sampled:</b> 03/22/05
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 03/23/05
<b>Method:</b> SW846 8310 SW846 3550B	<b>Percent Solids:</b> 89.1
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004067.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #	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	190 U	750	190	ug/kg	
208-96-8	Acenaphthylene	190 U	750	190	ug/kg	
120-12-7	Anthracene	190 U	370	190	ug/kg	
56-55-3	Benzo(a)anthracene	93 U	370	93	ug/kg	
50-32-8	Benzo(a)pyrene	19 U	75	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	19 U	75	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19 U	75	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	19 U	75	19	ug/kg	
218-01-9	Chrysene	93 U	370	93	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	19 U	75	19	ug/kg	
206-44-0	Fluoranthene	93 U	370	93	ug/kg	
86-73-7	Fluorene	190 U	370	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19 U	75	19	ug/kg	
91-20-3	Naphthalene	93 U	370	93	ug/kg	
90-12-0	1-Methylnaphthalene	93 U	370	93	ug/kg	
91-57-6	2-Methylnaphthalene	93 U	370	93	ug/kg	
85 01-8	Phenanthrene	190 U	370	190	ug/kg	
129-00-0	Pyrene	93 U	370	93	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		49-124%
92-94-4	p-Terphenyl	91%		56-141%

0011

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

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

## Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB002-01	
<b>Lab Sample ID:</b> F30558-3	<b>Date Sampled:</b> 03/22/05
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 03/23/05
<b>Method:</b> SW846 8310 SW846 3550B	<b>Percent Solids:</b> 93.8
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004068.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.2 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	86%		49-124%
92-94-4	p-Terphenyl	87%		56-141%

0012

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

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

## Report of Analysis

<b>Client Sample ID:</b>	CEF-B290A-SB-DU02	
<b>Lab Sample ID:</b>	F30558-4	<b>Date Sampled:</b> 03/22/05
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b> 03/23/05
<b>Method:</b>	SW846 8310 SW846 3550B	<b>Percent Solids:</b> 89.5
<b>Project:</b>	NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004069.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.5 g	5.0 ml
Run #2		

## Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	180 U	730	180	ug/kg	
208-96-8	Acenaphthylene	180 U	730	180	ug/kg	
120-12-7	Anthracene	180 U	370	180	ug/kg	
56-55-3	Benzo(a)anthracene	92 U	370	92	ug/kg	
50-32-8	Benzo(a)pyrene	18 U	73	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	18 U	73	18	ug/kg	
191-24-2	Benzo(g,h,i)perylene	18 U	73	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	18 U	73	18	ug/kg	
218-01-9	Chrysene	92 U	370	92	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	18 U	73	18	ug/kg	
206-44-0	Fluoranthene	92 U	370	92	ug/kg	
86-73-7	Fluorene	180 U	370	180	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	18 U	73	18	ug/kg	
91-20-3	Naphthalene	92 U	370	92	ug/kg	
90-12-0	1-Methylnaphthalene	92 U	370	92	ug/kg	
91-57-6	2-Methylnaphthalene	92 U	370	92	ug/kg	
85-01-8	Phenanthrene	180 U	370	180	ug/kg	
129-00-0	Pyrene	92 U	370	92	ug/kg	

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

0013

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

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

# Method Blank Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12790-MB	PP004056.D	1	03/25/05	MRE	03/24/05	OP12790	GPP162

The QC reported here applies to the following samples:

Method: SW846 8310

F30558-1, F30558-2, F30558-3, F30558-4

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	99%	49-124%
92-94-4	p-Terphenyl	102%	56-141%

0014

## Method Blank Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12790-MB	PP004073.D	1	03/28/05	MRE	03/24/05	OP12790	GPP163

The QC reported here applies to the following samples:

Method: SW846 8310

F30558-1, F30558-2, F30558-3, F30558-4

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	99%	49-124%
92-94-4	p-Terphenyl	102%	56-141%

0015

# Blank Spike Summary

Job Number: F30558  
 Account: TETRPAPT Tetra Tech NUS  
 Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12790-BS	PP004055.D 1		03/25/05	MRE	03/24/05	OP12790	GPP162

The QC reported here applies to the following samples:

Method: SW846 8310

F30558-1, F30558-2, F30558-3, F30558-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	3330	3370	101	67-112
208-96-8	Acenaphthylene	3330	3280	98	64-110
120-12-7	Anthracene	1670	1850	111	78-117
56-55-3	Benzo(a)anthracene	1670	1780	107	80-120
50-32-8	Benzo(a)pyrene	1670	1820	109	76-120
205-99-2	Benzo(b)fluoranthene	1670	1810	109	80-126
191-24-2	Benzo(g,h,i)perylene	1670	1820	109	81-122
207-08-9	Benzo(k)fluoranthene	1670	1870	112	79-126
218-01-9	Chrysene	1670	1820	109	79-123
53-70-3	Dibenzo(a,h)anthracene	1670	1820	109	81-124
206-44-0	Fluoranthene	3330	3600	108	77-119
86-73-7	Fluorene	3330	3470	104	69-114
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1840	110	81-125
91-20-3	Naphthalene	3330	3060	92	57-101
90-12-0	1-Methylnaphthalene	3330	3200	96	60-104
91-57-6	2-Methylnaphthalene	3330	3230	97	61-105
85-01-8	Phenanthrene	3330	3590	108	72-116
129-00-0	Pyrene	3330	3630	109	77-119

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	100%	49-124%
92-94-4	p-Terphenyl	101%	56-141%

0016

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F30558  
 Account: TETRAPAPT Tetra Tech NUS  
 Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12790-MS	PP004065.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
OP12790-MSD	PP004066.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
F30558-1	PP004064.D	1	03/25/05	MRE	03/24/05	OP12790	GPP162

The QC reported here applies to the following samples:

Method: SW846 8310

F30558-1, F30558-2, F30558-3, F30558-4

CAS No.	Compound	F30558-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	760 U		3830	3690	96	3660	97	1	51-123/25
208-96-8	Acenaphthylene	760 U		3830	3600	94	3570	95	1	48-121/27
120-12-7	Anthracene	380 U		1910	2010	105	1980	105	2	65-125/20
56-55-3	Benzo(a)anthracene	380 U		1910	1940	101	1890	100	3	57-132/20
50-32-8	Benzo(a)pyrene	76 U		1910	2000	104	1930	103	4	61-128/21
205-99-2	Benzo(b)fluoranthene	76 U		1910	1950	102	1920	102	2	57-138/21
191-24-2	Benzo(g,h,i)perylene	76 U		1910	1930	101	1880	100	3	60-131/20
207-08-9	Benzo(k)fluoranthene	76 U		1910	1970	103	1990	106	1	58-134/20
218-01-9	Chrysene	380 U		1910	1970	103	1920	102	3	65-132/21
53-70-3	Dibenzo(a,h)anthracene	76 U		1910	1970	103	1930	103	2	61-132/19
206-44-0	Fluoranthene	380 U		3830	3910	102	3860	103	1	63-127/21
86-73-7	Fluorene	380 U		3830	3770	98	3750	100	1	46-133/23
193-39-5	Indeno(1,2,3-cd)pyrene	76 U		1910	1950	102	1930	103	1	68-127/20
91-20-3	Naphthalene	380 U		3830	3250	85	3260	87	0	44-107/28
90-12-0	1-Methylnaphthalene	380 U		3830	3470	91	3460	92	0	44-115/26
91-57-6	2-Methylnaphthalene	380 U		3830	3490	91	3480	92	0	44-117/26
85-01-8	Phenanthrene	380 U		3830	3880	101	3860	103	1	59-122/21
129-00-0	Pyrene	380 U		3830	3950	103	3890	103	2	61-127/21

CAS No.	Surrogate Recoveries	MS	MSD	F30558-1	Limits
84-15-1	o-Terphenyl	93%	97%	53%	49-124%
92-94-4	p-Terphenyl	95%	97%	57%	56-141%

0017

# Semivolatile Surrogate Recovery Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Method: SW846 8310

Matrix: SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 <sup>a</sup>	S2 <sup>a</sup>
F30558-1	PP004064.D	53.0	57.0
F30558-2	PP004067.D	88.0	91.0
F30558-3	PP004068.D	86.0	87.0
F30558-4	PP004069.D	90.0	92.0
OP12790-BS	PP004055.D	100.0	101.0
OP12790-MB	PP004056.D	99.0	102.0
OP12790-MB	PP004073.D	99.0	102.0
OP12790-MS	PP004065.D	93.0	95.0
OP12790-MSD	PP004066.D	97.0	97.0

Surrogate Compounds	Recovery Limits
------------------------	--------------------

S1 = o-Terphenyl	49-124%
S2 = p-Terphenyl	56-141%

(a) Recovery from GC signal #1

0018

# GC Surrogate Retention Time Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Check Std:	GPP162-CC107	Injection Date:	03/25/05
Lab File ID:	PP004054.D	Injection Time:	20:48
Instrument ID:	GCPP	Method:	SW846 8310

	S1 <sup>a</sup>	S2 <sup>a</sup>
	RT	RT
Check Std	6.52	8.49

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 <sup>a</sup> RT	S2 <sup>a</sup> RT
OP12790-BS	PP004055.D	03/25/05	21:07	6.52	8.49
OP12790-MR	PP004056.D	03/25/05	21:26	6.52	8.48
ZZZZZZ	PP004057.D	03/25/05	21:45	6.52	8.49
ZZZZZZ	PP004058.D	03/25/05	22:04	6.52	8.48
ZZZZZZ	PP004059.D	03/25/05	22:23	6.52	8.48
ZZZZZZ	PP004060.D	03/25/05	22:42	6.52	8.48

### Surrogate Compounds

S1 = o-Terphenyl  
S2 = p-Terphenyl

(a) Retention time from GC signal #1

0019

# GC Surrogate Retention Time Summary

Job Number: F30558  
 Account: TETRPAPT Tetra Tech NUS  
 Project: NAS Cecil Field-CTO-248

Check Std:	GPP162-CC107	Injection Date:	03/25/05
Lab File ID:	PP004062.D	Injection Time:	23:21
Instrument ID:	GCPP	Method:	SW846 8310

	S1 <sup>a</sup> RT	S1 <sup>b</sup> RT	S2 <sup>a</sup> RT	S2 <sup>b</sup> RT
Check Std	6.52	6.52	8.48	8.48

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 <sup>a</sup> RT	S1 <sup>b</sup> RT	S2 <sup>a</sup> RT	S2 <sup>b</sup> RT
ZZZZZZ	PP004063.D	03/25/05	23:40	6.52		8.48	
F30558-1	PP004064.D	03/25/05	23:59	6.52		8.48	
OP12790-MS	PP004065.D	03/26/05	00:18	6.52		8.48	
OP12790-MSD	PP004066.D	03/26/05	00:37	6.52		8.48	
F30558-2	PP004067.D	03/26/05	00:56	6.53		8.48	
F30558-3	PP004068.D	03/26/05	01:15	6.53		8.48	
F30558-4	PP004069.D	03/26/05	01:34	6.53		8.48	
GPP162-ECC107	PP004070.D	03/26/05	01:53	6.53	6.53	8.48	8.48

**Surrogate  
Compounds**

S1 = o-Terphenyl  
 S2 = p-Terphenyl

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

0020

# GC Surrogate Retention Time Summary

Job Number: F30558  
 Account: TETRPAPT Tetra Tech NUS  
 Project: NAS Cecil Field-CTO-248

Check Std:	GPP163-CC107	Injection Date:	03/28/05
Lab File ID:	PP004072.D	Injection Time:	13:48
Instrument ID:	GCPP	Method:	SW846 8310

S1<sup>a</sup> S2<sup>a</sup>  
 RT RT

Check Std	6.52	8.48
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 <sup>a</sup> RT	S2 <sup>a</sup> RT
OP12790-MB	PP004073.D	03/28/05	14:07	6.52	8.47
777777	PP004074.D	03/28/05	14:26	6.52	8.48
OP12754-BS	PP004075.D	03/28/05	14:45	6.52	8.48
OP12754-MB	PP004076.D	03/28/05	15:04	6.52	8.48
ZZZZZZ	PP004077.D	03/28/05	15:23	6.52	8.48
ZZZZZZ	PP004078.D	03/28/05	15:42	6.52	8.48
F30432-8	PP004079.D	03/28/05	16:02	6.51	8.48
OP12754-MS	PP004080.D	03/28/05	16:21	6.52	8.48
OP12754-MSD	PP004081.D	03/28/05	16:40	6.52	8.48

**Surrogate Compounds**

S1 = o-Terphenyl  
 S2 = p-Terphenyl

(a) Retention time from GC signal #1

0021

# Initial Calibration Summary

Job Number: F30558  
 Account: TETRAPPT Tetra Tech NUS  
 Project: NAS Cecil Field-CTO-248

Sample: GPP107-ICC107  
 Lab FileID: PP002554.D

## Response Factor Report G1315B

Method : C:\HPCHEM\2\METHODS\8310\_32.M (Chemstation Integrator)  
 Title : PAH's BY EPA 8310  
 Last Update : Fri Jan 07 10:38:21 2005  
 Response via : Initial Calibration

### Calibration Files

L1 =PP002551.D L2 =PP002552.D L3 =PP002553.D L4 =PP002554.D  
 L5 =PP002555.D L6 =PP002556.D L7 =PP002557.D ICV =PP002558.D

Compound	L1	L2	L3	L4	L5	L6	L7	ICV	Avg	%RSD	
1) Naphthalene	5.004	4.797	4.920	5.002	5.009	4.941	4.984	4.785	4.930	E5	1.86
2) Acenaphthyle	2.057	1.922	1.948	1.960	2.004	1.972	1.992	1.913	1.971	E5	2.37
3) 1-Methyl Nap	4.070	3.987	4.089	4.070	4.169	4.105	4.151	4.142	4.098	E5	1.43
4) 2-Methyl Nap	4.065	4.022	4.138	4.121	4.223	4.163	4.222	3.990	4.118	E5	2.11
5) Acenaphthene	2.888	2.881	2.980	2.963	3.034	2.986	3.033	2.940	2.963	E5	1.96
6) Fluorene	1.158	1.126	1.153	1.147	1.174	1.154	1.169	1.119	1.150	E6	1.66
7) Phenanthrene	1.026	0.975	0.993	0.984	1.004	0.987	0.999	0.969	0.992	E6	1.81
8) O-Terphenyl	3.932	3.512	3.637	3.593	3.668	3.591	3.664		3.657	E5	3.63
9) Anthracene	1.285	1.152	1.300	1.223	1.167	1.104	1.090	1.086	1.176	E5	7.25
10) Fluoranthene	8.381	8.035	8.310	8.259	8.452	8.289	8.359	8.153	8.280	E5	1.60
11) Pyrene	1.314	1.255	1.290	1.274	1.285	1.237	1.206	1.258	1.265	E6	2.65
12) P-Terphenyl	1.420	1.329	1.354	1.349	1.383	1.399	1.410		1.378	E6	2.50
13) Benzo(a)Anth	2.292	2.172	2.216	2.204	2.256	2.213	2.221	2.170	2.218	E6	1.84
14) Chrysene	2.964	2.816	2.861	2.830	2.851	2.756	2.657	2.748	2.810	E6	3.26
15) Benzo(b)Fluo	1.095	1.062	1.085	1.086	1.116	1.096	1.107	1.074	1.090	E6	1.59
16) Benzo(k)Fluo	6.389	6.027	6.173	6.307	6.530	6.408	6.465	6.311	6.326	E5	2.57
17) Benzo(a)Pyr	1.136	1.105	1.139	1.140	1.175	1.157	1.175	1.100	1.141	E6	2.47
18) Dibenzo(a,h)	9.502	8.980	9.196	9.208	9.449	9.275	9.371	8.965	9.243	E5	2.15
19) Benzo(g,h,i)	6.093	5.833	5.954	5.965	6.170	6.115	6.213	6.217	6.070	E5	2.29
20) Indeno(1,2,3	5.098	4.590	4.730	4.735	4.841	4.762	4.808	4.588	4.769	E5	3.38

### Signal #2

1) Naphthalene	2.815	2.800	2.814	2.829	2.941	2.911	2.931	2.805	2.856	E5	2.12
2) Acenaphthyle	2.039	1.935	1.976	1.960	1.994	1.993	2.008	1.942	1.981	E5	1.75
3) 1-Methyl Nap	1.735	1.731	1.774	1.763	1.797	1.779	1.794	1.787	1.770	E5	1.42
4) 2-Methyl Nap	2.484	2.437	2.504	2.500	2.552	2.524	2.546	2.406	2.494	E5	2.04
5) Acenaphthene	1.093	1.073	1.014	1.035	1.050	1.010	1.014	0.995	1.035	E5	3.28
6) Fluorene	1.297	1.252	1.281	1.276	1.305	1.287	1.295	1.241	1.279	E6	1.76
7) Phenanthrene	3.449	3.320	3.378	3.343	3.367	3.236	2.972	3.319	3.298	E6	4.40
8) O-Terphenyl	6.615	6.051	6.088	6.091	6.218	6.095	6.176		6.190	E5	3.16
9) Anthracene	7.263	6.950	6.988	6.777	6.405	5.707	4.645	6.033	6.346	E6	13.59
10) Fluoranthene	0.094	7.796	8.073	8.124	8.300	8.155	8.264	8.045	8.106	E5	1.90
11) Pyrene	7.397	7.098	7.383	7.364	7.531	7.358	7.433	7.215	7.347	E5	1.82
12) P-Terphenyl	7.039	6.588	6.712	6.686	6.849	6.915	7.000		6.827	E5	2.49
13) Benzo(a)Anth	1.666	1.606	1.636	1.632	1.672	1.645	1.663	1.608	1.641	E6	1.55
14) Chrysene	2.386	2.296	2.343	2.333	2.381	2.336	2.336	2.267	2.335	E6	1.70
15) Benzo(b)Fluo	0.977	0.966	0.987	0.982	1.004	0.989	0.992	0.966	0.983	E6	1.32
16) Benzo(k)Fluo	1.508	1.424	1.460	1.459	1.495	1.473	1.485	1.439	1.468	E6	1.91
17) Benzo(a)Pyr	9.534	9.100	9.347	9.342	9.562	9.397	9.457	8.980	9.340	E5	2.18
18) Dibenzo(a,h)	2.416	2.326	2.371	2.363	2.391	2.321	2.291	2.303	2.348	E6	1.88
19) Benzo(g,h,i)	0.994	0.957	0.981	0.981	1.010	0.995	1.006	0.970	0.987	E6	1.83
20) Indeno(1,2,3	6.944	6.390	6.636	6.619	6.791	6.684	6.757	6.533	6.669	E5	2.50

(#) = Out of Range ### Number of calibration levels exceeded format ###

0022

# Initial Calibration Verification

Job Number: F30558  
Account: TETRAPPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GPP107-ICV107  
Lab FileID: PP002558.D

## Evaluate Continuing Calibration Report

Signal #1 : P:\HPCHEM\1\DATA\0106PAH\PP002558.D\dad1B.ch Vial: 10  
Signal #2 : P:\HPCHEM\1\DATA\0106PAH\PP002558.D\dad1A.ch  
Acq On : 06-Jan-2005, 15:22:11 Operator: MIKEE  
Sample : ICV107-20 Inst : G1315B  
Misc : OP12194,gpp107,1000,,,1,,water Multiplr: 1.00  
IntFile Signal #1: EVENTS2.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310\_32.M (Chemstation Integrator)  
Title : PAH's BY EPA 8310  
Last Update : Fri Jan 07 10:38:21 2005  
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.	%Drift	Area%	Dev(min)	RT Window
1	Naphthalene	20.000	19.411	2.9	100	0.00	3.85- 4.35
2	Acenaphthylene	20.000	19.408	3.0	100	0.00	4.37- 4.87
3	1-Methyl Naphthalene	20.000	20.218	-1.1	100	0.00	4.73- 5.23
4	2-Methyl Naphthalene	20.000	19.377	3.1	100	0.00	4.93- 5.43
5	Acenaphthene	20.000	19.847	0.8	100	0.00	5.16- 5.66
6	Fluorene	20.000	19.461	2.7	100	0.00	5.31- 5.81
7	Phenanthrene	10.000	9.771	2.3	100	0.00	5.88- 6.38
8 S	O-Terphenyl			NA			
9	Anthracene	20.000	18.474	7.6	100	0.00	6.44- 6.94
10	Fluoranthene	10.000	9.846	1.5	100	0.00	7.01- 7.51
11	Pyrene	10.000	9.945	0.5	100	0.00	7.48- 7.98
12 S	P-Terphenyl			NA			
13	Benzo (a) Anthracene	10.000	9.782	2.2	100	0.00	8.70- 9.20
14	Chrysene	10.000	9.778	2.2	100	0.00	9.01- 9.51
15	Benzo (b) Fluoranthene	10.000	9.854	1.5	100	0.01	9.90-10.40
16	Benzo (k) Fluoranthene	10.000	9.976	0.2	100	0.01	10.38-10.88
17	Benzo (a) Pyrene	10.000	9.644	3.6	100	0.01	10.88-11.38
18	Dibenzo (a,h) anthracene	10.000	9.699	3.0	100	0.03	11.37-12.37
19	Benzo (g,h,i) Perylene	10.000	10.243	-2.4	100	0.03	12.04-13.04
20	Indeno (1,2,3-cd) pyrene	10.000	9.621	3.8	100	0.03	12.49-13.49

\*\*\*\*\* Signal #2 \*\*\*\*\*

1	Naphthalene	20.000	19.647	1.8	100	0.00	3.85- 4.35
2	Acenaphthylene	20.000	19.613	1.9	100	0.00	4.37- 4.87
3	1-Methyl Naphthalene	20.000	20.195	-1.0	100	0.00	4.73- 5.23
4	2-Methyl Naphthalene	20.000	19.297	3.5	100	0.00	4.93- 5.43
5	Acenaphthene	20.000	19.216	3.9	100	0.00	5.16- 5.66
6	Fluorene	20.000	19.397	3.0	100	0.00	5.31- 5.81
7	Phenanthrene	10.000	10.063	-0.6	100	0.00	5.88- 6.38
8 S	O-Terphenyl			NA			
9	Anthracene	20.000	19.014	4.9	100	0.00	6.44- 6.94
10	Fluoranthene	10.000	9.925	0.7	100	0.00	7.01- 7.51
11	Pyrene	10.000	9.819	1.8	100	0.00	7.48- 7.98
12 S	P-Terphenyl			NA			
13	Benzo (a) Anthracene	10.000	9.797	2.0	100	0.00	8.70- 9.20
14	Chrysene	10.000	9.709	2.9	100	0.00	9.01- 9.51
15	Benzo (b) Fluoranthene	10.000	9.831	1.7	100	0.01	9.90-10.40
16	Benzo (k) Fluoranthene	10.000	9.801	2.0	100	0.01	10.38-10.88
17	Benzo (a) Pyrene	10.000	9.615	3.8	100	0.01	10.88-11.38
18	Dibenzo (a,h) anthracene	10.000	9.809	1.9	100	0.03	11.37-12.37

# Initial Calibration Verification

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GPP107-ICV107  
Lab FileID: PP002558.D

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19	Benzo(g,h,i) Perylene	10.000	9.827	1.7	100	0.03	12.04-13.04
20	Indeno(1,2,3-cd)pyrene	10.000	9.796	2.0	100	0.03	12.49-13.49

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(#) = Out of Range  
PP002558.D 8310\_32.M

SPCC's out = 0 CCC's out = 0  
Fri Jan 07 10:42:57 2005

0024

# Continuing Calibration Summary

Job Number: F30558  
 Account: TETRAPAT Tetra Tech NUS  
 Project: NAS Cecil Field-CTO-248

Sample: GPP162-CC107  
 Lab FileID: PP004054.D

## Evaluate Continuing Calibration Report

Signal #1 : P:\HPCHEM\1\DATA\0325PAH\PP004054.D\dad1B.ch Vial: 3  
 Signal #2 : P:\HPCHEM\1\DATA\0325PAH\PP004054.D\dad1A.ch  
 Acq On : 25-Mar-2005, 20:48:15 Operator: MIKEE  
 Sample : CC107-20 Inst : G1315B  
 Misc : OP12796,gpp162,1000,,,1,,water Multiplr: 1.00  
 IntFile Signal #1: EVENTS1.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310\_32.M (Chemstation Integrator)  
 Title : PAH's BY EPA 8310  
 Last Update : Tue Mar 01 14:00:58 2005  
 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.	%Drift	Area%	Dev(min)	RT Window
1	Naphthalene	20.000	20.322	-1.6	100	0.00	3.93- 4.43
2	Acenaphthylene	20.000	19.992	0.0	101	0.00	4.47- 4.97
3	1-Methyl Naphthalene	20.000	20.260	-1.3	102	0.00	4.83- 5.33
4	2-Methyl Naphthalene	20.000	20.537	-2.7	103	0.00	5.02- 5.52
5	Acenaphthene	20.000	20.316	-1.6	102	0.00	5.24- 5.74
6	Fluorene	20.000	20.419	-2.1	102	0.00	5.40- 5.90
7	Phenanthrene	20.000	20.173	-0.9	102	0.00	5.97- 6.47
8 S	O-Terphenyl	20.000	20.405	-2.0	104	0.00	6.26- 6.76
9	Anthracene	10.000	10.376	-3.8	100	0.00	6.53- 7.03
10	Fluoranthene	20.000	20.766	-3.8	104	0.01	7.11- 7.61
11	Pyrene	20.000	20.604	-3.0	102	0.00	7.57- 8.07
12 S	P-Terphenyl	20.000	20.999	-5.0	107	0.01	8.22- 8.72
13	Benzo (a) Anthracene	10.000	10.018	-0.2	101	0.02	8.78- 9.28
14	Chrysene	10.000	10.135	-1.3	101	0.02	9.09- 9.59
15	Benzo (b) Fluoranthene	10.000	10.038	-0.4	101	0.02	9.99-10.49
16	Benzo (k) Fluoranthene	10.000	10.235	-2.3	103	0.02	10.48-10.98
17	Benzo (a) Pyrene	10.000	10.525	-5.3	105	0.02	10.99-11.49
18	Dibenzo (a, h) anthracene	10.000	10.059	-0.6	101	0.03	11.52-12.52
19	Benzo (g, h, i) Perylene	10.000	10.141	-1.4	103	0.03	12.19-13.19
20	Indeno (1, 2, 3- cd) pyrene	10.000	10.073	-0.7	101	0.03	12.66-13.66

\*\*\*\*\* Signal #2 \*\*\*\*\*

1	Naphthalene	20.000	20.366	-1.8	103	0.00	3.93- 4.43
2	Acenaphthylene	20.000	19.975	0.1	101	0.00	4.47- 4.97
3	1-Methyl Naphthalene	20.000	20.317	-1.6	102	0.00	4.83- 5.33
4	2-Methyl Naphthalene	20.000	20.556	-2.8	103	0.00	5.02- 5.52
5	Acenaphthene	20.000	19.900	0.5	99	0.00	5.24- 5.74
6	Fluorene	20.000	20.435	-2.2	102	0.00	5.40- 5.90
7	Phenanthrene	20.000	20.672	-3.4	102	0.00	5.97- 6.47
8 S	O-Terphenyl	20.000	20.500	-2.5	104	0.00	6.26- 6.76
9	Anthracene	10.000	10.971	-9.7	103	0.00	6.53- 7.03
10	Fluoranthene	20.000	20.485	-2.4	102	0.01	7.11- 7.61
11	Pyrene	20.000	20.542	-2.7	102	0.00	7.57- 8.07
12 S	P-Terphenyl	20.000	20.964	-4.8	107	0.01	8.22- 8.72
13	Benzo (a) Anthracene	10.000	9.990	0.1	100	0.02	8.78- 9.28
14	Chrysene	10.000	10.047	-0.5	101	0.02	9.09- 9.59
15	Benzo (b) Fluoranthene	10.000	10.076	-0.8	101	0.02	9.99-10.49
16	Benzo (k) Fluoranthene	10.000	10.030	-0.3	101	0.02	10.48-10.98
17	Benzo (a) Pyrene	10.000	10.529	-5.3	105	0.02	10.99-11.49
18	Dibenzo (a, h) anthracene	10.000	10.145	-1.4	101	0.03	11.52-12.52

0025

# Continuing Calibration Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GPP162-CC107  
Lab FileID: PP004054.D

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19	Benzo(g,h,i) Perylene	10.000	10.325	-3.2	104	0.03	12.19-13.19
20	Indeno(1,2,3-cd)pyrene	10.000	10.117	-1.2	102	0.03	12.66-13.66

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(#) = Out of Range  
PP002554.D 8310\_32.M

SPCC's out = 0 CCC's out = 0  
Mon Mar 28 13:20:57 2005

0026

# Continuing Calibration Summary

Job Number: F30558  
 Account: TETRAPPT Tetra Tech NUS  
 Project: NAS Cecil Field-CTO 248

Sample: GPP162-CC107  
 Lab FileID: PP004062.D

## Evaluate Continuing Calibration Report

Signal #1 : P:\HPCHEM\1\DATA\0325PAH\PP004062.D\dad1B.ch Vial: 3  
 Signal #2 : P:\HPCHEM\1\DATA\0325PAH\PP004062.D\dad1A.ch  
 Acq On : 25-Mar-2005, 23:21:02 Operator: MIKEE  
 Sample : CC107-20 Inst : G1315B  
 Misc : OP12790,gpp162,30.0,,,5,,soil Multiplr: 1.00  
 IntFile Signal #1: EVENTS1.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310\_32.M (Chemstation Integrator)  
 Title : PAH's BY EPA 8310  
 Last Update : Tue Mar 01 14:00:58 2005  
 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.	%Drift	Area%	Dev(min)	RT Window
1	Naphthalene	20.000	20.340	-1.7	100	0.00	3.93- 4.43
2	Acenaphthylene	20.000	20.073	-0.4	101	0.00	4.47- 4.97
3	1-Methyl Naphthalene	20.000	20.288	-1.4	102	0.00	4.83- 5.33
4	2-Methyl Naphthalene	20.000	20.545	-2.7	103	0.00	5.02- 5.52
5	Acenaphthene	20.000	20.397	-2.0	102	0.00	5.24- 5.74
6	Fluorene	20.000	20.455	-2.3	103	0.00	5.40- 5.90
7	Phenanthrene	20.000	20.205	-1.0	102	0.00	5.97- 6.47
8 S	O-Terphenyl	20.000	20.434	-2.2	104	0.00	6.26- 6.76
9	Anthracene	10.000	10.339	-3.4	99	0.00	6.53- 7.03
10	Fluoranthene	20.000	20.498	-2.5	103	0.00	7.11- 7.61
11	Pyrene	20.000	20.637	-3.2	102	0.00	7.57- 8.07
12 S	P-Terphenyl	20.000	21.049	-5.2	107	0.00	8.22- 8.72
13	Benzo (a) Anthracene	10.000	10.054	-0.5	101	0.00	8.78- 9.28
14	Chrysene	10.000	10.171	-1.7	101	0.00	9.09- 9.59
15	Benzo (b) Fluoranthene	10.000	10.136	-1.4	102	0.00	9.99-10.49
16	Benzo (k) Fluoranthene	10.000	9.890	1.1	99	0.00	10.48-10.98
17	Benzo (a) Pyrene	10.000	10.371	-3.7	104	0.00	10.99-11.49
18	Dibenzo (a, h) anthracene	10.000	10.125	-1.3	102	0.00	11.52-12.52
19	Benzo (g, h, i) Perylene	10.000	10.007	-0.1	102	0.00	12.19-13.19
20	Indeno (1, 2, 3- cd) pyrene	10.000	10.410	-4.1	105	0.01	12.66-13.66

\*\*\*\*\* Signal #2 \*\*\*\*\*

1	Naphthalene	20.000	20.355	-1.8	103	0.00	3.93- 4.43
2	Acenaphthylene	20.000	20.057	-0.3	101	0.00	4.47- 4.97
3	1-Methyl Naphthalene	20.000	20.232	-1.2	102	0.00	4.83- 5.33
4	2 Methyl Naphthalene	20.000	20.399	-2.0	102	0.00	5.02- 5.52
5	Acenaphthene	20.000	19.631	1.8	98	0.00	5.24- 5.74
6	Fluorene	20.000	20.386	-1.9	102	0.00	5.40- 5.90
7	Phenanthrene	20.000	20.637	-3.2	102	0.00	5.97- 6.47
8 S	O-Terphenyl	20.000	20.281	-1.4	103	0.00	6.26- 6.76
9	Anthracene	10.000	10.898	-9.0	102	0.00	6.53- 7.03
10	Fluoranthene	20.000	20.284	-1.4	101	0.00	7.11- 7.61
11	Pyrene	20.000	20.465	-2.3	102	0.00	7.57- 8.07
12 S	P-Terphenyl	20.000	21.004	-5.0	107	0.00	8.22- 8.72
13	Benzo (a) Anthracene	10.000	10.043	-0.4	101	0.00	8.78- 9.28
14	Chrysene	10.000	10.101	-1.0	101	0.00	9.09- 9.59
15	Benzo (b) Fluoranthene	10.000	10.139	-1.4	101	0.00	9.99-10.49
16	Benzo (k) Fluoranthene	10.000	10.031	-0.3	101	0.00	10.48-10.98
17	Benzo (a) Pyrene	10.000	10.395	-3.9	104	0.00	10.99-11.49
18	Dibenzo (a, h) anthracene	10.000	10.211	-2.1	101	0.00	11.52-12.52

# Continuing Calibration Summary

Job Number: F30558  
Account: TETRAPAT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GPP162-CC107  
Lab FileID: PP004062.D

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19	Benzo(g,h,i) Perylene	10.000	10.303	-3.0	104	0.00	12.19-13.19
20	Indeno(1,2,3-cd)pyrene	10.000	10.286	-2.9	104	0.00	12.66-13.66

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(#) - Out of Range  
PP002554.D 8310\_32.M

SPCC's out = 0 CCC's out = 0  
Mon Mar 28 13:20:59 2005

0028

# Continuing Calibration Summary

Job Number: F30558  
 Account: TETRAPAT Tetra Tech NUS  
 Project: NAS Cecil Field-CTO-248

Sample: GPP162-ECC107  
 Lab FileID: PP004070.D

## Evaluate Continuing Calibration Report

Signal #1 : P:\HPCHEM\1\DATA\0325PAH\PP004070.D\dad1B.ch Vial: 3  
 Signal #2 : P:\HPCHEM\1\DATA\0325PAH\PP004070.D\dad1A.ch  
 Acq On : 26-Mar-2005, 01:53:58 Operator: MIKEE  
 Sample : ECC107-20 Inst : G1315B  
 Misc : OP12790,gpp162,30.0,,,5,,soil Multiplr: 1.00  
 IntFile Signal #1: EVENTS1.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310\_32.M (Chemstation Integrator)  
 Title : PAH's BY EPA 8310  
 Last Update : Tue Mar 01 14:00:58 2005  
 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.	%Drift	Area%	Dev(min)	RT Window
1 Naphthalene	20.000	20.268	-1.3	100	0.00	3.93- 4.43
2 Acenaphthylene	20.000	20.037	-0.2	101	0.00	4.47- 4.97
3 1-Methyl Naphthalene	20.000	20.291	-1.5	102	0.00	4.83- 5.33
4 2-Methyl Naphthalene	20.000	20.579	-2.9	103	0.00	5.02- 5.52
5 Acenaphthene	20.000	20.505	-2.5	103	0.01	5.24- 5.74
6 Fluorene	20.000	20.437	-2.2	102	0.01	5.40- 5.90
7 Phenanthrene	20.000	20.228	-1.1	102	0.01	5.97- 6.47
8 S O-Terphenyl	20.000	20.423	-2.1	104	0.01	6.26- 6.76
9 Anthracene	10.000	10.388	-3.9	100	0.00	6.53- 7.03
10 Fluoranthene	20.000	20.503	-2.5	103	0.00	7.11- 7.61
11 Pyrene	20.000	20.692	-3.5	103	0.00	7.57- 8.07
12 S P-Terphenyl	20.000	21.076	-5.4	108	0.00	8.22- 8.72
13 Benzo (a)Anthracene	10.000	10.072	-0.7	101	0.00	8.78- 9.28
14 Chrysene	10.000	10.197	-2.0	101	0.00	9.09- 9.59
15 Benzo (b)Fluoranthene	10.000	10.094	-0.9	101	0.00	9.99-10.49
16 Benzo (k)Fluoranthene	10.000	10.265	-2.7	103	0.00	10.48-10.98
17 Benzo (a) Pyrene	10.000	10.410	-4.1	104	0.00	10.99-11.49
18 Dibenzo (a, h)anthracene	10.000	10.118	-1.2	102	0.00	11.52-12.52
19 Benzo (g, h, i) Perylene	10.000	10.119	-1.2	103	0.00	12.19-13.19
20 Indeno (1, 2, 3-cd)pyrene	10.000	10.110	-1.1	102	0.00	12.66-13.66

\*\*\*\*\* Signal #2 \*\*\*\*\*

1 Naphthalene	20.000	20.291	-1.5	102	0.00	3.93- 4.43
2 Acenaphthylene	20.000	20.022	-0.1	101	0.00	4.47- 4.97
3 1-Methyl Naphthalene	20.000	20.230	-1.2	102	0.00	4.83- 5.33
4 2-Methyl Naphthalene	20.000	20.421	-2.1	102	0.00	5.02- 5.52
5 Acenaphthene	20.000	19.749	1.3	99	0.01	5.24- 5.74
6 Fluorene	20.000	20.367	-1.8	102	0.01	5.40- 5.90
7 Phenanthrene	20.000	20.646	-3.3	102	0.01	5.97- 6.47
8 S O-Terphenyl	20.000	20.238	-1.2	103	0.01	6.26- 6.76
9 Anthracene	10.000	10.916	-9.2	102	0.01	6.53- 7.03
10 Fluoranthene	20.000	20.292	-1.5	101	0.00	7.11- 7.61
11 Pyrene	20.000	20.531	-2.7	102	0.00	7.57- 8.07
12 S P-Terphenyl	20.000	21.046	-5.2	107	0.00	8.22- 8.72
13 Benzo (a)Anthracene	10.000	10.041	-0.4	101	0.00	8.78- 9.28
14 Chrysene	10.000	10.108	-1.1	101	0.00	9.09- 9.59
15 Benzo (b)Fluoranthene	10.000	10.120	-1.2	101	0.00	9.99-10.49
16 Benzo (k)Fluoranthene	10.000	10.074	-0.7	101	0.00	10.48-10.98
17 Benzo (a) Pyrene	10.000	10.427	-4.3	104	0.00	10.99-11.49
18 Dibenzo (a, h)anthracene	10.000	10.196	-2.0	101	0.00	11.52-12.52

0029

# Continuing Calibration Summary

Job Number: F30558  
Account: TETRAPAT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GPP162-ECC107  
Lab FileID: PP004070.D

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19	Benzo(g,h,i) Perylene	10.000	10.339	-3.4	104	0.00	12.19-13.19
20	Indeno(1,2,3-cd)pyrene	10.000	10.149	-1.5	102	0.00	12.66-13.66

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(#) - Out of Range  
PP002554.D 8310\_32.M

SPCC's out = 0 CCC's out = 0  
Mon Mar 28 13:21:00 2005

0030

# Continuing Calibration Summary

Job Number: F30558  
 Account: TETRAPAPT Tetra Tech NUS  
 Project: NAS Cecil Field-CTO-248

Sample: GPP163-CC107  
 Lab FileID: PP004072.D

## Evaluate Continuing Calibration Report

Signal #1 : P:\HPCHEM\1\DATA\0328PAH\PP004072.D\dad1B.ch Vial: 2  
 Signal #2 : P:\HPCHEM\1\DATA\0328PAH\PP004072.D\dad1A.ch  
 Acq On : 28-Mar-2005, 13:48:20 Operator: MIKEE  
 Sample : CC107-10 Inst : G1315B  
 Misc : OP12790,gpp163,30.0,,,5,,soil Multiplr: 1.00  
 IntFile Signal #1: EVENTS1.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310\_32.M (Chemstation Integrator)  
 Title : PAH's BY EPA 8310  
 Last Update : Tue Mar 01 14:00:58 2005  
 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.	%Drift	Area%	Dev(min)	RT	Window
1	Naphthalene	10.000	9.915	0.9	99	0.00	3.93	4.43
2	Acenaphthylene	10.000	9.802	2.0	99	0.00	4.47	4.97
3	1-Methyl Naphthalene	10.000	9.894	1.1	99	0.00	4.83	5.33
4	2-Methyl Naphthalene	10.000	10.057	-0.6	100	0.00	5.02	5.52
5	Acenaphthene	10.000	9.994	0.1	99	0.00	5.24	5.74
6	Fluorene	10.000	10.046	-0.5	100	0.00	5.40	5.90
7	Phenanthrene	10.000	9.951	0.5	99	0.00	5.97	6.47
8 S	O-Terphenyl	10.000	10.063	-0.6	101	0.00	6.26	6.76
9	Anthracene	5.000	5.377	-7.5	97	0.00	6.53	7.03
10	Fluoranthene	10.000	10.242	-2.4	102	0.00	7.11	7.61
11	Pyrene	10.000	10.244	-2.4	100	0.00	7.57	8.07
12 S	P-Terphenyl	10.000	10.354	-3.5	105	0.00	8.22	8.72
13	Benzo (a) Anthracene	5.000	4.948	1.0	99	0.00	8.78	9.28
14	Chrysene	5.000	5.047	-0.9	99	0.00	9.09	9.59
15	Benzo (b) Fluoranthene	5.000	4.933	1.3	99	0.00	9.99	10.49
16	Benzo (k) Fluoranthene	5.000	5.027	-0.5	103	0.00	10.48	10.98
17	Benzo (a) Pyrene	5.000	5.160	-3.2	103	0.00	10.99	11.49
18	Dibenzo (a,h) anthracene	5.000	4.935	1.3	99	0.00	11.52	12.52
19	Benzo (g,h,i) Perylene	5.000	4.965	0.7	101	0.00	12.19	13.19
20	Indeno (1,2,3-cd) pyrene	5.000	4.897	2.1	99	0.00	12.66	13.66

\*\*\*\*\* Signal #2 \*\*\*\*\*

1	Naphthalene	10.000	9.959	0.4	101	0.00	3.93	4.43
2	Acenaphthylene	10.000	9.850	1.5	99	0.00	4.47	4.97
3	1-Methyl Naphthalene	10.000	9.857	1.4	98	0.00	4.83	5.33
4	2-Methyl Naphthalene	10.000	9.922	0.8	99	0.00	5.02	5.52
5	Acenaphthene	10.000	9.506	4.9	97	0.00	5.24	5.74
6	Fluorene	10.000	9.958	0.4	99	0.00	5.40	5.90
7	Phenanthrene	10.000	10.180	-1.9	99	0.00	5.97	6.47
8 S	O-Terphenyl	10.000	9.915	0.9	101	0.00	6.26	6.76
9	Anthracene	5.000	5.548	-11.0	101	0.00	6.53	7.03
10	Fluoranthene	10.000	10.178	-1.8	102	0.00	7.11	7.61
11	Pyrene	10.000	10.104	-1.0	101	0.00	7.57	8.07
12 S	P-Terphenyl	10.000	10.341	-3.4	105	0.00	8.22	8.72
13	Benzo (a) Anthracene	5.000	4.931	1.4	99	0.00	8.78	9.28
14	Chrysene	5.000	4.968	0.6	99	0.00	9.09	9.59
15	Benzo (b) Fluoranthene	5.000	4.968	0.6	99	0.00	9.99	10.49
16	Benzo (k) Fluoranthene	5.000	4.937	1.3	99	0.00	10.48	10.98
17	Benzo (a) Pyrene	5.000	5.181	-3.6	104	0.00	10.99	11.49
18	Dibenzo (a,h) anthracene	5.000	5.018	-0.4	99	0.00	11.52	12.52

0031

# Continuing Calibration Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cccil Field-CTO-248

Sample: GPP163-CC107  
Lab FileID: PP004072.D

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19	Benzo(g,h,i) Perylene	5.000	5.083	-1.7	102	0.00	12.19-13.19
20	Indeno(1,2,3-cd)pyrene	5.000	4.926	1.5	99	0.00	12.66-13.66

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(#) = Out of Range  
PP002553.D 8310\_32.M

SPCC's out = 0 CCC's out = 0  
Tue Mar 29 14:57:21 2005

0032

# Continuing Calibration Summary

Job Number: F30558  
 Account: TETRAPAT Tetra Tech NUS  
 Project: NAS Cccil Field-CTO-248

Sample: GPP163-CC107  
 Lab FileID: PP004082.D

## Evaluate Continuing Calibration Report

Signal #1 : P:\HPCHEM\1\DATA\0328PAH\PP004082.D\dad1B.ch Vial: 3  
 Signal #2 : P:\HPCHEM\1\DATA\0328PAH\PP004082.D\dad1A.ch  
 Acq On : 28-Mar-2005, 16:59:22 Operator: MIKEE  
 Sample : CC107-20 Inst : G1315B  
 Misc : OP12754,gpp163,1000,,1,,water Multiplr: 1.00  
 IntFile Signal #1: EVENTS1.E IntFile Signal #2: events2.e

Method : C:\HPCHEM\2\METHODS\8310\_32.M (Chemstation Integrator)  
 Title : PAH's BY EPA 8310  
 Last Update : Tue Mar 01 14:00:58 2005  
 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.	%Drift	Area%	Dev(min)	RT Window
1	Naphthalene	20.000	19.750	1.3	97	0.00	3.93- 4.43
2	Acenaphthylene	20.000	19.588	2.1	99	0.00	4.47- 4.97
3	1-Methyl Naphthalene	20.000	19.780	1.1	100	0.00	4.83- 5.33
4	2-Methyl Naphthalene	20.000	20.092	-0.5	100	0.00	5.02- 5.52
5	Acenaphthene	20.000	20.094	-0.5	100	0.00	5.24- 5.74
6	Fluorene	20.000	20.012	-0.1	100	0.00	5.40- 5.90
7	Phenanthrene	20.000	19.810	1.0	100	0.00	5.97- 6.47
8 S	O-Terphenyl	20.000	20.017	-0.1	102	0.00	6.26- 6.76
9	Anthracene	10.000	10.177	-1.8	98	0.00	6.53- 7.03
10	Fluoranthene	20.000	20.049	-0.2	100	0.00	7.11- 7.61
11	Pyrene	20.000	20.220	-1.1	100	0.00	7.57- 8.07
12 S	P-Terphenyl	20.000	20.658	-3.3	105	0.00	8.22- 8.72
13	Benzo (a) Anthracene	10.000	9.860	1.4	99	0.00	8.78- 9.28
14	Chrysene	10.000	9.982	0.2	99	0.00	9.09- 9.59
15	Benzo (b) Fluoranthene	10.000	9.880	1.2	99	0.00	9.99-10.49
16	Benzo (k) Fluoranthene	10.000	10.185	-1.9	102	0.00	10.48-10.98
17	Benzo (a) Pyrene	10.000	10.356	-3.6	104	0.00	10.99-11.49
18	Dibenzo (a, h) anthracene	10.000	9.880	1.2	99	0.00	11.52-12.52
19	Benzo (g, h, i) Perylene	10.000	9.897	1.0	101	0.00	12.19-13.19
20	Indeno (1, 2, 3-cd) pyrene	10.000	9.966	0.3	100	0.00	12.66-13.66

\*\*\*\*\* Signal #2 \*\*\*\*\*

1	Naphthalene	20.000	19.810	1.0	100	0.00	3.93- 4.43
2	Acenaphthylene	20.000	19.588	2.1	99	0.00	4.47- 4.97
3	1-Methyl Naphthalene	20.000	19.630	1.9	99	0.00	4.83- 5.33
4	2-Methyl Naphthalene	20.000	19.756	1.2	99	0.00	5.02- 5.52
5	Acenaphthene	20.000	19.010	4.9	95	0.00	5.24- 5.74
6	Fluorene	20.000	19.829	0.9	99	0.00	5.40- 5.90
7	Phenanthrene	20.000	20.165	-0.9	99	0.00	5.97- 6.47
8 S	O-Terphenyl	20.000	19.701	1.5	100	0.00	6.26- 6.76
9	Anthracene	10.000	10.724	-7.2	100	0.00	6.53- 7.03
10	Fluoranthene	20.000	20.289	-1.4	101	0.00	7.11- 7.61
11	Pyrene	20.000	20.060	-0.3	100	0.00	7.57- 8.07
12 S	P-Terphenyl	20.000	20.617	-3.1	105	0.00	8.22- 8.72
13	Benzo (a) Anthracene	10.000	9.827	1.7	99	0.00	8.78- 9.28
14	Chrysene	10.000	9.875	1.3	99	0.00	9.09- 9.59
15	Benzo (b) Fluoranthene	10.000	9.881	1.2	99	0.00	9.99-10.49
16	Benzo (k) Fluoranthene	10.000	9.836	1.6	99	0.00	10.48-10.98
17	Benzo (a) Pyrene	10.000	10.354	-3.5	104	0.00	10.99-11.49
18	Dibenzo (a, h) anthracene	10.000	9.962	0.4	99	0.00	11.52-12.52

033

# Continuing Calibration Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GPP163-CC107  
Lab FileID: PP004082.D

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19	Benzo(g,h,i) Perylene	10.000	10.142	-1.4	102	0.00	12.19-13.19
20	Indeno(1,2,3-cd)pyrene	10.000	9.926	0.7	100	0.00	12.66-13.66

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(#) = Out of Range  
PP002554.D 8310\_32.M

SPCC's out = 0 CCC's out = 0  
Tue Mar 29 14:57:44 2005

0034

### Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB006-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-1	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 86.5
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP48296.D	1	03/28/05	SM	03/24/05	OP12789	GOP1417
Run #2							

Run #	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)	11.6	9.5	6.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	96%		59-121%		

0035

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

### Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB001-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-2	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.1
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IJ22607.D	1	03/26/05	SM	03/24/05	OP12789	GIJ1112
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	13.5	9.3	6.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	102%		59-121%		

0036

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

**Report of Analysis**

<b>Client Sample ID:</b> CEF-B290A-SB002-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-3	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 93.8
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IJ22608.D	1	03/26/05	SM	03/24/05	OP12789	GIJ1112
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	18.8	8.8	6.0	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	101%		59-121%

0037

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

**Report of Analysis**

<b>Client Sample ID:</b> CEF-B290A-SB-DU02	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-4	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.5
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	II22609.D	1	03/26/05	SM	03/24/05	OP12789	GIJ1112
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	10.5	9.1	6.2	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	108%		59-121%

0038

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

# Method Blank Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12789-MB	IJ22592.D	1	03/26/05	SM	03/24/05	OP12789	GIJ1112

The QC reported here applies to the following samples:

Method: FLORIDA-PRO

F30558-1, F30558-2, F30558-3, F30558-4

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	83% 59-121%

0039

# Method Blank Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12789-MB	OP48294.D	1	03/28/05	SM	03/24/05	OP12789	GOP1417

The QC reported here applies to the following samples:

Method: FLORIDA-PRO

F30558-1, F30558-2, F30558-3, F30558-4

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	91% 59-121%

0040

# Blank Spike Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12789-BS	IJ22591.D	1	03/26/05	SM	03/24/05	OP12789	GIJ1112

The QC reported here applies to the following samples:

Method: FLORIDA-PRO

F30558-1, F30558-2, F30558-3, F30558-4

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C8-C40)	28.3	24.0	85	70-115

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

0047

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F30558  
 Account: TETRPAPT Tetra Tech NUS  
 Project: NAS Cecil Field-CTO-248

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12789-MS	OP48297.D	1	03/28/05	SM	03/24/05	OP12789	GOP1417
OP12789-MSD	OP48298.D	1	03/28/05	SM	03/24/05	OP12789	GOP1417
F30558-1	OP48296.D	1	03/28/05	SM	03/24/05	OP12789	GOP1417

The QC reported here applies to the following samples:

Method: FLORIDA-PRO

F30558-1, F30558-2, F30558-3, F30558-4

CAS No.	Compound	F30558-1 mg/kg	Spike Q mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C8-C40)	11.6	32.4	39.4	86	46.2	108	16	42-131/28

CAS No.	Surrogate Recoveries	MS	MSD	F30558-1	Limits
84-15-1	o-Terphenyl	94%	91%	96%	59-121%

0042

# Semivolatile Surrogate Recovery Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Method: FLORIDA-PRO	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 <sup>a</sup>
F30558-1	OP48296.D	96.0
F30558-2	IJ22607.D	102.0
F30558-3	IJ22608.D	101.0
F30558-4	IJ22609.D	108.0
OP12789-BS	IJ22591.D	88.0
OP12789-MB	IJ22592.D	83.0
OP12789-MB	OP48294.D	91.0
OP12789-MS	OP48297.D	94.0
OP12789-MSD	OP48298.D	91.0

Surrogate Compounds	Recovery Limits
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S1 = o-Terphenyl	59-121%
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(a) Recovery from GC signal #1

0043

# GC Surrogate Retention Time Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Check Std:	GIJ1112-CC1107	Injection Date:	03/26/05
Lab File ID:	IJ22590.D	Injection Time:	01:40
Instrument ID:	GCIJ	Method:	FLORIDA-PRO

S1<sup>a</sup>  
RT

Check Std	5.54
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 <sup>a</sup> RT
OP12789-BS	IJ22591.D	03/26/05	02:03	5.54
OP12789-MB	IJ22592.D	03/26/05	02:25	5.54
ZZZZZZ	IJ22593.D	03/26/05	02:47	5.53
ZZZZZZ	IJ22594.D	03/26/05	03:09	5.54
ZZZZZZ	IJ22595.D	03/26/05	03:32	5.53
ZZZZZZ	IJ22596.D	03/26/05	03:54	5.53
ZZZZZZ	IJ22598.D	03/26/05	04:38	5.54
ZZZZZZ	IJ22599.D	03/26/05	05:00	5.53
ZZZZZZ	IJ22600.D	03/26/05	05:23	5.53

Surrogate  
Compounds

S1 = o-Terphenyl

(a) Retention time from GC signal #1

0044

# GC Surrogate Retention Time Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Check Std:	GIJ1112-CC1107	Injection Date:	03/26/05
Lab File ID:	IJ22601.D	Injection Time:	05:45
Instrument ID:	GCIJ	Method:	FLORIDA-PRO

S1<sup>a</sup>  
RT

Check Std	5.54
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 <sup>a</sup> RT
ZZZZZZ	IJ22602.D	03/26/05	06:07	5.54
ZZZZZZ	IJ22603.D	03/26/05	06:29	5.53
F30558-2	IJ22607.D	03/26/05	07:58	5.53
F30558-3	IJ22608.D	03/26/05	08:21	5.54
F30558-4	IJ22609.D	03/26/05	08:43	5.53
GIJ1112-ECC1107	IJ22610.D	03/26/05	09:04	5.53

### Surrogate Compounds

S1 = o-Terphenyl

(a) Retention time from GC signal #1

0045

# GC Surrogate Retention Time Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Check Std:	GOP1417-CC1383	Injection Date:	03/28/05
Lab File ID:	OP48289.D	Injection Time:	15:04
Instrument ID:	GCOP	Method:	FLORIDA-PRO

S1<sup>a</sup>  
RT

Check Std	5.03
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Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	S1 <sup>a</sup> RT
ZZZZZZ	OP48293.D	03/28/05	16:28	5.03
OP12789-MB	OP48294.D	03/28/05	16:49	5.03
ZZZZZZ	OP48295.D	03/28/05	17:10	5.03
F30558-1	OP48296.D	03/28/05	17:31	5.03
OP12789-MS	OP48297.D	03/28/05	17:52	5.03
OP12789-MSD	OP48298.D	03/28/05	18:13	5.03
GOP1417-ECC1380	OP48299.D	03/28/05	18:34	5.03

### Surrogate Compounds

S1 = o-Terphenyl

(a) Retention time from GC signal #1

0046

# Initial Calibration Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cccil Field-CTO-248

Sample: GU1107-ICC1107  
Lab FileID: IJ22462.D

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Response Factor Report FID 1

Method : C:\HPCHEM\1\METHODS\FL\_PRO\_F.M (Chemstation Integrator)  
Title : TPH by FL\_PRO  
Last Update : Fri Mar 18 13:10:37 2005  
Response via : Initial Calibration

Calibration Files

1 =IJ22460.D 2 =IJ22461.D 3 =IJ22462.D 4 =IJ22463.D  
5 =IJ22464.D 6 =IJ22465.D 7 =IJ22466.D icv =IJ22467.D

Compound	1	2	3	4	5	6	7	icv	Avg %RSD
1) O-TERPHENYL	1.405	1.395	1.450	1.463	1.409			1.424 E4	2.12
2) TPH (C8-C40)	1.417	1.367	1.410	1.414	1.356	1.306	1.294	1.366 E4	3.74

(#) - Out of Range ### Number of calibration levels exceeded format ###

FL\_PRO\_F.M

Sat Mar 19 11:24:13 2005

0047

# Initial Calibration Verification

Job Number: F30558  
Account: TETRAPAT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GIJ1107-ICV1107  
Lab FileID: IJ22467.D

## Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\0318PRO\IJ22467.D Vial: 9  
Acq On : 18 Mar 2005 12:49 pm Operator: sarahm  
Sample : icv1107-850 Inst : FID 1  
Misc : op12726,gij1107,30.0,,,1,1,soil Multiplr: 1.00  
IntFile : events.e

Method : C:\HPCHEM\1\METHODS\FL\_PRO\_F.M (Chemstation Integrator)  
Title : TPH by FL\_PRO  
Last Update : Fri Mar 18 13:10:37 2005  
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.	%Drift	Area%	Dev(min)	RT	Window
1 S	O-TERPHENYL				NA			
2 H	TPH (C8-C40)	850.000	913.656	-7.5	0	0.00	2.47-11.59	

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

IJ22467.D FL\_PRO\_F.M

Sat Mar 19 11:51:34 2005

0048

# Continuing Calibration Summary

Job Number: F30558  
Account: TETRAPAT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GJ1112-CC1107  
Lab FileID: IJ22590.D

## Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\0325PRO\IJ22590.D Vial: 1  
Acq On : 26 Mar 2005 1:40 am Operator: sarahm  
Sample : cc1107-1020 Inst : FID 1  
Misc : op12795,gij1112,1010,,,1,1,water Multiplr: 1.00  
IntFile : events.e

Method : C:\HPCHEM\1\METHODS\FL\_PRO\_F.M (Chemstation Integrator)  
Title : TPH by FL\_PRO  
Last Update : Fri Mar 25 15:08:45 2005  
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.	%Drift	Area%	Dev(min)	RT Window
1 S	O-TERPHENYL	60.000	58.677	2.2	96	0.00	5.43- 5.63
2 H	TPH (C8-C40)	1020.000	1043.522	-2.3	99	0.00	2.44-11.51

(#) = Out of Range

IJ22462.D FL\_PRO\_F.M

SPCC's out = 0 CCC's out = 0

Mon Mar 28 08:03:59 2005

0049

# Continuing Calibration Summary

Job Number: F30558  
Account: TETRAPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GIJ1112-CC1107  
Lab FileID: IJ22601.D

## Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\0325PRO\IJ22601.D Vial: 1  
Acq On : 26 Mar 2005 5:45 am Operator: sarahm  
Sample : cc1107-1020 Inst : FID 1  
Misc : op12789,gij1112,30.6,,,1,1,soil Multiplr: 1.00  
IntFile : events.e

Method : C:\HPCHEM\1\METHODS\FL\_PRO\_F.M (Chemstation Integrator)  
Title : TPH by FL\_PRO  
Last Update : Fri Mar 25 15:08:45 2005  
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.	%Drift	Area%	Dev(min)	RT Window
1 S	O-TERPHENYL	60.000	74.280	-23.8	122	0.00	5.43- 5.63
2 H	TPH (C8-C40)	1020.000	1263.171	-23.8	120	0.00	2.44-11.51

(#) = Out of Range  
IJ22462.D FL\_PRO\_F.M

SPCC's out = 0 CCC's out = 0  
Mon Mar 28 08:03:59 2005

0050

# Continuing Calibration Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cccil Field-CTO-248

Sample: GIJ1112-ECC1107  
Lab FileID: IJ22610.D

## Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\0325PRO\IJ22610.D Vial: 1  
Acq On : 26 Mar 2005 9:04 am Operator: sarahm  
Sample : ecc1107-1020 Inst : FID 1  
Misc : op12789,gij1112,30.6,,,1,1,soil Multiplr: 1.00  
IntFile : events.e

Method : C:\HPCHEM\1\METHODS\FL\_PRO\_F.M (Chemstation Integrator)  
Title : TPH by FL\_PRO  
Last Update : Fri Mar 25 15:08:45 2005  
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.	%Drift	Area%	Dev(min)	RT Window
1 S	O-TERPHENYL	60.000	75.410	-25.7#	123	0.00	5.43- 5.63
2 H	TPH (C8-C40)	1020.000	1263.342	-23.9	120	0.00	2.44-11.51

(#) = Out of Range SPCC's out = 0 CCC's out = 0  
IJ22462.D FL\_PRO\_F.M Mon Mar 28 08:04:00 2005

0051

# Initial Calibration Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cccil Field-CTO-248

Sample: GOP1383-ICC1383  
Lab FileID: OP46584.D

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## Response Factor Report FID 2

Method : C:\HPCHEM\2\METHODS\FL\_PRO\_F.M (Chemstation Integrator)  
Title : TPH by FL\_PRO  
Last Update : Tue Feb 01 13:57:46 2005  
Response via : Initial Calibration

### Calibration Files

1 =OP46585.D 2 =OP46586.D 3 =OP46584.D 4 =OP46587.D  
5 =OP46588.D 6 =OP46589.D 7 =OP46590.D ICV =OP46432.D

Compound	1	2	3	4	5	6	7	ICV	Avg %RSD
1) O-TERPHENYL	2.024	2.015	1.979	2.399	2.122			2.108 E4	8.11
2) TPH (C8-C40)	2.006	1.928	1.889	2.233	1.974	1.821	1.688	1.934 E4	8.74

(#) = Out of Range ### Number of calibration levels exceeded format ###

FL\_PRO\_F.M

Wed Feb 02 07:10:54 2005

0052

# Initial Calibration Verification

Job Number: F30558  
Account: TETRAPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GOP1383-ICV1383  
Lab FileID: OP46591.D

## Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\2\DATA\0201PRO\OP46591.D Vial: 8  
Acq On : 1 Feb 2005 1:39 pm Operator: sarahm  
Sample : icv1383-850 Inst : FID 2  
Misc : op12390,gop1383,1000,,,1,1,water Multiplr: 1.00  
IntFile : events.e

Method : C:\HPCHEM\2\METHODS\FL\_PRO\_F.M (Chemstation Integrator)  
Title : TPH by FL\_PRO  
Last Update : Tue Feb 01 13:57:46 2005  
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.	%Drift	Area%	Dev (min)	RT Window
1 S O-TERPHENYL			-----NA-----			
2 H TPH (C8-C40)	850.000	882.109	-3.8	0	0.00	1.97-10.66

(#) = Out of Range SPCC's out = 0 CCC's out = 0  
OP46432.D FL\_PRO\_F.M Wed Feb 02 07:09:53 2005

0053

# Continuing Calibration Summary

Job Number: F30558  
Account: TETRAPAT Tetra Tech NUS  
Project: NAS Cecil Field-CTO 248

Sample: GOP1417-CC1383  
Lab FileID: OP48289.D

## Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\2\DATA\0328PRO\OP48289.D Vial: 1  
Acq On : 28 Mar 2005 3:04 pm Operator: sarahm  
Sample : cc1383-1020 Inst : FID 2  
Misc : cp12795,gop1417,1050,,,1,40,water Multiplr: 1.00  
IntFile : events.e

Method : C:\HPCHEM\2\METHODS\FL\_PRO\_F.M (Chemstation Integrator)  
Title : TPH by FL\_PRO  
Last Update : Fri Mar 25 12:39:14 2005  
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.	%Drift	Area%	Dev(min)	RT Window
1 S	O-TERPHENYL	60.000	61.454	-2.4	109	0.00	4.93- 5.13
2 H	TPH (C8-C40)	1020.000	1044.457	-2.4	105	0.00	1.49- 9.62

(#) = Out of Range SPCC's out = 0 CCC's out = 0  
OP46584.D FL\_PRO\_F.M Tue Mar 29 08:23:20 2005

0054

# Continuing Calibration Summary

Job Number: F30558  
Account: TETRPAPT Tetra Tech NUS  
Project: NAS Cecil Field-CTO-248

Sample: GOP1417-ECC1383  
Lab FileID: OP48299.D

## Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\2\DATA\0328PRO\OP48299.D                      Vial: 1  
Acq On : 28 Mar 2005 6:34 pm    Operator: sarahm  
Sample : ecc1383-1020    Inst : FID 2  
Misc : op12789,gop1417,30.6,,,1,1,soil                                  Multiplr: 1.00  
IntFile : events.e

Method : C:\HPCHEM\2\METHODS\FL\_PRO\_F.M (Chemstation Integrator)  
Title : TPH by FL\_PRO  
Last Update : Fri Mar 25 12:39:14 2005  
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.	%Drift	Area%	Dev (min)	RT Window
1 S O-TERPHENYL	60.000	64.255	-7.1	114	0.00	4.93- 5.13
2 H TPH (C8-C40)	1020.000	1070.149	-4.9	107	0.00	1.49- 9.62

(#) = Out of Range                      SPCC's out = 0    CCC's out = 0  
OP46584.D FL\_PRO\_F.M                      Tue Mar 29 08:23:20 2005

0055

### Sample Summary

Tetra Tech NUS

Job No: F30558

NAS Cecil Field-CTO-248

Project No: N4242-WR#1001712/ Tank 290A

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
F30558-1	03/22/05	11:25 MD	03/23/05	SO	Soil	CEF-B290A-SB006-01
F30558-1D	03/22/05	11:25 MD	03/23/05	SO	Soil Dup/MSD	CEF-B290A-SB006-01
F30558-1S	03/22/05	11:25 MD	03/23/05	SO	Soil Matrix Spike	CEF-B290A-SB006-01
F30558-2	03/22/05	11:40 MD	03/23/05	SO	Soil	CEF-B290A-SB001-01
F30558-3	03/22/05	11:53 MD	03/23/05	SO	Soil	CEF-B290A-SB002-01
F30558-4	03/22/05	00:00 MD	03/23/05	SO	Soil	CEF-B290A-SB-DU02

0057

### Sample Summary

Tetra Tech NUS

Job No: F30558

NAS Cecil Field-CTO-248

Project No: N4242-WR#1001712/ Tank 290A

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
F30558-1	03/22/05	11:25 MD	03/23/05	SO	Soil	CEF-B290A-SB006-01
F30558-1D	03/22/05	11:25 MD	03/23/05	SO	Soil Dup/MSD	CEF-B290A-SB006-01
F30558-1S	03/22/05	11:25 MD	03/23/05	SO	Soil Matrix Spike	CEF-B290A-SB006-01
F30558-2	03/22/05	11:40 MD	03/23/05	SO	Soil	CEF-B290A-SB001-01
F30558-3	03/22/05	11:53 MD	03/23/05	SO	Soil	CEF-B290A-SB002-01
F30558-4	03/22/05	00:00 MD	03/23/05	SO	Soil	CEF-B290A-SB-DU02

0058

## Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB006-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-1	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 86.5
<b>Method:</b> SW846 8310 SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004064.D	1	03/25/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.3 g	5.0 ml
Run #2		

## Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	190 U	760	190	ug/kg	
208-96-8	Acenaphthylene	190 U	760	190	ug/kg	
120-12-7	Anthracene	190 U	380	190	ug/kg	
56-55-3	Benzo(a)anthracene	95 U	380	95	ug/kg	
50-32-8	Benzo(a)pyrene	19 U	76	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	19 U	76	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19 U	76	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	19 U	76	19	ug/kg	
218-01-9	Chrysene	95 U	380	95	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	19 U	76	19	ug/kg	
206-44-0	Fluoranthene	95 U	380	95	ug/kg	
86-73-7	Fluorene	190 U	380	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19 U	76	19	ug/kg	
91-20-3	Naphthalene	95 U	380	95	ug/kg	
90-12-0	1-Methylnaphthalene	95 U	380	95	ug/kg	
91-57-6	2-Methylnaphthalene	95 U	380	95	ug/kg	
85-01-8	Phenanthrene	190 U	380	190	ug/kg	
129-00-0	Pyrene	95 U	380	95	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	53%		49-124%
92-94-4	p-Terphenyl	57%		56-141%

0059

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

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

## Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB001-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-2	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.1
<b>Method:</b> SW846 8310 SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004067.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #	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	190 U	750	190	ug/kg	
208-96-8	Acenaphthylene	190 U	750	190	ug/kg	
120-12-7	Anthracene	190 U	370	190	ug/kg	
56-55-3	Benzo(a)anthracene	93 U	370	93	ug/kg	
50-32-8	Benzo(a)pyrene	19 U	75	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	19 U	75	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19 U	75	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	19 U	75	19	ug/kg	
218-01-9	Chrysene	93 U	370	93	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	19 U	75	19	ug/kg	
206-44-0	Fluoranthene	93 U	370	93	ug/kg	
86-73-7	Fluorene	190 U	370	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19 U	75	19	ug/kg	
91-20-3	Naphthalene	93 U	370	93	ug/kg	
90-12-0	1-Methylnaphthalene	93 U	370	93	ug/kg	
91-57-6	2-Methylnaphthalene	93 U	370	93	ug/kg	
85-01-8	Phenanthrene	190 U	370	190	ug/kg	
129-00-0	Pyrene	93 U	370	93	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		49-124%
92-94-4	p-Terphenyl	91%		56-141%

0060

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

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

## Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB002-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-3	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 93.8
<b>Method:</b> SW846 8310 SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004068.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 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	86%		49-124%
92-94-4	p-Terphenyl	87%		56-141%

0061

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

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

**Report of Analysis**

<b>Client Sample ID:</b> CEF-B290A-SB-DU02	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-4	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.5
<b>Method:</b> SW846 8310 SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004069.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.5 g	5.0 ml
Run #2		

**Polynuclear Aromatic Hydrocarbons**

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	180 U	730	180	ug/kg	
208-96-8	Acenaphthylene	180 U	730	180	ug/kg	
120-12-7	Anthracene	180 U	370	180	ug/kg	
56-55-3	Benzo(a)anthracene	92 U	370	92	ug/kg	
50-32-8	Benzo(a)pyrene	18 U	73	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	18 U	73	18	ug/kg	
191-24-2	Benzo(g,h,i)perylene	18 U	73	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	18 U	73	18	ug/kg	
218-01-9	Chrysene	92 U	370	92	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	18 U	73	18	ug/kg	
206-44-0	Fluoranthene	92 U	370	92	ug/kg	
86-73-7	Fluorene	180 U	370	180	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	18 U	73	18	ug/kg	
91-20-3	Naphthalene	92 U	370	92	ug/kg	
90-12-0	1-Methylnaphthalene	92 U	370	92	ug/kg	
91-57-6	2-Methylnaphthalene	92 U	370	92	ug/kg	
85-01-8	Phenanthrene	180 U	370	180	ug/kg	
129-00-0	Pyrene	92 U	370	92	ug/kg	

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

0062

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

**Report of Analysis**

<b>Client Sample ID:</b> CEF-B290A-SB006-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-1	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 86.5
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP48296.D	1	03/28/05	SM	03/24/05	OP12789	GOP1417
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	O
	TPH (C8-C40)	11.6	9.5	6.5	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	96%		59-121%

0063

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

### Report of Analysis

<b>Client Sample ID:</b>	CEF-B290A-SB001-01	<b>Date Sampled:</b>	03/22/05
<b>Lab Sample ID:</b>	F30558-2	<b>Date Received:</b>	03/23/05
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	89.1
<b>Method:</b>	FLORIDA-PRO SW846 3550B		
<b>Project:</b>	NAS Cecil Field-CTO-248		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IJ22607.D	1	03/26/05	SM	03/24/05	OP12789	GIJ1112
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	13.5	9.3	6.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	102%		59-121%

0064

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

**Report of Analysis**

<b>Client Sample ID:</b> CEF-B290A-SB002-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-3	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 93.8
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IJ22608.D	1	03/26/05	SM	03/24/05	OP12789	GII1112
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	18.8	8.8	6.0	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	101%		59-121%		

0065

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

**Report of Analysis**

<b>Client Sample ID:</b> CEF-B290A-SB-DU02	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-4	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.5
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IJ22609.D	1	03/26/05	SM	03/24/05	OP12789	GIJ1112
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RI	MDL	Units	Q
	TPH (C8-C40)	10.5	9.1	6.2	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	108%		59-121%		

0066

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

**PROJ\_NO: 4248**

SDG: F30558 MEDIA: SOIL DATA FRACTION: FAH

nsample CEF-B290A-SB001-01  
 samp\_date 3/22/2005  
 lab\_id F30558-2  
 qc\_type NM  
 units UG/K3  
 Pct\_Solids 89.1  
 DUP\_OF:

nsample CEF-B290A-SB002-01  
 samp\_date 3/22/2005  
 lab\_id F30558-3  
 qc\_type NM  
 units UG/KG  
 Pct\_Solids 93.8  
 DUP\_OF:

nsample CEF-B290A-SB006-01  
 samp\_date 3/22/2005  
 lab\_id F30558-1  
 qc\_type NM  
 units UG/KG  
 Pct\_Solids 86.5  
 DUP\_OF:

Parameter	Result	Lab Qual	Val Qual	Qual Code
1-METHYLNAPHTHALENE	93	L	U	
2-METHYLNAPHTHALENE	93	L	U	
ACENAPHTHENE	190	L	U	
ACENAPHTHYLENE	190	L	U	
ANTHRACENE	190	L	U	
BENZO(A)ANTHRACENE	93	L	U	
BENZO(A)PYRENE	19	U	U	
BENZO(B)FLUORANTHENE	19	U	U	
BENZO(G,H,I)PERYLENE	19	U	U	
BENZO(K)FLUORANTHENE	19	U	U	
CHRYSENE	93	U	U	
DIBENZO(A,H)ANTHRACENE	19	U	U	
FLUORANTHENE	93	U	U	
FLUORENE	190	U	U	
INDENO(1,2,3-CD)PYRENE	19	U	U	
NAPHTHALENE	93	U	U	
PHENANTHRENE	190	U	U	
PYRENE	93	U	U	

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

Parameter	Result	Lab Qual	Val Qual	Qual Code
1-METHYLNAPHTHALENE	95	U	U	
2-METHYLNAPHTHALENE	95	U	U	
ACENAPHTHENE	190	U	U	
ACENAPHTHYLENE	190	U	U	
ANTHRACENE	190	U	U	
BENZO(A)ANTHRACENE	95	U	U	
BENZO(A)PYRENE	19	U	U	
BENZO(B)FLUORANTHENE	19	U	U	
BENZO(G,H,I)PERYLENE	19	U	U	
BENZO(K)FLUORANTHENE	19	U	U	
CHRYSENE	95	U	U	
DIBENZO(A,H)ANTHRACENE	19	U	U	
FLUORANTHENE	95	U	U	
FLUORENE	190	U	U	
INDENO(1,2,3-CD)PYRENE	19	U	U	
NAPHTHALENE	95	U	U	
PHENANTHRENE	190	U	U	
PYRENE	95	U	U	

PROJ\_NO: 4248

SDG: F30558 MEDIA: SOIL DATA FRACTION: PAH

nsample CEF-B290A-SB-DU02  
samp\_date 3/22/2005  
lab\_id F30558-4  
qc\_type NM  
units UG/KG  
Pct\_Soids 89.5  
DUP\_CF: CEF-B290A-SB001-01

Parameter	Result	Lab Qual	Val Qual	Qual Code
1-METHYLNAPHTHA.ENE	92	U	U	
2-METHYLNAPHTHA.ENE	92	U	U	
ACENAPHTHENE	180	U	U	
ACENAPHTHYLENE	180	U	U	
ANTHRACENE	180	U	U	
BENZO(A)ANTHRACENE	92	U	U	
BENZO(A)PYRENE	18	U	U	
BENZO(B)FLUORANTHENE	18	U	U	
BENZO(G,H,I)PERYLENE	18	U	U	
BENZO(K)FLUORANTHENE	18	U	U	
CHRYSENE	92	U	U	
DIBENZO(A,H)ANTHRACENE	18	U	U	
FLUORANTHENE	92	U	U	
FLUORENE	180	U	U	
INDENC(1,2,3-CD)PYRENE	18	U	U	
NAPHTHALENE	92	U	U	
PHENANTHRENE	180	U	U	
PYRENE	92	U	U	

**PROJ\_NO: 4248**

SDG: F30558 MEDIA: SOIL DATA FRACTION: PET

nsample CEF-B290A-SB001-01  
 samp\_date 3/22/2005  
 lab\_id F30558-2  
 qc\_type NM  
 units MG/KG  
 Pct\_Soids 89.1  
 DUP\_CF:

nsample CEF-B290A-SB002-01  
 samp\_date 3/22/2005  
 lab\_id F30558-3  
 qc\_type NM  
 units MG/KG  
 Pct\_Soids 93.8  
 DUP\_OF:

nsample CEF-B290A-SB006-01  
 samp\_date 3/22/2005  
 lab\_id F30558-1  
 qc\_type NM  
 units MG/KG  
 Pct\_Soids 86.5  
 DUP\_OF:

Parameter	Result	Lab Qual	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	13.5			

Parameter	Result	Lab Qual	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	18.8			

Parameter	Result	Lab Qual	Val Qual	Qual Code
TOTAL PETROLEUM HYDROCARBONS	11.6			

**PROJ\_NO: 4248**

SDG: F30558 MEDIA: SOIL DATA FRACTION: PET

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nsample CEF-B290A-SB-DU02  
samp\_date 3/22/2005  
lab\_id F30558-4  
qc\_type NM  
units MG/KG  
Pct\_Soids 89.5  
DUP\_CF: CEF-B290A-SB001-01

Parameter	Result	Lab Qual	Val Qual	Qual Code
TOTAL PETROLEUMHYDROCARBONS	10.5			

**PROJ\_NO: 4248**

SDG: F30558 MEDIA: SOIL DATA FRACTION: MISC

nsample CEF-B290A-SB001-01  
 samp\_date 3/22/2005  
 lab\_id F30558-2  
 qc\_type NM  
 Pct\_Solids 89.1  
 DUP\_OF:

nsample CEF-B290A-SB002-01  
 samp\_date 3/22/2005  
 lab\_id F30558-3  
 qc\_type NM  
 Pct\_Solids 93.8  
 DUP\_OF:

nsample CEF-B290A-SB006-01  
 samp\_date 3/22/2005  
 lab\_id F30558-1  
 qc\_type NM  
 Pct\_Solids 86.5  
 DUP\_OF:

Parameter	units	Result	Lab Qual	Val Qual	Qual Code
PERCENT SOLIDS	%	89.1			

Parameter	units	Result	Lab Qual	Val Qual	Qual Code
PERCENT SOLIDS	%	93.8			

Parameter	units	Result	Lab Qual	Val Qual	Qual Code
PERCENT SOLIDS	%	86.5			

**PROJ\_NO: 4248**

SDG: F30558 MEDIA: SOIL DATA FRACTION: MISC

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nsample CEF-B290A-SB-DU02  
samp\_date 3/22/2005  
lab\_id F30558-4  
qc\_type NM  
Pct\_Solids 89.5  
DUP\_OF: CEF-B290A-SB001-01

Parameter	units	Result	Lab Qual	Vai Qual	Qual Code
PERCENT SOLIDS	%	89.5			

## Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB001-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-2	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.1
<b>Method:</b> SW846 8310 SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004067.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #	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	190 U	750	190	ug/kg	
208-96-8	Acenaphthylene	190 U	750	190	ug/kg	
120-12-7	Anthracene	190 U	370	190	ug/kg	
56-55-3	Benzo(a)anthracene	93 U	370	93	ug/kg	
50-32-8	Benzo(a)pyrene	19 U	75	19	ug/kg	
205-99-2	Benzo(h)fluoranthene	19 U	75	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19 U	75	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	19 U	75	19	ug/kg	
218-01-9	Chrysene	93 U	370	93	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	19 U	75	19	ug/kg	
206-44-0	Fluoranthene	93 U	370	93	ug/kg	
86-73-7	Fluorene	190 U	370	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19 U	75	19	ug/kg	
91-20-3	Naphthalene	93 U	370	93	ug/kg	
90-12-0	1-Methylnaphthalene	93 U	370	93	ug/kg	
91-57-6	2-Methylnaphthalene	93 U	370	93	ug/kg	
85-01-8	Phenanthrene	190 U	370	190	ug/kg	
129-00-0	Pyrene	93 U	370	93	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		49-124%
92-94-4	p-Terphenyl	91%		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

0011

## Report of Analysis

Client Sample ID: CEF-B290A-SB002-01  
 Lab Sample ID: F30558-3  
 Matrix: SO - Soil  
 Method: SW846 8310 SW846 3550B  
 Project: NAS Cecil Field-CTO-248

Date Sampled: 03/22/05  
 Date Received: 03/23/05  
 Percent Solids: 93.8

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004068.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.2 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	86%		49-124%
92-94-4	p-Terphenyl	87%		56-141%

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

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

0012

## Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB006-01	
<b>Lab Sample ID:</b> F30558-1	<b>Date Sampled:</b> 03/22/05
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 03/23/05
<b>Method:</b> SW846 8310 SW846 3550B	<b>Percent Solids:</b> 86.5
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004064.D	1	03/25/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	30.3 g	5.0 ml
Run #2		

## Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	190 U	760	190	ug/kg	
208-96-8	Acenaphthylene	190 U	760	190	ug/kg	
120-12-7	Anthracene	190 U	380	190	ug/kg	
56-55-3	Benzo(a)anthracene	95 U	380	95	ug/kg	
50-32-8	Benzo(a)pyrene	19 U	76	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	19 U	76	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19 U	76	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	19 U	76	19	ug/kg	
218-01-9	Chrysene	95 U	380	95	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	19 U	76	19	ug/kg	
206-44-0	Fluoranthene	95 U	380	95	ug/kg	
86-73-7	Fluorene	190 U	380	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19 U	76	19	ug/kg	
91-20-3	Naphthalene	95 U	380	95	ug/kg	
90-12-0	1-Methylnaphthalene	95 U	380	95	ug/kg	
91-57-6	2-Methylnaphthalene	95 U	380	95	ug/kg	
85-01-8	Phenanthrene	190 U	380	190	ug/kg	
129-00-0	Pyrene	95 U	380	95	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	53%		49-124%
92-94-4	p-Terphenyl	57%		56-141%

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

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

0010

## Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB-DU02	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-4	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.5
<b>Method:</b> SW846 8310 SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	PP004069.D	1	03/26/05	MRE	03/24/05	OP12790	GPP162
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.5 g	5.0 ml
Run #2		

## Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	180 U	730	180	ug/kg	
208-96-8	Acenaphthylene	180 U	730	180	ug/kg	
120-12-7	Anthracene	180 U	370	180	ug/kg	
56-55-3	Benzo(a)anthracene	92 U	370	92	ug/kg	
50-32-8	Benzo(a)pyrene	18 U	73	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	18 U	73	18	ug/kg	
191-24-2	Benzo(g,h,i)perylene	18 U	73	18	ug/kg	
207-08-9	Benzo(k)fluoranthene	18 U	73	18	ug/kg	
218-01-9	Chrysene	92 U	370	92	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	18 U	73	18	ug/kg	
206-44-0	Fluoranthene	92 U	370	92	ug/kg	
86-73-7	Fluorene	180 U	370	180	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	18 U	73	18	ug/kg	
91-20-3	Naphthalene	92 U	370	92	ug/kg	
90-12-0	1-Methylnaphthalene	92 U	370	92	ug/kg	
91-57-6	2-Methylnaphthalene	92 U	370	92	ug/kg	
85-01-8	Phenanthrene	180 U	370	180	ug/kg	
129-00-0	Pyrene	92 U	370	92	ug/kg	

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

0013

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

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

**Report of Analysis**

<b>Client Sample ID:</b> CEF-B290A-SB001-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-2	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.1
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IJ22607.D	1	03/26/05	SM	03/24/05	OP12789	GIJ1112
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	13.5	9.3	6.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	102%		59-121%

0036

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

**Report of Analysis**

<b>Client Sample ID:</b> CEF-B290A-SB002-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-3	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 93.8
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IJ22608.D	1	03/26/05	SM	03/24/05	OP12789	GIJ1112
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	18.8	8.8	6.0	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	101%		59-121%

0037

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

### Report of Analysis

<b>Client Sample ID:</b> CEF-B290A-SB006-01	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-1	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 86.5
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP48296.D	1	03/28/05	SM	03/24/05	OP12789	GOP1417
Run #2							

Run #	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)	11.6	9.5	6.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	96%		59-121%		

0035

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

**Report of Analysis**

<b>Client Sample ID:</b> CEF-B290A-SB-DU02	<b>Date Sampled:</b> 03/22/05
<b>Lab Sample ID:</b> F30558-4	<b>Date Received:</b> 03/23/05
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.5
<b>Method:</b> FLORIDA-PRO SW846 3550B	
<b>Project:</b> NAS Cecil Field-CTO-248	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	IJ22609.D	1	03/26/05	SM	03/24/05	OP12789	GJ1112
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	10.5	9.1	6.2	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	108%		59-121%		

0038

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



TETRA TECH NUS, INC.

F30558 CHAIN OF CUSTODY

NUMBER 290A-032105

PAGE 1 OF 1

PROJECT NO: N4242, CTV 248		FACILITY: NASCF, TANK 290A		PROJECT MANAGER PAUL CALLIGAN		PHONE NUMBER 813 806 0202		LABORATORY NAME AND CONTACT: ACCUTEST H. WANDROY			
SAMPLERS (SIGNATURE) Merrin W. Dale				FIELD OPERATIONS LEADER Merv Dale		PHONE NUMBER 904 636 6125		ADDRESS 4405 VINELAND Rd., C-15			
				CARRIER/WAYBILL NUMBER Fedex 8427 1834 9649				CITY, STATE ORLANDO, FL 32811			
STANDARD TAT <input checked="" type="checkbox"/> RUSH TAT <input type="checkbox"/>								CONTAINER TYPE PLASTIC (P) or GLASS (G)			
<input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 72 hr. <input type="checkbox"/> 7 day <input type="checkbox"/> 14 day								PRESERVATIVE USED			
DATE YEAR	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	TYPE OF ANALYSIS PAHS 5/6846 8310 Note G TRPH FL-PRO Note G		COMMENTS
1 03/22	1125	CEF-B290A-SB006-01	*	0	1	SO	G	4	2	2	Cool to 4°C
2 03/22	1140	CEF-B290A-SB001-01		0	1	SO	G	2	1	1	
3 03/22	1153	CEF-B290A-SB002-01		0	1	SO	G	2	1	1	Work Release
4 03/22	0000	CEF-B290A-SB-D402		0	1	SO	G	2	1	1	1001712
MUD											* Use extra volume for Lab MSMSD.
1. RELINQUISHED BY Merrin W. Dale				DATE 03/22/05	TIME 1600	1. RECEIVED BY Fedex				DATE 03/22/05	TIME —
2. RELINQUISHED BY FX				DATE 3/23/05	TIME 9:00	2. RECEIVED BY [Signature]				DATE 3/23/05	TIME 9:00
3. RELINQUISHED BY				DATE	TIME	3. RECEIVED BY				DATE	TIME
COMMENTS 0008											

DISTRIBUTION:

WHITE (ACCOMPANIES SAMPLE)

YELLOW (FIELD COPY)

PINK (FILE COPY)

4/02R

# HOLD TIME

SDG F30558

SORT	UNITS	NSAMPLE	LAB ID	QC TYPE	SAMP DATE	EXTR DATE	ANAL DATE	SMP EXTR	EXTR_ANL	SMP_ANL
PCS	%	CEF-B290A-SB001-01	F30558-2	NM	3/22/2005	3/27/2005	3/27/2005	5	0	5
PCS	%	CEF-B290A-SB-DU02	F30558-4	NM	3/22/2005	3/27/2005	3/27/2005	5	0	5
PCS	%	CEF-B290A-SB006-01	F30558-1	NM	3/22/2005	3/27/2005	3/27/2005	5	0	5
PCS	%	CEF-B290A-SB002-01	F30558-3	NM	3/22/2005	3/27/2005	3/27/2005	5	0	5
PAH	%	CEF-B290A-SB002-01	F30558-3	NM	3/22/2005	3/24/2005	3/26/2005	2	2	4
PAH	%	CEF-B290A-SB006-01	F30558-1	NM	3/22/2005	3/24/2005	3/25/2005	2	1	3
PAH	%	CEF-B290A-SB-DU02	F30558-4	NM	3/22/2005	3/24/2005	3/26/2005	2	2	4
PAH	%	CEF-B290A-SB001-01	F30558-2	NM	3/22/2005	3/24/2005	3/26/2005	2	2	4
PAH	UG/KG	CEF-B290A-SB001-01	F30558-2	NM	3/22/2005	3/24/2005	3/26/2005	2	2	4
PAH	UG/KG	CEF-B290A-SB002-01	F30558-3	NM	3/22/2005	3/24/2005	3/26/2005	2	2	4
PAH	UG/KG	CEF-B290A-SB-DU02	F30558-4	NM	3/22/2005	3/24/2005	3/26/2005	2	2	4
PAH	UG/KG	CEF-B290A-SB006-01	F30558-1	NM	3/22/2005	3/24/2005	3/25/2005	2	1	3
TPH	MG/KG	CEF-B290A-SB-DU02	F30558-4	NM	3/22/2005	3/24/2005	3/26/2005	2	2	4
TPH	MG/KG	CEF-B290A-SB001-01	F30558-2	NM	3/22/2005	3/24/2005	3/26/2005	2	2	4
TPH	MG/KG	CEF-B290A-SB002-01	F30558-3	NM	3/22/2005	3/24/2005	3/26/2005	2	2	4

<u>SORT</u>	<u>UNITS</u>	<u>NSAMPLE</u>	<u>LAB_ID</u>	<u>QC_TYPE</u>	<u>SAMP_DATE</u>	<u>EXTR_DATE</u>	<u>ANAL_DATE</u>	<u>SMP_EXTR</u>	<u>EXTR_ANL</u>	<u>SMP_ANL</u>
TPH	MG/KG	CEF-B290A-SB006-01	F30558-1	NM	3/22/2005	3/24/2005	3/28/2005	2	4	6

FIELD DUPLICATE PRECISION

ANALYTE	CEF-B290A-SB-DU02	CEF-B290A-SB001-01	RPD
TPH	10.5	13.5	25.00