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SITE ASSESSMENT REPORT FOR BUILDING 16 TANK G-16A BASE REALIGNMENT AND
CLOSURE NAS CECIL FIELD FL
12/1/2002
TETRA TECH NUS INC

**Site Assessment Report
for
Building 16, Tank G16-A**

Base Realignment and Closure

**Naval Air Station Cecil Field
Jacksonville, Florida**



**Southern Division
Naval Facilities Engineering Command**

Contract Number N62467-94-D-0888

Contract Task Order 0168

December 2002

**SITE ASSESSMENT REPORT
FOR
BUILDING 16, TANK G16-A
BASE REALIGNMENT AND CLOSURE**

**NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

**Submitted to:
Southern Division
Naval Facilities Engineering Command
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**Submitted by:
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**CONTRACT NUMBER N62467-94-D-0888
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DECEMBER 2002

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PROFESSIONAL REVIEW CERTIFICATION

The Site Assessment contained in this report was prepared using sound hydrogeologic principles and judgment. This assessment 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 assessment described in this report. This Site Assessment Report was developed for Building 16, Tank G16-A at the former Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.

Mervin W. Dale

Mervin Dale
Florida Professional Geologist
P.G. Number 0001917

12/12/02

Date

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TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
PROFESSIONAL REVIEW CERTIFICATION.....	iii
ACRONYMS	vii
EXECUTIVE SUMMARY	ES-1
1.0 INTRODUCTION.....	1-1
1.1 SITE DESCRIPTION.....	1-1
1.2 SURROUNDING PROPERTIES.....	1-1
1.3 TOPOGRAPHIC SETTING	1-4
1.4 INVESTIGATIVE HISTORY	1-4
2.0 INVESTIGATIVE METHODOLOGY	2-1
2.1 QUALITY ASSURANCE.....	2-1
2.2 SOIL QUALITY ASSESSMENT	2-1
2.2.1 Organic Vapor Measurements	2-1
2.2.2 Fixed-based Soil Analyses	2-3
2.3 MONITORING WELL INSTALLATION	2-3
2.4 SURVEY AND ELEVATION DATA COLLECTION	2-3
2.5 GROUNDWATER QUALITY ASSESSMENT	2-5
2.5.1 Fixed-Based Laboratory Analyses	2-5
3.0 RESULTS OF INVESTIGATION	3-1
3.1 SOIL QUALITY	3-1
3.1.1 OVA-FID Headspace Analyses.....	3-1
3.1.2 Fixed-Based Soil Results	3-1
3.2 GROUNDWATER QUALITY	3-1
3.2.1 Fixed-Based Laboratory Results.....	3-1
4.0 SUMMARY AND RECOMMENDATIONS	4-1
REFERENCES.....	R-1
<u>APPENDICES</u>	
A ABB-ES CONFIRMATORY SAMPLING REPORT	A-1
B FDEP TECHNICAL REVIEW LETTER RE: TtNUS CSR REV. 0 FOR TANK G16-A.....	B-1
C FDEP TECHNICAL REVIEW LETTER RE: TtNUS CSR REV. 1 FOR TANK G16-A.....	C-1
D HAND AUGER SOIL BORING LOGS AND SOIL SAMPLE LOG SHEETS	D-1
E WELL BORING LOGS AND CONSTRUCTION DIAGRAMS	E-1
F TOC SURVEY DATA.....	F-1
G GROUNDWATER FIELD DATA SHEETS	G-1
H SOIL LABORATORY REPORTS	H-1
I GROUNDWATER LABORATORY REPORTS	I-1

TABLES

<u>NUMBER</u>		<u>PAGE</u>
2-1	Monitoring Well Construction and Water Elevation Data	2-7
3-1	Soil Vapor Field Screening Results	3-2
3-2	Summary of CSR Detections in Soil.....	3-3
3-3	Summary of TPHCWG Results	3-5
3-4	Summary of Detections in Groundwater.....	3-8

FIGURES

<u>NUMBER</u>		<u>PAGE</u>
1-1	Site Location Map	1-2
1-2	Site and Surrounding Properties Map	1-3
1-3	Topographic Map	1-5
2-1	Soil Boring Locations Data	2-2
2-2	Groundwater Flow Map, May 23, 2002	2-4
2-3	Groundwater Flow Map, October 10, 2002	2-6
3-1	CSR Soil Sample Results	3-4
3-2	Groundwater Sample Results.....	3-7

ACRONYMS

AAL	Accura Analytical Laboratory, Inc.
ABB-ES	ABB Environmental Services, Inc.
AST	Above Ground Storage Tank
bls	Below Land Surface
BTEX	Benzene, Toluene, Ethylbenzene, Total Xylenes
COCs	Contaminants of Concern
CompQAP	Comprehensive Quality Assurance Plan
CSR	Confirmatory Sampling Report
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FID	Flame Ionization Detector
ft	Feet or Foot
FL-PRO	Florida Petroleum Range Organics
GAG	Gasoline Analytical Group
GCTLs	Groundwater Cleanup Target Levels
KAG	Kerosene Analytical Group
µg/kg	Micrograms per Kilogram
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
MTBE	Methyl-Tert-Butyl Ether
NAS	Naval Air Station
Navy	United States Navy
OVA	Organic Vapor Analyzer
PAHs	Polynuclear Aromatic Hydrocarbons
ppm	Parts per Million
SA	Site Assessment
SAP	Sampling and Analysis Plan
SAR	Site Assessment Report
SCTLs	Soil Cleanup Target Levels
SOUTHNAVFACENCOM	Southern Division, Naval Facilities Engineering Command
STL	Severn Trent Laboratories, Inc.
TOC	Top-of-Casing
TPHCWG	Total Petroleum Hydrocarbon Classification Work Group
TRPH	Total Recoverable Petroleum Hydrocarbons

ACRONYMS (Continued)

TtNUS	Tetra Tech NUS, Inc.
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank

EXECUTIVE SUMMARY

Tetra Tech NUS, Inc. (TtNUS) has completed a Site Assessment (SA) at Building 16, Tank G16-A, former Naval Air Station (NAS) Cecil Field, Jacksonville, Florida. The focal point of the study was on the west side of Building 16 where a 1,000-gallon diesel above ground storage tank (AST) is in service. The investigation was conducted in accordance with requirements of Chapter 62-770, Florida Administrative Code (FAC). This report is being submitted to the Florida Department of Environmental Protection (FDEP) for approval.

TtNUS conducted the following tasks to complete this SA:

- Existing literature was reviewed to identify potential petroleum hydrocarbon sources and receptors in the site vicinity; locate nearby surface water bodies, if any; and determine surface drainage features.
- Literature pertaining to previous environmental investigations at the site was reviewed to estimate the magnitude of potential contamination to environmental media.
- Hydraulic gradient at the site was evaluated to estimate migration direction of water-borne contaminants.
- A soil vapor survey was performed by collecting soil samples at 2-foot (ft) vertical intervals from ground surface to the water table at seven locations in and around the former source area.
- Soil samples were collected for fixed-based laboratory analyses from the only soil boring that exhibited excessively contaminated soil screening data. Samples were analyzed for both Gasoline Analytical Group (GAG)/Kerosene Analytical Group (KAG) contaminants of concern (COCs) listed in Chapter 62-770, FAC and the Total Petroleum Hydrocarbon Classification Work Group (TPHCWG).
- Groundwater samples were collected from three permanent shallow monitoring wells on site and submitted to a fixed-based laboratory for analysis of GAG/KAG COCs listed in Chapter 62-770, FAC.

Briefly, the results for the soil and groundwater investigation were as follows:

“Excessively contaminated” soil, as defined by Chapter 62-770.200, FAC, was identified during field screening procedures in a single soil boring identified as CEF-G16-SB-001. Several soil borings were screened around boring CEF-G16-SB-001 (within 5 ft), and the results indicated that the contaminated

soil was confined to soil boring CEF-G16-SB-001. A sample of the “excessively contaminated” soil collected from CEF-G16-SB-001 was analyzed for total recoverable petroleum hydrocarbons (TRPH). The analytical results for that sample did exceed FDEP Soil Cleanup Levels (SCTLs) in the soil sample taken on March 1, 2001. However, upon resampling the same soil boring on May 31, 2002 for TRPH and analyzing it using the TPHCWG method, none of the TRPH fractions exceeded its FDEP fraction-specific SCTL.

The groundwater samples collected from the three permanent shallow monitoring wells located around the AST did not exceed the FDEP Groundwater Cleanup Target Levels (GCTLs). Free product was not encountered in any of the soil borings or permanent monitoring wells on site.

TiNUS recommends no further action for the subject site based on the evidence presented in this Site Assessment Report (SAR).

1.0 INTRODUCTION

TtNUS was authorized by Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to conduct an SA at Building 16, Tank G16-A, NAS Cecil Field, in Jacksonville, Florida. Specifically, the SA applied to the 1,000-gallon diesel AST located on the west side of Building 16. Available background information for the site is provided in the following sections.

1.1 SITE DESCRIPTION

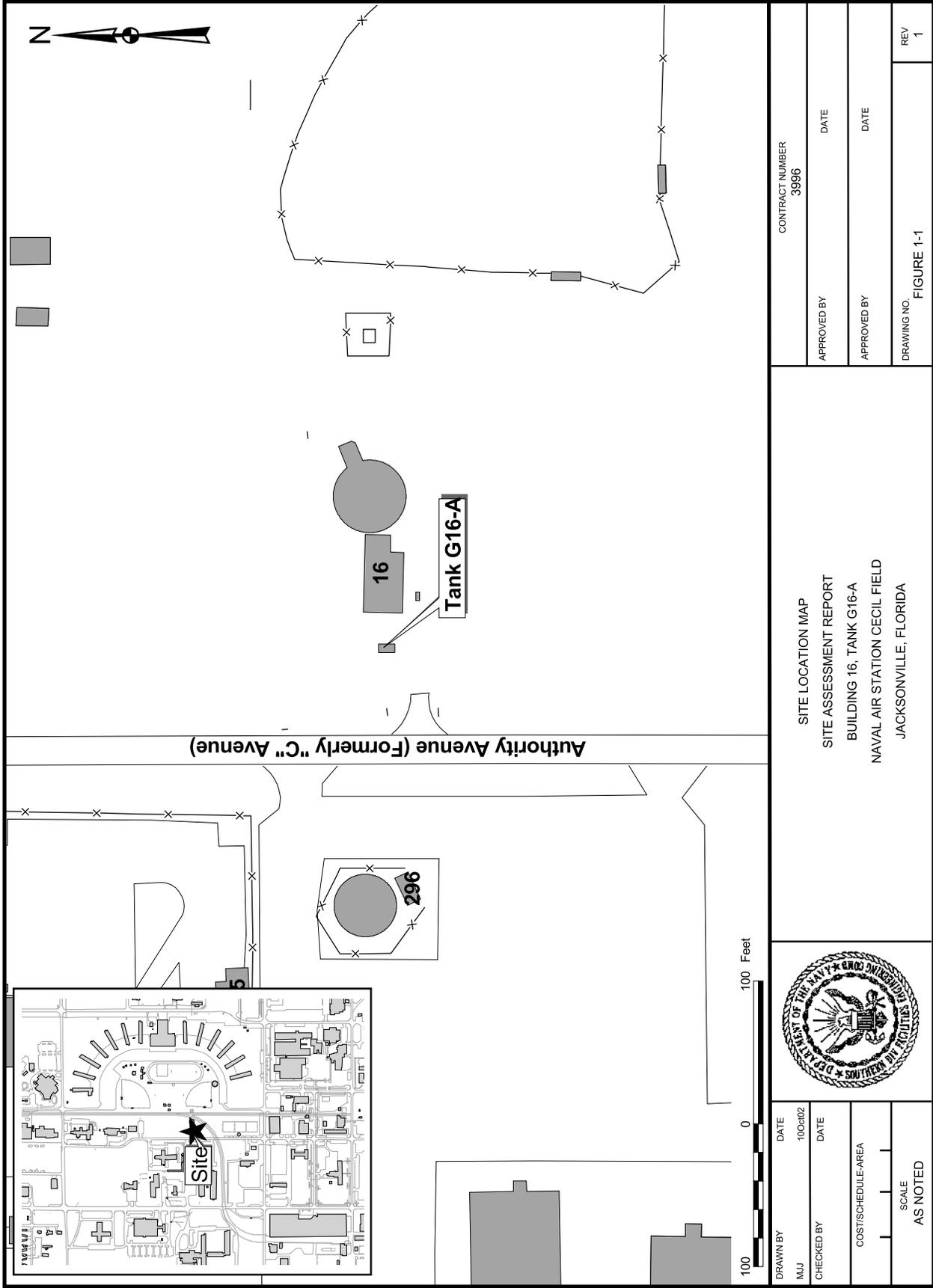
Building 16 was used as one of the water treatment plants for the NAS Cecil Field potable water distribution system and is located in the central portion of NAS Cecil Field. The locations of Building 16 and Tank G16-A are depicted in Figure 1-1. Tank G16-A is bound to the north by grass and trees, to the east by grass followed closely by Building 16, to the south by grass and trees, and to the west by grass followed by a ditch and a road. Tank G16-A was installed in 1995 to replace the underground storage tank (UST) G16-U which was removed in 1995 (ABB-ES, 1997).

1.2 SURROUNDING PROPERTIES

In general, Building 16 is surrounded to the north and south by grass and trees, and a baseball field to the east, and to the west by Authority Avenue (formerly "C" Avenue) and a parking lot. Properties adjacent to Building 16 are shown on Figure 1-2, an aerial photograph.

Several buildings that surround Tank G16-A are shown on Figure 1-2. The building numbers, current tenant, and current use for some of the structures are listed below:

Building	Former Use	Current Use	Current Tenant/Owner
296	Water Tower	Water Tower	Jacksonville Electric Authority
016	Water Treatment Plant	Water Treatment Plant	Jacksonville Electric Authority
202	Gear Issue Building	General Maintenance	J. A. Jones Global Services
203	Engine Overhaul Facility	General Maintenance	J. A. Jones Global Services
005	Applied Instruction Building	General Maintenance	J. A. Jones Global Services
200	Hobby Shop	General Maintenance	J. A. Jones Global Services
902	Bachelor Enlisted Quarters	None	City of Jacksonville
903	Bachelor Enlisted Quarters	None	City of Jacksonville



		SITE LOCATION MAP SITE ASSESSMENT REPORT BUILDING 16, TANK G16-A NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA		CONTRACT NUMBER 3996	
DRAWN BY MUJ	DATE 10Oct02	APPROVED BY	DATE	DRAWING NO. FIGURE 1-1	REV 1
CHECKED BY	DATE	APPROVED BY	DATE		
COST/SCHEDULE-AREA	SCALE AS NOTED				

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		SITE AND SURROUNDING PROPERTIES MAP SITE ASSESSMENT REPORT BUILDING 16, TANK G16-A NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA		CONTRACT NUMBER 3996	
DRAWN BY MJJ	DATE 10Oct02	APPROVED BY	DATE	DRAWING NO. FIGURE 1-2	REV 1
CHECKED BY	DATE	APPROVED BY	DATE		
COST/SCHEDULE-AREA		SCALE AS NOTED			

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1.3 TOPOGRAPHIC SETTING

A portion of the Fiftone, Florida United States Geological Survey (USGS) 7.5-minute quadrangle has been reproduced as Figure 1-3 to illustrate the subject site in relation to its topographic surroundings. The site area is virtually flat, and there is an unnamed creek that feeds Lake Fretwell approximately 2,000 ft southwest of the site.

1.4 INVESTIGATIVE HISTORY

In January 1997, ABB Environmental Services, Inc. (ABB-ES) initiated a confirmatory sampling investigation for this site and submitted a Confirmatory Sampling Report (CSR) in April 1998 that discussed the results of the investigation (Appendix A). The CSR reported that the soil samples and the one groundwater sample (from monitoring well CEF-G16-01S) were analyzed for the current KAG parameters, and no COC was reported at a concentration equal to or in excess of its regulatory standard as specified in Chapter 62-770, FAC. ABB-ES recommended no further action for the site at that time (ABB-ES, 1998).

After the closure of NAS Cecil Field, SOUTHNAVFACENGCOM authorized TtNUS to perform several confirmatory sampling investigations, and TtNUS submitted a Sampling and Analysis Plan (SAP) to the United States Navy (Navy) in March 2000 that included the assessment of soil at this site (TtNUS, 2000a). In June 2000, TtNUS implemented that SAP and submitted the results in a CSR to the FDEP (TtNUS, 2000b). The FDEP's technical review letter of the CSR Rev. 0 is included as Appendix B. Since two of the four soil borings (CEF-B16-SB-001 and CEF-B16-SB-002) produced questionable data, TtNUS was requested to take additional organic vapor analyzer (OVA) samples. The CSR Rev. 1 completed by TtNUS (TtNUS, 2002) resolved the questions about the two soil borings previously mentioned, except for one soil boring (CEF-B16-SB-001). The soil screening data for CEF-B16-SB-001 from the first sampled interval retained OVA data above the 50 parts per million (ppm) level considered representative of excessively contaminated soil (TtNUS, 2002). As a result of that revised CSR, the FDEP's response letter agreed with TtNUS' recommendation in the CSR Rev. 1 (TtNUS, 2002) to conduct a limited-scope SA. A copy of that letter is included as Appendix C.

2.0 INVESTIGATIVE METHODOLOGY

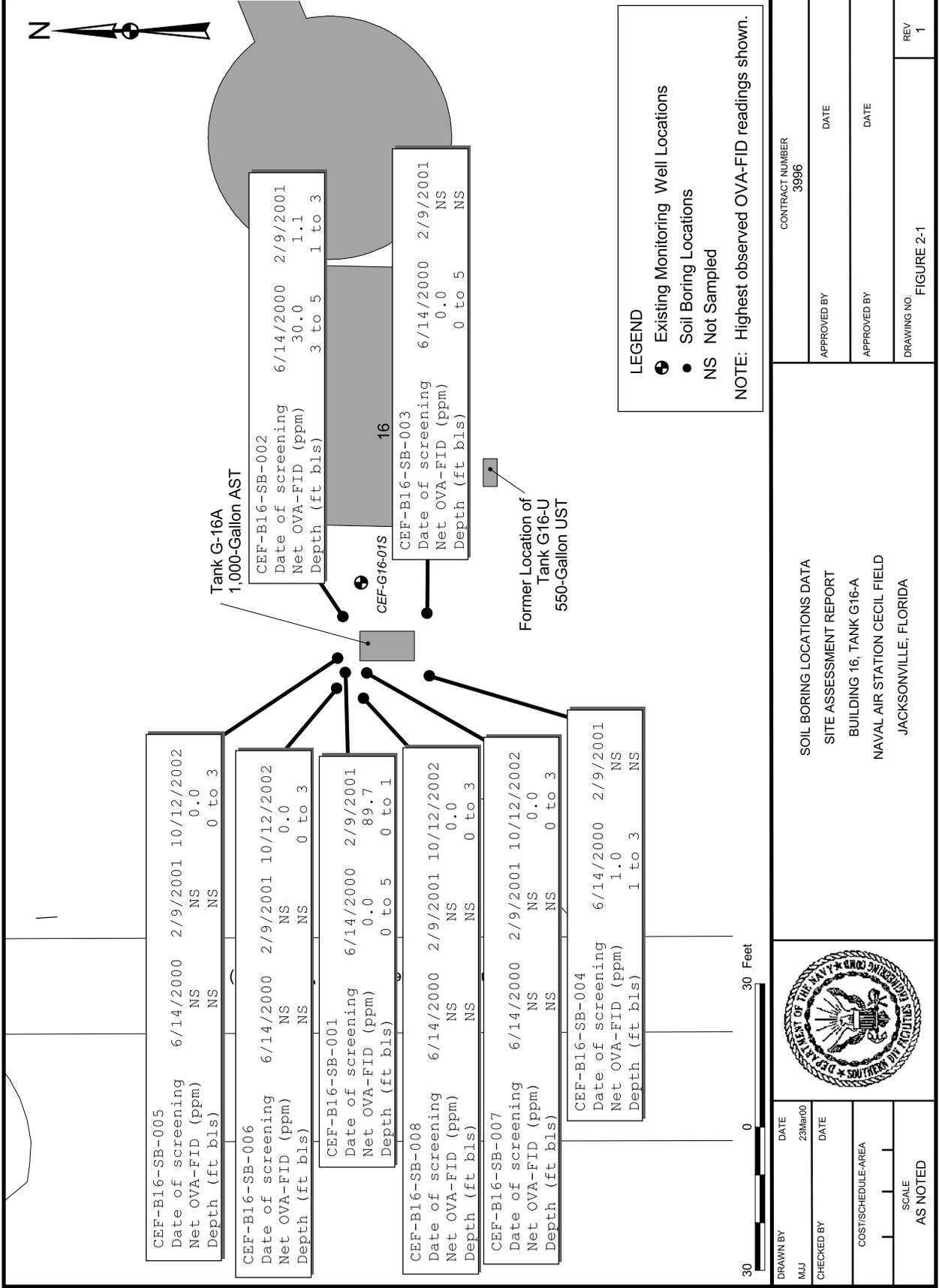
2.1 QUALITY ASSURANCE

The field procedures described in this SAR were performed in general accordance with the FDEP Standard Operating Procedures described in the TtNUS Comprehensive Quality Assurance Plan (CompQAP) Number 980038 and with the site-specific SAP (TtNUS, 2000a). Soil and groundwater samples collected for analyses by a fixed-based laboratory during the TtNUS investigation were shipped on ice and under chain of custody to either Accura Analytical Laboratory, Inc. (AAL), Norcross, Georgia; Accutest Laboratory, Orlando, Florida; or Severn Trent Laboratories, Inc. (STL), Pensacola, Florida. The Florida laboratory certification number for the Accura facility is E87429, the CompQAP number for the Accutest facility is 940304, and the CompQAP number for the STL facility is 980156. Based on the type of site and the analytical rationale given in previous investigations, TtNUS used the GAG/KAG analysis listed in Chapter 62-770, FAC, for determination of fixed-based sample results.

2.2 SOIL QUALITY ASSESSMENT

2.2.1 Organic Vapor Measurements

As indicated in Section 1.4, TtNUS completed four borings (CEF-G16-SB-001 through CEF-G16-SB-004) on June 14, 2000, for soil screening in the area where Tank G16-A is located (TtNUS, 2000b). For the purposes of this SAR, data for soil borings CEF-B16-SB-003 and CEF-B16-SB-004 have been retained. On February 9, 2001, soil borings CEF-G16-SBR-001 and CEF-G16-SBR-002 were re-cored within approximately 2 ft of the original borings (CEF-G16-SB-001 and CEF-G16-SB-002, respectively). Four additional soil borings (CEF-G16-SB-005 through CEF-G16-SB-008) were completed for soil screening on October 12, 2002. The soil boring logs for CEF-B16-SB-001 through CEF-B16-SB-008, CEF-B16-SBR-001, and CEF-B16-SBR-002 are included in Appendix D. The soil boring locations are shown on Figure 2-1. Soil samples were collected at approximately 2-ft vertical intervals to a depth of 5 ft below land surface (bls) at each location using stainless steel hand auger and FDEP-recommended soil screening techniques. In general conformance with Chapter 62-770, FAC, the soil samples were visually inspected for petroleum staining and headspace readings were obtained using a Perkin Elmer PhotoVac Micro Flame Ionization Detector (FID).



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CHECKED BY		DATE	APPROVED BY	
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SOIL BORING LOCATIONS DATA SITE ASSESSMENT REPORT BUILDING 16, TANK G16-A NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA			REV 1	

2.2.2 Fixed-based Soil Analyses

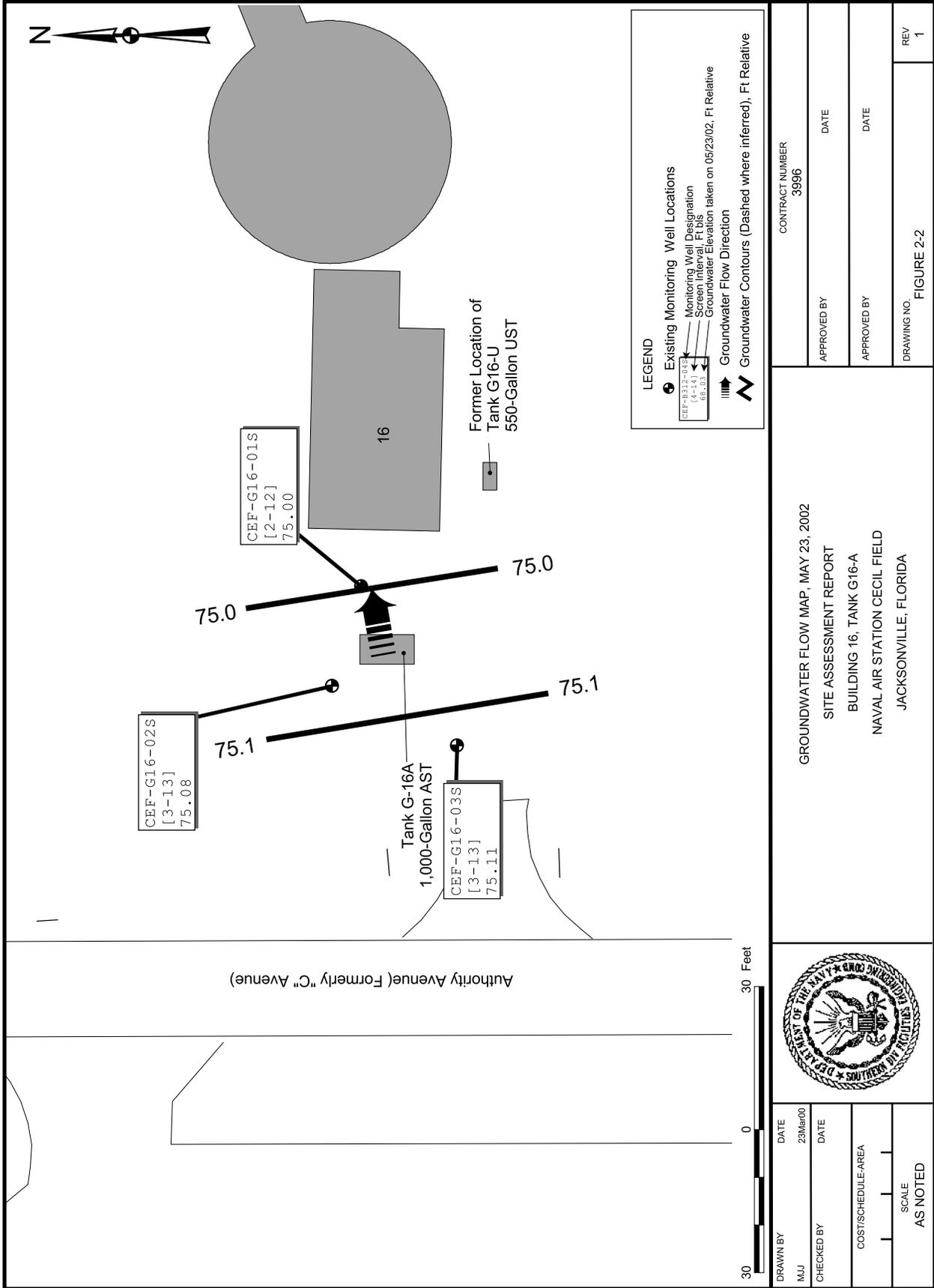
On March 1, 2001, a soil sample was collected from the same depth interval (0.5 to 1.0 ft bls) from CEF-B16-SBR-001 where an OVA-FID reading had indicated excessively contaminated soil existed. The sample was labeled CEF-B16-SS-001-01, and it was properly shipped to AAL via overnight courier and under chain of custody. The soil samples from that location were analyzed [as specified for GAG/KAG sites in Chapter 62-770.600(4)(a), FAC] using the following methods: United States Environmental Protection Agency (USEPA) Method SW846 8260B for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl-tert-butyl ether (MTBE); USEPA Method SW846 8270C for polynuclear aromatic hydrocarbons (PAHs); and Florida Petroleum Range Organics (FL-PRO) for TRPH. Subsequently, on May 30, 2002, another soil sample from approximately the same location and depth interval was collected at the location of CEF-G16-SBR-001. The sample was labeled CEF-B16-SS-001-01A, and it was properly shipped to STL in Pensacola, Florida where it was analyzed for TPHCWG as allowed by Chapter 62-770.680(1)(c)3, FAC. The sample was shipped on ice via overnight courier and under chain of custody. The soil sample log sheets for both the March 2001 and the May 2002 soil sampling events are included in Appendix D.

2.3 MONITORING WELL INSTALLATION

TtNUS supervised the installation of two additional permanent shallow monitoring wells. The first well, CEF-G16-02S, was located adjacent to CEF-B16-SB-001 to determine if COCs had leached into the groundwater. The second well, CEF-G16-03S, was installed to aid in determining the direction of groundwater flow. The locations of these wells are shown on Figure 2-2. Lithologic boring logs and well construction diagrams for those wells are provided as Appendix E. The wells were installed and developed in general accordance with the required protocols stipulated in the SAP (TtNUS, 2000a). Well CEF-G16-01S, located on the east side of Tank G16-A, was installed in January 1997 by ABB-ES during their investigation (ABB-ES, 1998).

2.4 SURVEY AND ELEVATION DATA COLLECTION

The top-of-casing (TOC) elevations of the three monitoring wells were surveyed relative to the TOC elevation of the southwest corner of the concrete pad for the AST. That assigned benchmark was arbitrarily given an elevation of 81.04 ft relative. Appendix F contains the survey data used to apply TOC elevations to the three monitoring wells. Depth-to-water was measured from the TOC of the three permanent monitoring wells. These values were subtracted from the calculated TOC elevations to determine relative groundwater elevations at the three control points and, thus, to construct groundwater elevation contour maps.



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Two groundwater elevation contour maps were constructed based on depth-to-water measurements collected on May 23, 2002 and October 10, 2002. The groundwater flow maps for those dates showing the screened interval of each well and the associated groundwater elevation are presented as Figures 2-2 and 2-3, respectively. The TOC elevation data, depth-to-water measurements, and resulting groundwater elevation data used to generate these two groundwater flow maps are provided in Table 2-1.

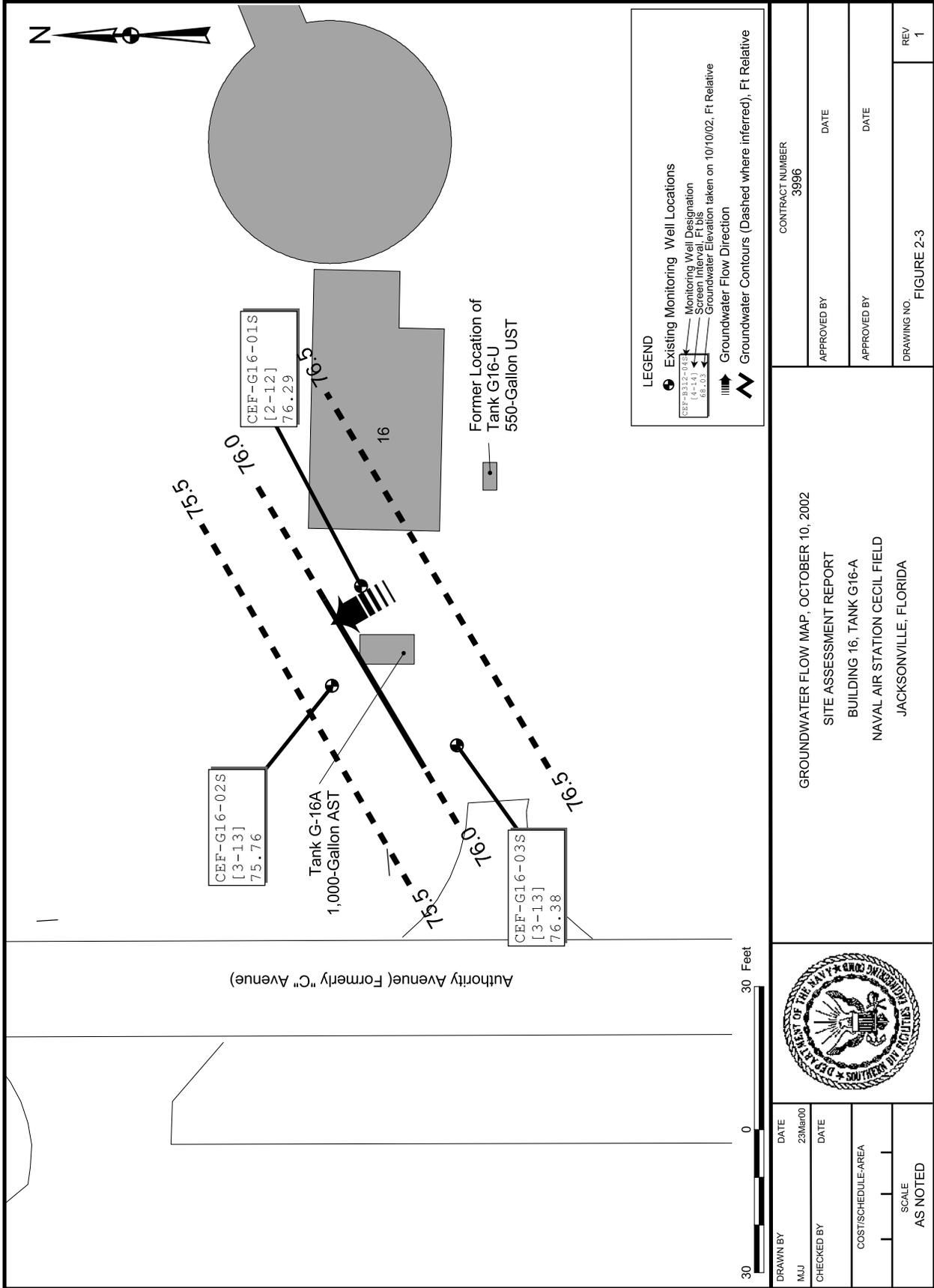
2.5 GROUNDWATER QUALITY ASSESSMENT

2.5.1 Fixed-Based Laboratory Analyses

A groundwater sample was first collected from monitoring well CEF-G16-01S on March 1, 2001. The sample was labeled CEF-B16-GW-01S-01, and it was properly shipped to AAL via overnight courier and under chain of custody. The water samples from that location were analyzed for GAG/KAG COCs [Chapter 62-770.600(4)(a), FAC] using the following methods: USEPA Method 504.1 for ethylene dibromide; USEPA Method SW846 6010B for total lead; USEPA Method SW846 8260B for BTEX, MTBE, 1,2-dichloroethane, and other priority pollutant volatile organic halocarbons (VOHs); by USEPA Method SW846 8270C for PAHs; and by FL-PRO for TRPH.

Groundwater samples were collected from the existing monitoring well (CEF-G16-01S) and the two new monitoring wells CEF-G16-02S and CEF-G16-03S on May 23, 2002 and were labeled CEF-G16-GW-01S-02, CEF-G16-GW-02S-01, and CEF-G16-GW-03S-01. A second sampling of monitoring well CEF-G16-01S was conducted since it had been longer than 270 days between the March 2001 and the May 2002 sampling events, which is a general guideline indicated by Chapter 62-770, FAC.

During both sampling events, TtNUS personnel used the low-flow quiescent sampling technique. Groundwater sampling logs and low flow purge logs for both the March 2001 and May 2002 sampling events are provided in Appendix G. After collection, samples were packed on ice and shipped via overnight courier to Accutest Laboratories in Orlando, Florida for analysis of the GAG/KAG COCs as specified in Chapter 62-770.600(4)(a), FAC, and as listed above.



GROUNDWATER FLOW MAP, OCTOBER 10, 2002 SITE ASSESSMENT REPORT BUILDING 16, TANK G16-A NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA		CONTRACT NUMBER 3996	
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**Table 2-1
Monitoring Well Construction and Water Elevation Data**

Site Assessment Report
Building 16, Tank G16-A
Naval Air Station Cecil Field
Jacksonville, Florida

Monitoring Well Identification	Total Well Depth (ft, btoc)	TOC Elevation (ft, relative)	May 23, 2002		October 10, 2002	
			Depth to Water (ft, btoc)	Water-Level Elevation (ft, relative)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, relative)
CEF-G16-01S	14.61	79.98	4.98	75.00	3.69	76.29
CEF-G16-02S	13.07	79.77	4.69	75.08	4.01	75.76
CEF-G16-03S	13.00	80.18	5.07	75.11	3.80	76.38

Notes:

btoc = below top of casing

Survey based on relative assumed datum benchmark of 81.04 ft assigned to the top of the concrete on the southwest corner of the AST pad.

3.0 RESULTS OF INVESTIGATION

3.1 SOIL QUALITY

3.1.1 OVA-FID Headspace Analyses

Since no evidence of visible petroleum staining was encountered, TtNUS reverted to OVA-FID headspace analysis to assess whether excessively contaminated soil existed on site. OVA-FID headspace measurements obtained in the upper 5 ft at the eight hand auger locations are presented in Table 3-1. The second screening event for sample location CEF-B16-SB-001 (also known as CEF-B16-SBR-001) indicates that excessively contaminated soil (in excess of the 50 ppm guideline) exists in the 0 to 1 ft interval bls. As indicated earlier by Figure 2-1, the four soil borings surrounding that location delineate the contamination to an area of less than 25 square ft.

3.1.2 Fixed-Based Soil Results

Since the fixed-based soil sample CEF-B16-SS-001-01 from the previous CSR (TtNUS, 2002) had exceeded the SCTL for TRPH, TtNUS re-sampled the soil boring on May 31, 2002 and had the sample analyzed for the TPHCWG group. None of the TRPH fractions were reported at a concentration equal to or greater than its respective SCTL. The list of detections indicated by the GAG/KAG soil analyses performed by AAL during the CSR are summarized in Table 3-2 and are mapped on Figure 3-1. The results of the TPHCWG soil analyses performed by STL are summarized in Table 3-3. Both laboratory reports are provided in Appendix H.

3.2 GROUNDWATER QUALITY

3.2.1 Fixed-Based Laboratory Results

TtNUS personnel collected groundwater samples from permanent monitoring wells on two separate occasions. The first sampling event in March 2001 produced results from monitoring well CEF-G16-01S that indicated only lead and TRPH (of the GAG/KAG COCs) were detectable in that groundwater sample. The data from the March 2001 sampling event also indicated that those COC concentrations were below the respective GCTLs.

**Table 3-1
Soil Vapor Field Screening Results**

Site Assessment Report
Building 16, Tank G16-A
Naval Air Station Cecil Field
Jacksonville, Florida

Sample Identification Screening Date	Depth (ft bls)	OVA-FID Result (ppm)			Lithologic Description
		Unfiltered	Filtered	Net	
CEF-B16-SB-001 6/14/2000	1	150	300	0.0	Dark Brown Fine Sand
	3	10	800	0.0	Dark Brown Fine Sand
	5	10	100	0.0	Very Pale Brown Fine Sand
CEF-B16-SBR-001* 2/9/2001	1	90.4	0.7	89.7	Dark Brown Fine Sand
	3	9.1	0.7	8.4	Dark Brown Fine Sand
	5	5.1	0.7	4.4	Very Pale Brown Fine Sand
CEF-B16-SB-002 6/14/2000	1	20	50	0.0	Dark Brown Fine Sand
	3	20	15	5.0	Dark Brown Fine Sand
	5	100	70	30	Very Pale Brown Fine Sand
CEF-B16-SBR-002** 2/9/2001	1	1.5	0.8	0.7	Dark Brown Fine Sand
	3	1.9	0.8	1.1	Dark Brown Fine Sand
	5	1.2	0.8	0.4	Very Pale Brown Fine Sand
CEF-B16-SB-003 6/14/2000	1	3.0	3.0	0.0	Dark Brown Fine Sand
	3	0.0	0.0	0.0	Dark Brown Fine Sand
	5	0.0	0.0	0.0	Very Pale Brown Fine Sand
CEF-B16-SB-004 6/14/2000	1	4.0	4.0	0.0	Dark Brown Fine Sand
	3	1.0	0.0	1.0	Dark Brown Fine Sand
	5	0.0	0.0	0.0	Very Pale Brown Fine Sand
CEF-B16-SB-005 10/12/2002	1	0.0	0.0	0.0	Dark Brown Fine Sand
	3	0.0	0.0	0.0	Dark Brown Fine Sand
	5	NS	NS	NS	Saturated / Very Pale Brown Fine Sand
CEF-B16-SB-006 10/12/2002	1	0.0	0.0	0.0	Dark Brown, Gray Fine Sand
	3	0.0	0.0	0.0	Dark Brown Fine Sand
	5	NS	NS	NS	Saturated / Very Pale Brown Fine Sand
CEF-B16-SB-007 10/12/2002	1	0.0	0.0	0.0	Dark Brown Fine Sand
	3	0.0	0.0	0.0	Brown Yellow Fine Sand
	5	NS	NS	NS	Saturated / Very Pale Brown Fine Sand
CEF-B16-SB-008 10/12/2002	1	0.0	0.0	0.0	Dark Brown Fine Sand
	3	0.0	0.0	0.0	Very Pale Brown Fine Sand
	5	NS	NS	NS	Saturated / Very Pale Brown Fine Sand

Notes:

* = Sample re-cored adjacent to original location (also known as CEF-B16-SB-001).

** = Sample re-cored adjacent to original location (also known as CEF-B16-SB-002).

NS = not sampled

**Table 3-2
Summary of CSR Detections in Soil**

Site Assessment Report
Building 16, Tank G16-A
Naval Air Station Cecil Field
Jacksonville, Florida

Compounds Detected	Sample ID	CEF-B16-SS-001-01	SCTL ²
	Date Sampled	3/1/2001	
		CEF-B16-SB-001 ¹	
<u>VOCs (USEPA Method SW846 8260B) (µg/kg)</u>			
Toluene		2.4J	500
<u>FL-PRO (mg/kg)</u>			
TRPH		370	340

Notes:

¹Sample location shown on Figure 2-1 of report.

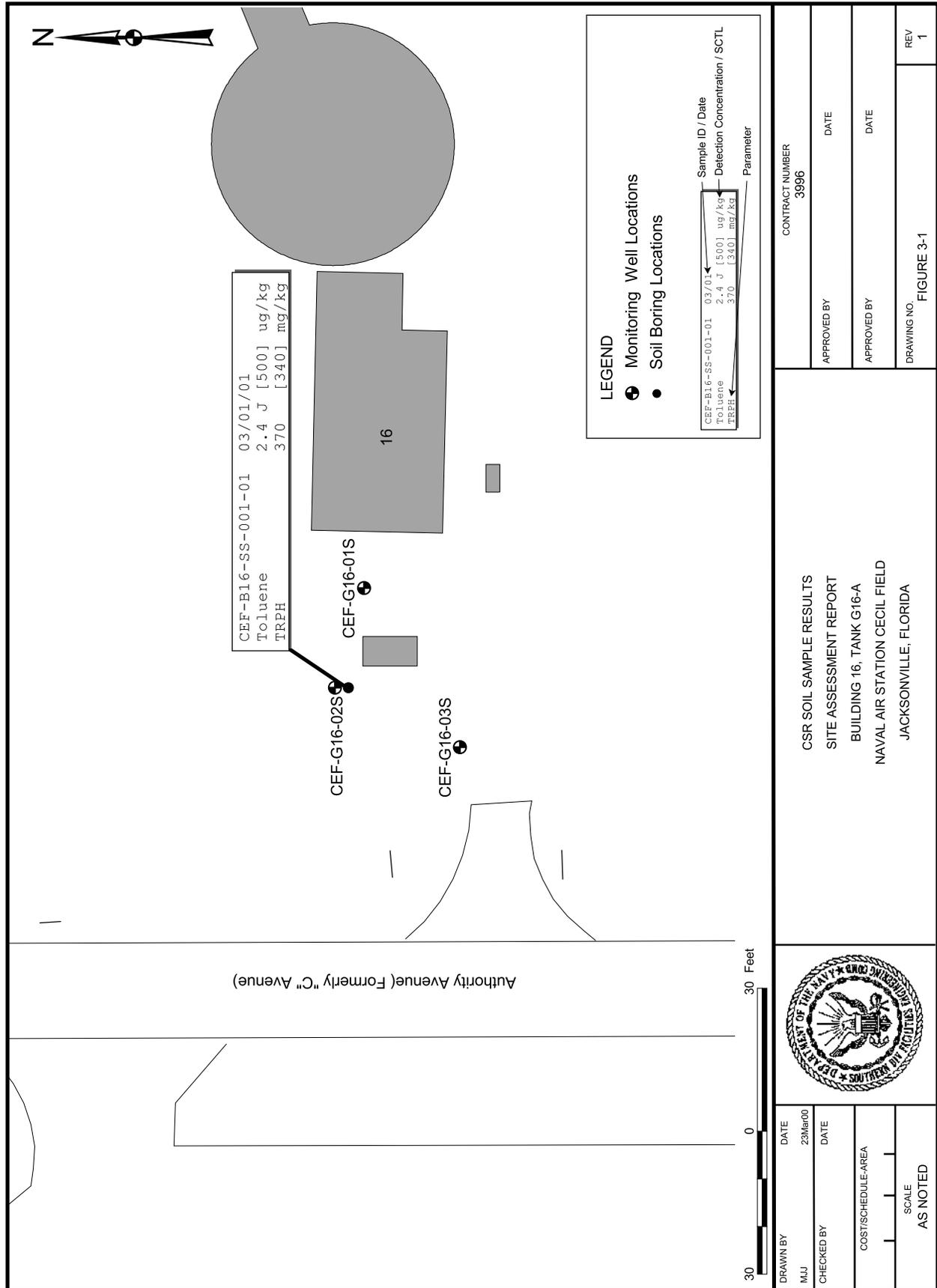
²SCTL based on leachability to groundwater standards (Chapter 62-770, FAC).

J = estimated

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

VOCs = volatile organic compounds



P:\GIS\NAS_CecilField\Tank_g16-a-2.apr.27Nov02 MJJ Layout8

**Table 3-3
Summary of TPHCWG Results**

Site Assessment Report
Building 16, Tank G16-A
Naval Air Station Cecil Field
Jacksonville, Florida

TPHCWG	Sample Number: CEF-B16-SS-001-01A Date Sampled: 5/31/2002	Residential Criteria¹
Aromatics, mg/kg		
C5 – C7 Aromatic	<50	260
C7 – C8 Aromatic	<50	380
C8 – C10 Aromatic	<50	340
C10 – C12 Aromatic	<50	690
C12 – C16 Aromatic	<50	1200
C16 – C21 Aromatic	<50	1300
C21 – C35 Aromatic	<50	2200
Aliphatics, mg/kg		
C6 – C8 Aliphatic	<50	6300
C8 – C10 Aliphatic	<50	630
C10 – C12 Aliphatic	<50	1300
C12 – C16 Aliphatic	<50	2300
C16 – C21 Aliphatic ¹	<50	32000
C21 – C35 Aliphatic ¹	<50	
Notes: ¹ Aliphatic criteria is for C16 - C35.		

The second sampling event, in May 2002, indicated that lead and TRPH were no longer detectable in monitoring well CEF-G16-01S; yet, those same COCs were detectable at low concentrations in the other two site monitoring wells. However, no COC concentrations reported for this second sampling event exceeded GCTLs. The groundwater detections for both rounds are displayed on Figure 3-2. The results of the fixed-based analyses performed by AAL and Accutest are summarized in Table 3-4 and laboratory reports are provided as Appendix I.

Insert Figure 3-2 here
Groundwater Sample Results

**Table 3-4
Summary of Detections in Groundwater**

Site Assessment Report
Building 16, Tank G16-A
Naval Air Station Cecil Field
Jacksonville, Florida

Compounds Detected	Sample ID: CEF-B16-GW- Date Sampled	01S-01	01S-02	02S-01	03S-01	GCTL ²
		3/1/2001 CEF-G16-01S ¹	5/23/2002 CEF-G16-01S ¹	5/23/2002 CEF-G16-02S ¹	5/23/2002 CEF-G16-03S ¹	
<u>Metals (USEPA Method SW846 6010B) (mg/L)</u>						
Lead		0.0052J	0.0012U	0.0023B	0.0013B	0.015
<u>FL-PRO (mg/L)</u>						
TRPH		1.7B	0.25U	0.28U	0.28U	5

Notes:

¹Sample location shown on Figure 2-1 of report.

²GCTL based on Chapter 62-770, FAC.

U = undetected

B = Result is greater than detection limit, but less than the reporting limit.

4.0 SUMMARY AND RECOMMENDATIONS

TtNUS completed a SA on the site of the diesel AST known as Tank G16-A at Building 16, Water Treatment Plant, NAS Cecil Field. The SA was completed for the Navy following a CSR (TtNUS, 2002) that indicated the necessity of this investigation.

The results of soil screening (OVA-FID headspace analysis) indicated the existence of excessively contaminated soil on site, and this appeared to be confirmed by the fixed-based laboratory soil TRPH analyses. However, the results of TPHCWG fraction analyses indicated that no excessively contaminated soil was present on site. TtNUS recommends no further action for soil assessment or cleanup at this site.

The groundwater flow direction was indicated to be to the east in May 2002, and then it shifted to the northwest in October 2002. This shift in flow direction may be due to seasonal fluctuations in the local water table. However, since the groundwater screening indicated that none of the GAG/KAG COCs have impacted the shallow water table, TtNUS recommends no further action for groundwater assessment or cleanup at this site.

It should be noted that no free product was reported in both CSRs conducted by ABB-ES or TtNUS, and no free product was encountered during the SA. Since the site's groundwater quality appears to be free of petroleum COCs, no water well inventory or extensive aquifer testing data was collected for this SAR.

Based on results of this soil and groundwater investigation, TtNUS recommends that Building 16, Tank G16-A at NAS Cecil Field be granted no further action status. To the best of our knowledge, the AST will remain in service under the supervision of the Jacksonville Electric Authority.

REFERENCES

ABB-ES (ABB Environmental Services, Inc.), 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for United States Naval Facilities Engineering Command Southern Division, North Charleston, South Carolina. January.

ABB-ES, 1998. *Confirmatory Sampling Report, Building 16, Tank G16-A, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for United States Naval Facilities Engineering Command Southern Division, North Charleston, South Carolina. April.

TtNUS (Tetra Tech NUS, Inc.), 2000a. *Sampling and Analysis Plan for Site Assessment and Confirmatory Sampling at Various UST and AST Sites, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for United States Naval Facilities Engineering Command Southern Division, North Charleston, South Carolina. March.

TtNUS , 2000b. *Confirmatory Sampling Report, Rev. 0, Building 16, Tank G16-A, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for United States Naval Facilities Engineering Command Southern Division, North Charleston, South Carolina. September.

TtNUS, 2002. *Confirmatory Sampling Report, Rev. 1, Building 16, Tank G16-A, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for United States Naval Facilities Engineering Command Southern Division, North Charleston, South Carolina, January.

APPENDIX A

**ABB-ES
CONFIRMATORY SAMPLING REPORT**

CONFIRMATORY SAMPLING REPORT
BUILDING 16, TANK G16-A
BASE REALIGNMENT AND CLOSURE
UNDERGROUND STORAGE TANK AND
ABOVEGROUND STORAGE TANK GREY SITES
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Unit Identification Code: N60200

Contract No.: N62467-89-D-0317/131

Prepared by:

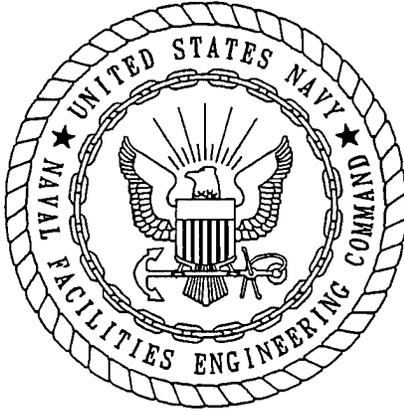
ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301

Prepared for:

Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418

Bryan Kizer, Code 1842, Engineer-in-Charge

April 1998



CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: April 17, 1998

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.
Project Technical Lead

(DFAR 252.227-7036)

TABLE OF CONTENTS

Confirmatory Sampling Report
Building 16, Tank G16-A
Naval Air Station Cecil Field
Jacksonville, Florida

<u>Chapter</u>	<u>Title</u>	<u>Page No.</u>
1.0	INTRODUCTION	1
2.0	FIELD INVESTIGATION	1
3.0	SCREENING AND ANALYTICAL RESULTS	1
4.0	CONCLUSIONS AND RECOMMENDATIONS	5

REFERENCES

APPENDICES

- Appendix A: Monitoring Well Installation Detail
- Appendix B: Groundwater Analytical Data

LIST OF FIGURES

Confirmatory Sampling Report
Building 16, Tank G16-A
Naval Air Station Cecil Field
Jacksonville, Florida

<u>Figure</u>	<u>Title</u>	<u>Page No.</u>
1	Tank G16-A, Water Treatment Plant Number 1	2
2	Tank G16-A, Soil Boring and Monitoring Well Locations	3

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page No.</u>
1	Soil Screening Results	4

GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
AST	aboveground storage tank
bls	below land surface
FAC	Florida Administrative Code
NAS	Naval Air Station
OVA	organic vapor analyzer

1.0 INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank G16-A at Naval Air Station (NAS) Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank G16-A is an aboveground storage tank (AST) located at Building 16, which serves as one of the water treatment plants for the NAS Cecil Field potable water distribution system (Figure 1). The AST, which was installed in 1995, has a 1,000-gallon capacity and is used to store diesel for the water plant generator (ABB-ES, 1997). The AST replaced a 550-gallon diesel underground storage tank (Tank G16-U) that was located on the south side of Building 16 and removed in 1995. A Contamination Assessment Plan for the assessment of soil and groundwater at Tank G16-A was prepared by ABB-ES in November 1996 (ABB-ES, 1996).

2.0 FIELD INVESTIGATION

The confirmatory sampling for Tank G16-A was initiated in January 1997 and included

- the advancement of four soil borings to the water table,
- the installation of one shallow groundwater monitoring well, and
- collection and analysis of one groundwater sample.

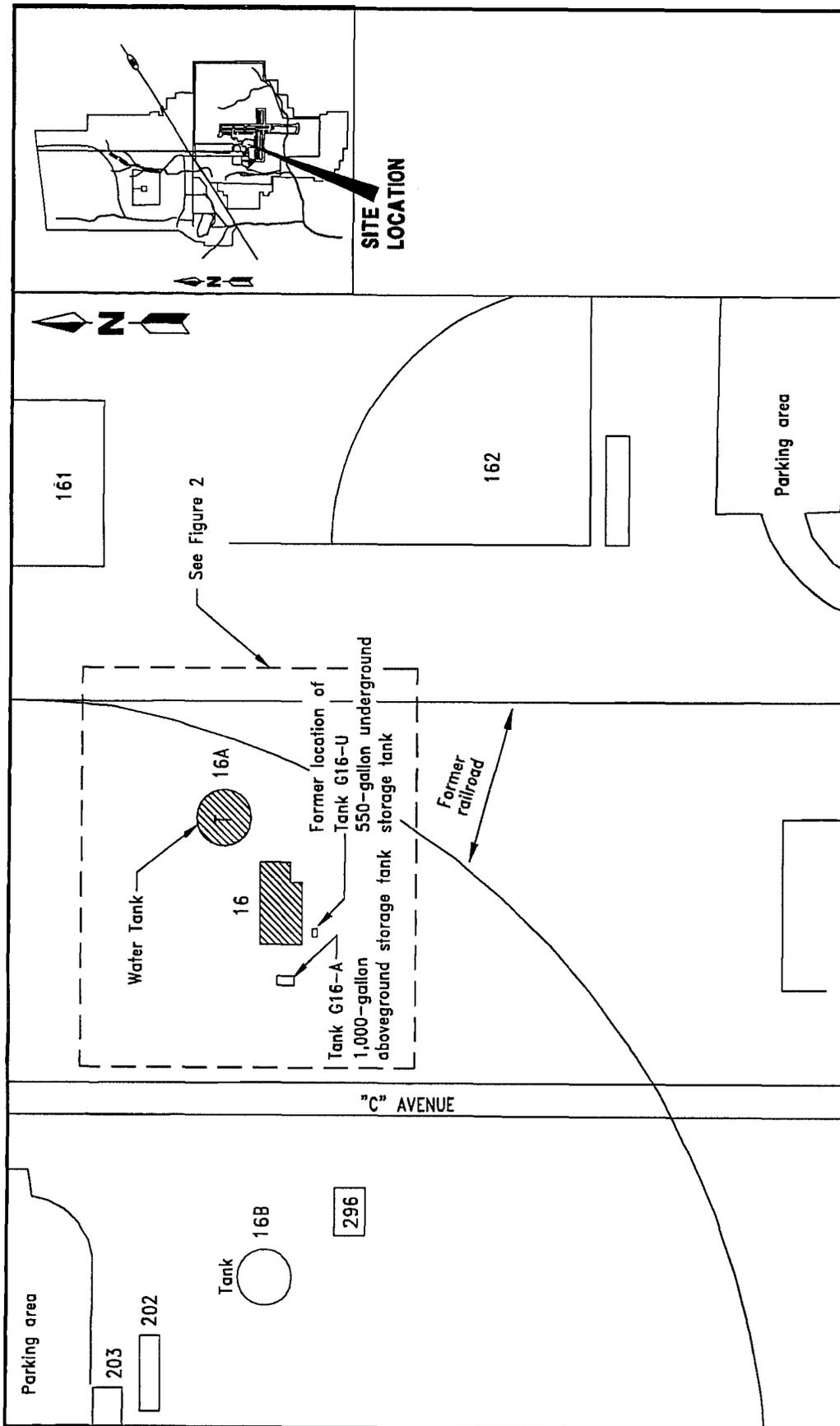
Soil samples were collected from each boring at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

A monitoring well, CEF-16-1S, was installed northeast of the AST near the location of soil boring CEF-16A-SB1 to a depth of 12 feet bls. One groundwater sample was collected from the well and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and the monitoring well is presented on Figure 2. The monitoring well installation detail is included as Appendix A.

3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was not detected at the Tank G16-A site. The soil OVA data are summarized in Table 1 and presented on Figure 2.

Groundwater contamination was not detected at concentrations exceeding requirements specified in Chapter 62-770 of the Florida Administrative Code (FAC). The complete analytical data set is presented in Appendix B.

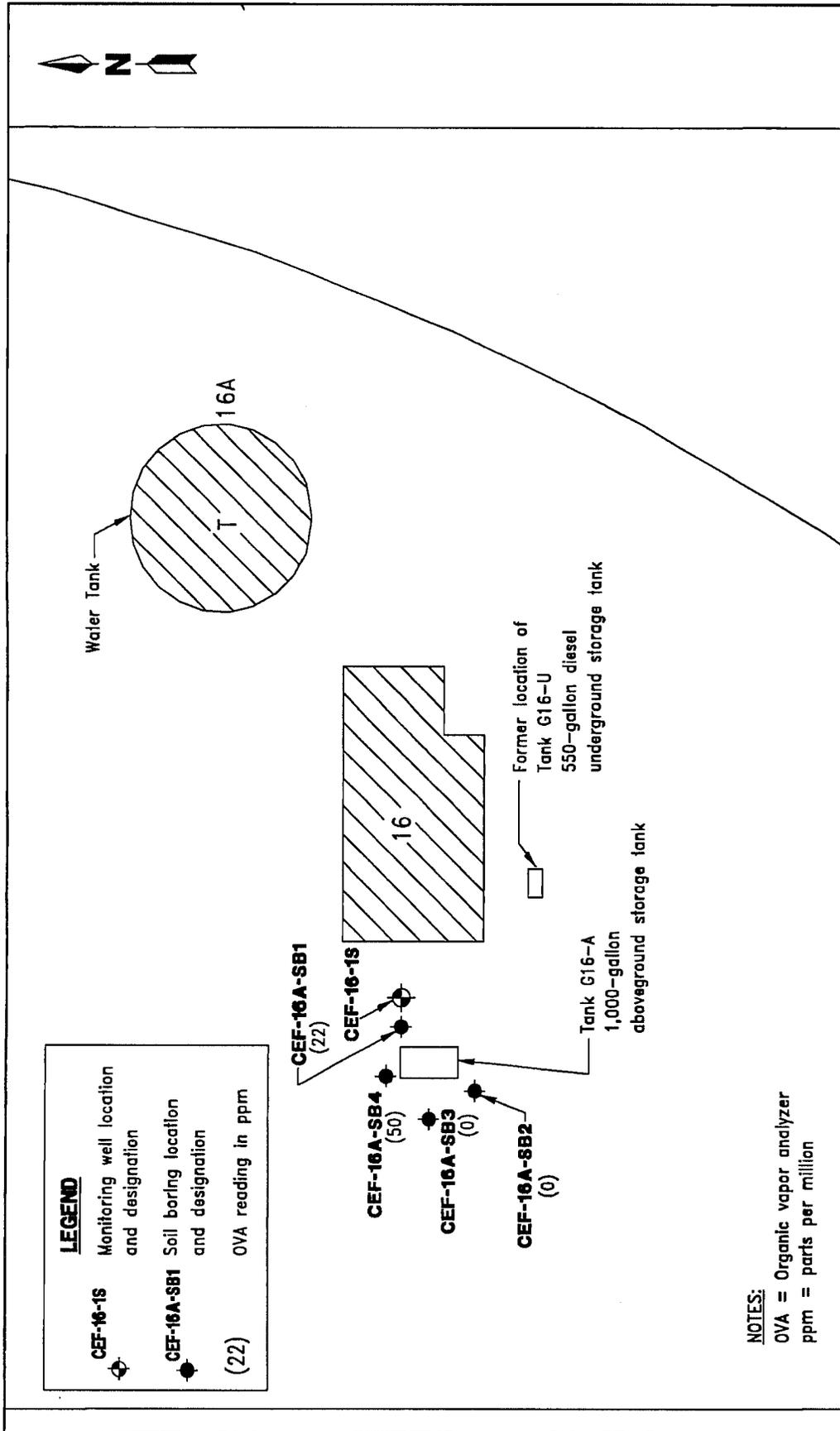


**CONFIRMATORY SAMPLING REPORT
BUILDING 16, TANK G16-A
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

**FIGURE 1
TANK G16-A
WATER TREATMENT PLANT NUMBER 1**



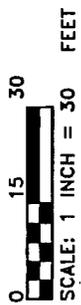
N:\02543\02543-04\SAP\02543337.DWG, HP-88 04/11/98 09:48:06, AUGCAD R1.0



LEGEND

- CEF-16-1S Monitoring well location and designation
- CEF-16A-SB1 Soil boring location and designation
- (22) OVA reading in ppm

NOTES:
OVA = Organic vapor analyzer
ppm = parts per million



**FIGURE 2
TANK G16-A
SOIL BORING AND MONITORING WELL
LOCATIONS**

**CONFIRMATORY SAMPLING REPORT
BUILDING 16, TANK G16-A
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

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**Table 1
Soil Screening Results**

Confirmatory Sampling Report
Building 16, Tank G16-A
Naval Air Station Cecil Field
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-16A-SB1	1	22	0	22
	3	0	-	0
	4 (wet)	90	0	90
CEF-16A-SB2	1	0	-	0
	3	0	-	0
	4 (wet)	0	-	0
CEF-16A-SB3	1	0	-	0
	3	0	-	0
	4 (wet)	0	-	0
CEF-16A-SB4	1	0	-	0
	3	0	-	0
	4	50	0	50
CEF-16-1S	1	0	-	0
	3	0	-	0
	5 (wet)	3	-	3
	11 (wet)	4	-	4

Notes: All soil samples were collected on January 31, 1997.
Monitoring well CEF-16-1S was installed on March 4, 1997.
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.
ppm = parts per million.
bls = below land surface.
- = filtered readings were not collected.
wet = soil sample was completely saturated when analyzed.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank G16-A site provided an adequate assessment of the horizontal and vertical extent of excessively contaminated soil.

No contaminants were detected above the regulatory standard specified in Chapter 62-770, FAC, in the groundwater sample collected from monitoring well CEF-16-1S.

Therefore, no further action is recommended for the Tank G16-A site until proper removal and closure of the AST is performed.

REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).

ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).

APPENDIX A
MONITORING WELL INSTALLATION DETAIL

PROJECT: NAS Cecil Field		LOG of WELL: CEF-18-IS	BORING NO. CEF-18-IS
CLIENT: SOUTH DIV NAV FAC ENG COM	PROJECT NO: 8542-03	DATE STARTED: 3-4-97	COMPLETED: 3-4-97
DRILLING SUBCONTRACTOR: GEOTEK		SITE: Building 18	MONITOR INST. FID
METHOD: 8.25" HSA	WELL CASE DIAM.: 2"	SCREEN INT.: 2-12 FT.	SCREEN SLOT SIZE: D
TOC ELEVATION: FT. NGVD	GROUND ELEV.: FT. NGVD	NORTHING: 2143803	EASTING: 378017
WELL DEVELOP. DATE: 3-5-97	TOTAL DEPTH: 13 FT. BLS	DEPTH TO ∇ 4.70 FT. BLS	LOGGED BY: J Koch

DEPTH FT.	SAMPLE INTERVAL RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
0			SILTY SAND: Medium grey to dark grey, fine grained, moist.		SM	posthole	
0		SILTY SAND: Light brown to light gray, fine grained, moist.	posthole				
5	100%	3	SILTY SAND: Dark brown to black, fine grained, no petroleum odor.			23,1,1	
10	100%	4	SILTY SAND: Dark brown to light grey, fine grained, no petroleum odor.			5,7,8,9	

APPENDIX B
GROUNDWATER ANALYTICAL DATA

Lab Sample Number: B7C2801180
 Site: BRACGREY
 Locator: CEF161S
 Collect Date: 27-MAR-97

BRACGREY ANALYTICAL PARAMETERS

NAME	VALUE	QUAL	UNITS	DL
1,1,1-Trichloroethane	1 U		ug/l	1
1,1,2-Trichloroethane	1 U		ug/l	1
1,1,2,2-Tetrachloroethane	1 U		ug/l	1
1,1,2-Trichloroethane	1 U		ug/l	1
1,1-Dichloroethane	1 U		ug/l	1
1,1-Dichloroethane	1 U		ug/l	1
1,2-Dichlorobenzene	1 U		ug/l	1
1,3-Dichlorobenzene	1 U		ug/l	1
1,4-Dichlorobenzene	1 U		ug/l	1
1,2-Dichloroethane	1 U		ug/l	1
1,2-Dichloropropane	2 U		ug/l	2
1-Methylnaphthalene	2 U		ug/l	2
2-Methylnaphthalene	2 U		ug/l	2
Acenaphthene	1 U		ug/l	1
Acenaphthylene	1 U		ug/l	1
Anthracene	1 U		ug/l	1
Benzene	1 U		ug/l	1
Benzo (a) anthracene	.1 U		ug/l	.1
Benzo (a) pyrene	.1 U		ug/l	.1
Benzo (b) fluoranthene	.1 U		ug/l	.1
Benzo (g,h,i) perylene	.2 U		ug/l	.2
Benzo (k) fluoranthene	.15 U		ug/l	.15
Bromodichloromethane	1 U		ug/l	1
Bromoform	1 U		ug/l	1
Bromomethane	1 U		ug/l	1
Carbon tetrachloride	1 U		ug/l	1
Chlorobenzene	1 U		ug/l	1
Chloromethane	1 U		ug/l	1
Chloroform	1 U		ug/l	1
Chloromethane	1 U		ug/l	1
Chloromethane	.1 U		ug/l	.1
Chrysene	.2 U		ug/l	.2
Dibenzo (a,h) anthracene	1 U		ug/l	1
Dibromochloromethane	1 U		ug/l	1
Dichlorodifluoromethane	1 U		ug/l	1
Ethylbenzene	1 U		ug/l	1
Ethylene dibromide	.02 U		ug/l	.02
Fluoranthene	.2 U		ug/l	.2
Fluorene	2 U		ug/l	2
Indeno (1,2,3-cd) pyrene	.1 U		ug/l	.1
Lead	5 U		ug/l	5
Methyl tert-butyl ether	1 U		ug/l	1
Methylene chloride	1 U		ug/l	1
Naphthalene	2 U		ug/l	2
Phenanthrene	2 U		ug/l	2
Pyrene	.2 U		ug/l	.2
Tetrachloroethene	1 U		ug/l	1
Toluene	1 U		ug/l	1
Total petroleum hydrocarbons	.5 U		ug/l	.5
Trichloroethene	1 U		ug/l	1
Trichlorofluoromethane	1 U		ug/l	1
Vinyl chloride	1 U		ug/l	1

UST GREY ANALYTICAL PARAMETERS -- TANK G16-A
 -- REPORT NO. 9426

Lab Sample Number: 87C2801180
 Site: BRACGREY
 Locator: CEF161S
 Collect Date: 27-MAR-97

VALUE QUAL UNITS DL

VALUE	QUAL	UNITS	DL
1 U	U	ug/l	1
1 U	U	ug/l	1
1 U	U	ug/l	1
1 U	U	ug/l	1

Xylenes (total)
 cis-1,3-Dichloropropene
 trans-1,2-Dichloroethene
 trans-1,3-Dichloropropene

Lead-DISS

U = NOT DETECTED J = ESTIMATED VALUE
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED
 R = RESULT IS REJECTED AND UNUSABLE

APPENDIX B

**FDEP TECHNICAL REVIEW LETTER
RE: TtNUS CSR REV. 0 FOR TANK G16-A**



Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

October 20, 2000

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Commanding Officer
Mr. Nick Ugolini, Code 1843
SOUTHNAVFACENGCOM
Post Office Box 190010
North Charleston, SC 29419-0068

RE: Confirmation Sampling Report, Building 16, Tank G16-A, Naval
Air Station Cecil Field, Florida.

Dear Mr. Ugolini:

I have completed the technical review of the Confirmation Sampling Report for Tank G16-A, dated September 2000 (received October 4, 2000), prepared and submitted by Tetra Tech NUS. Based on the information supplied in the report, I cannot concur with the recommendation for No Further Action. Filtered OVA concentration data exceeded unfiltered data in several samples.

If you have any concerns regarding this letter, please contact me at (850) 488-3693.

Sincerely,

David P. Grabka
Remedial Project Manager

cc: Brian Cheary, FDEP Northeast District
Debbie Vaughn-Wright, USEPA - Atlanta
John Flowe, City of Jacksonville
Scott Glass, SOUTHNAVFACENGCOM
Joe Logan, TtNUS, Pittsburgh

TJB B JJC offe for offe ESN offe

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

Printed on recycled paper.

APPENDIX C

**FDEP TECHNICAL REVIEW LETTER
RE: TtNUS CSR REV. 1 FOR TANK G16-A**



Department of Environmental Protection

Jeb Bush
Governor

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

David B. Struhs
Secretary

February 20, 2002

Commanding Officer
Mr. Wayne Hansel, Code ES245
SOUTHNAVFACENGCOM
Post Office Box 190010
North Charleston, SC 29419-0068

RE: Confirmatory Sampling Report for Building 16, Tank G16-A,
Naval Air Station Cecil Field

Dear Mr. Hansel:

I have completed the technical review of the Confirmatory Sampling Report for Building 16, Tank G16-A, Naval Air Station Cecil Field, dated January 2002 (received January 9, 2002), prepared and submitted by Tetra Tech NUS, Inc. The Confirmatory Sampling Report identified very limited soil contamination above Florida soil cleanup target levels. Therefore, I concur with the consultant's recommendation that a limited-scope site assessment be conducted for the purposes of determining the limits of soil contamination and evaluating the condition of groundwater under the soil contamination.

If you have any concerns regarding this letter, please contact me at (850) 921-9991.

Sincerely,

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

cc: Brian Cheary, FDEP Northeast District
Dawn Taylor, USEPA - Atlanta
John Flowe, City of Jacksonville
Scott Glass, SOUTHNAVFACENGCOM
Paul Calligan, Tetra Tech NUS

TJB B JJC JJC ESN ESN

APPENDIX D

**HAND AUGER SOIL BORING LOGS
AND
SOIL SAMPLE LOG SHEETS**

56 Location Cecil Field Date 6/14/00
 Project / Client US Navy
CEU 121 OASG

1020 CEF-13/6-S13-001

depth	soil desc.	150 T.	F.	Corrected
0-1	md grey/brn, fg, ss, dry	15	30	30.0
1-3	wh, fg, ss, s. damp	10	180	
3-5	Lt. brn, fg, ss, damp	10	100	
5' ~	∇	* No odor detected		

1040 B16-SB-002

depth	soil desc.	T.	F.	Corrected
0-1	md/Lt. grey, fg, ss, dry	20	50	
1-3	Lt. grey, fg, ss, dry	20	15	5.0
3-5	Lt. grey, fg, ss, damp	100	20	30.0
5' -	∇	* No odor detected		

1103 B16-SB-003

depth	soil desc.	T.	F.	Corrected
0-1	Lt. grey silt, dry	3.0	3.0	0.0
1-3	brn, ss, fg, dry	0.0	0.0	0.0
3-5	grey, ss, fg, moist	0.0	0.0	0.0
∇ at 5'				

1113 B16-SB-004

depth	soil desc.	T.	F.	Corrected
0-1	md. grey, silt, dry	4.0	7.0	0.0
1-3	Lt. brn, ss, fg, dry	1.0	0.0	1.0
3-5	Lt. brn, ss, fg, wet	2.0	0.0	0.0

Chris Wall 6/14/00

BORING LOG



Tetra Tech NUS, Inc.

Page 1 of 1

PROJECT NAME: NAS CECIL FIELD BORING NUM CEF-316-SBR-001
 PROJECT NUMBER: 0486.GH0.050.195 DATE: 2-9-01
 DRILLING COMPANY: TiNUS GEOLOGIST: ~~L. Knight and M. O'Neill~~
 DRILLING RIG: Not applicable DRILLER: n/a *Umiddelton E Rodriguez*

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)			
					Soil Density/Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole	Driller BZ**
	<u>0.5 - 1.0 ft.</u>				<u>fine tan sandy & dk brown clayey sand with roots.</u>				<u>FID</u> <u>Unfiltered</u>	<u>90.4</u>	<u>0.7</u>	<u>89.3</u>	<u>3</u>
	<u>2.5 - 3.0 ft.</u>				<u>fine tan & beige sand</u>				<u>Filtered</u>	<u>9.1</u>	<u>0.7</u>	<u>8.4</u>	
	<u>4.5 ft - 5.0 ft.</u>				<u>beige sand</u>					<u>5.1</u>	<u>0.7</u>	<u>4.4</u>	
					<u>background</u>					<u>1.3 ppm</u>	<u>0.9</u>		

* When rock or soil or rock brokenness.

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

Remarks: Adjacent to original S3001 hand auger

Drilling Area Background (ppm):

Converted to Well: Yes No Well I.D. #:

BORING LOG



Tetra Tech NUS, Inc.

Page 1 of 1

PROJECT NAME: NAS CECIL FIELD BORING NUM CEF- B16- SBR-002
 PROJECT NUMBER: 0486.GH0.050.195 DATE: 2-9-01
 DRILLING COMPANY: TiNUS GEOLOGIST: L. Knight and M. O'Neill
 DRILLING RIG: Not applicable DRILLER: n/a (Muddleton E Rodriguez)

Sample No. and Type or RGD	Depth (Ft.) or Run No.	Blows / 6" or RGD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			USCS *	Remarks	PID/FID Reading (ppm)			
					Soil Density/Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole	Driller BZ
	<u>0.5 - 1.0 ft</u>				<u>light tan fine sand and roots</u>				<u>FID ppm</u> <u>unfiltered filtered</u>				
										<u>1.5</u>	<u>0.8</u>	<u>0.7</u>	
	<u>2.5 - 3.0 ft</u>				<u>brown black clayey sand with roots & organic matter</u>					<u>1.9</u>	<u>0.8</u>	<u>0.8</u>	<u>1.1 MB</u>
	<u>4.5 - 5.0 ft</u>				<u>black brown clayey mud-saturated</u>					<u>1.2</u>	<u>0.8</u>	<u>0.4</u>	
										<u>background 1.3 ppm</u>	<u>0.9 ppm</u>		

* When rock or ~~or~~ rock brokenness.

** Include monitor rearing in 6 foot intervals @ 10 min. Increase reading frequency if elevated response read.

Remarks: Adjacent to SB 002

Drilling Area
Background (ppm):

hard canger

Converted to Well: Yes No Well I.D. #: _____



BORING LOG

PROJECT NAME: Day Tank 1, Phase II BORING NUMBER: CEF-B16-SB-008
 PROJECT NUMBER: N0039DS005H105 3996 DATE: 10/12/02
 DRILLING COMPANY: Columbia Tech GEOLOGIST: SRM
 DRILLING RIG: _____ DRILLER: SRM

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION			U S C S *	Remarks	PID/FID Reading (ppm)				
					Soil Density/Consistency or Rock Hardness	Color	Material Classification			Sample	Sampler BZ	Borehole	Driller BZ	
				0-1			DK Brn Fi sa / some Gray							0
				1-2.5'			Very Pale Brn Fi sa	2.5'	moist		0	0	0	
				2.5-4			Very Pale Brn Fi sa	3'	saturated					
														0
									UNF FIL COR					
									1'	0	0	0		
									2.5'	0	0	0		

* When rock coring, enter rock brokenness.

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

Remarks: No lab samples collected

Drilling Area Background (ppm): 0

Converted to Well: Yes _____ No _____

Well I.D. #: _____



Project Site Name: NAS CECIL FIELD
Project No.: N0039.DS0.05E.145

Sample ID No.: CEF-B16-SS-001-01
Sample Location: CEF-16-15
Sampled By: L. MEDDLETON
C.O.C. No.: CE16-030101

- Surface Soil
- Subsurface Soil
- Sediment
- Other: _____
- QA Sample Type: _____

- Type of Sample:
- Low Concentration
 - High Concentration

GRAB SAMPLE DATA:

Date: <u>3/1/01</u>	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: <u>1205</u>	<u>0-1'</u>	<u>LT GRAY</u>	<u>SANDY, DRY</u>
Method: <u>disp. trowel</u>			
Monitor Reading (ppm): <u>0.0</u>			

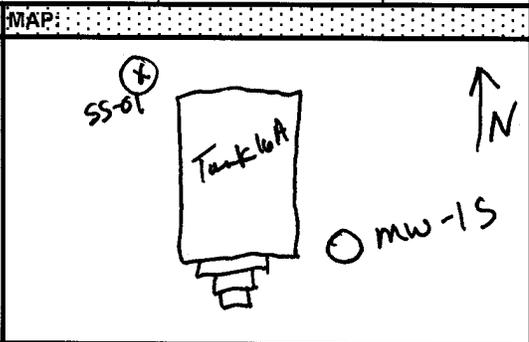
COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	LAB
Pesticides SW846 8081A	8-oz. Glass jar		Accutest
PAHs SW846 8310	(1) 8oz Glass Amber Jar	X	Accutest <i>ACCURA</i>
PCBs SW846 8082	8-oz. Glass jar		Accutest
TRPH FL-PRO	8oz Glass jar	X	Accutest <i>ACCURA</i>
<u>BTEX & MTBE 8260B</u>	<u>3 - ENCORE SAMPLERS</u>	X	<u>ACCURA</u>

OBSERVATIONS / NOTES:



Circle if Applicable:

MS/MSD Duplicate ID No.: NONE

Signature(s): [Signature]



Project Site Name: Tank G16A
 Project No.: N3996JG0050235
 Sample ID No.: CEF-B16-SS-001-01A
 Sample Location: CEF-B16-SB-001
 Sampled By: LM/LK
 C.O.C. No.: B16-053002

Surface Soil
 Subsurface Soil
 Sediment
 Other:
 QA Sample Type:

Type of Sample:
 Low Concentration
 High Concentration

GRAB SAMPLE DATA:			
Date:	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
5/30/02	0.5 to 1.0 ft bls	MEDIUM GREY	SAND: fines dry
Time: 1330			
Method: Disp. Trowel			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:				
Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
NA				
Method: NA				
Monitor Readings (Range in ppm): NA			NA	

SAMPLE COLLECTION INFORMATION:			
Analysis	Container Requirements	Collected	LAB
TPHCWG	(1) 4oz. Glass Jar	X	STL

OBSERVATIONS / NOTES: MAP:

MW-025
 SOIL SAMPLE
 CEF-B16-SS-001-01A

Circle if Applicable:

MS/MSD None	Duplicate ID No.: None
----------------	---------------------------

Signature(s):

APPENDIX E

WELL BORING LOGS AND CONSTRUCTION DIAGRAMS

BORING LOG



Tetra Tech NUS, Inc.

Page 1 of 1

PROJECT NAME: NAS CECIL FIELD BORING NO.: CEF-B16-SB-001
 PROJECT NUMBER: N3996 JG0 050385 DATE: 5/21/02
 DRILLING COMPANY: PARTRIDGE GEOLOGIST: LOUIS KNIGHT
 DRILLING RIG: B-3500 DRILLER: ~~PARTRIDGE~~ M. NICHOLSON

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION		U S C S *	Remarks	PID/FID Reading (ppm)					
					Soil Density/Consistency or Rock Hardness	Color			Material Classification	Sample	Sampler BZ	Borehole**	Driller BZ**	
				1.5		GRASS/ROOTS/TOPSOIL: SAND; lt. grey								
						SAND. fine. v. fine; yellow-brown, pale yellow								
				5.0		SAND: fine. v. fine; fine; black								
				9.0		SAND, AS ABOVE, medium brown								
				14.0		EOB = 14'								

* When rock or soil rock brokeness.

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

Remarks: _____

Drilling Area Background (ppm):

Converted to Well: Yes X No _____ Well I.D. #: CEF-G16-023

BORING LOG



Tetra Tech NUS, Inc.

Page 1 of 1

PROJECT NAME: NAS CECIL FIELD BORING NO.: CEF-B16-5B-004
 PROJECT NUMBER: N3996 JGO 050385 DATE: 5/21/07
 DRILLING COMPANY: FARTRIDGE GEOLOGIST: LOUIS KNIGHT
 DRILLING RIG: B-3500 DRILLER: M. NECHOLSON

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION		U S C S *	Remarks	PID/FID Reading (ppm)									
					Soil Density/Consistency or Rock Hardness	Color			Material Classification	Sample	Sampler BZ	Borehole*	Driller BZ**					
				1.0		LIMESTONE FILL												
						SAND: fine/v. fine												
						med. brown, pale												
						yellow brown												
				4.5		SAND: fine/v. fine;												
						black												
				8.5		SAND, AS ABOVE,												
						medium brown												
				14.0		FOB = 14.615												

* When rock or soil rock brokenness.

** Include monitoring readings in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: _____

Drilling Area Background (ppm):

Converted to Well: Yes No Well I.D. #: CEF-G16-035



Tetra Tech NUS, Inc.

WELL No.:

CEF-G16-028

MONITORING WELL SHEET

PROJECT: NAS CECIL FIELD

DRILLING Co.:

PARTRIDGE

BORING No.: CEF-B16-SB-001

PROJECT No.: N3996

DRILLER:

M. NICHOLSON

DATE COMPLETED: 5/21/62

SITE:

TANK G-16A

DRILLING METHOD:

HSA

NORTHING: _____

GEOLOGIST:

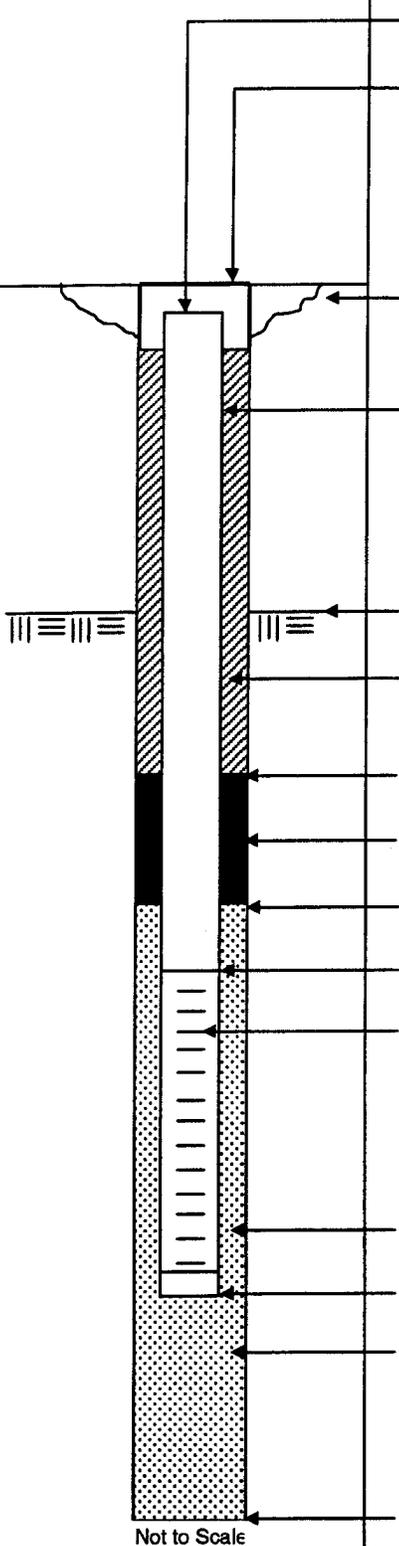
L. KNIGHT

DEV. METHOD:

Submersible

EASTING: _____

Ground Elevation =
Datum:



Elevation / Depth of Top of Riser: 1

Elevation / Height of Top of Surface Casing: 1

I.D. of Surface Casing: N/A

Type of Surface Casing: 8" MANHOLE

Type of Surface Seal: QUIKRETE

I.D. of Riser: 2"

Type of Riser: SCH 40 PVC

Borehole Diameter: 8"

Elevation / Depth Top of Rock: N/A

Type of Backfill: TYPE I PORTLAND CEMENT

Elevation / Depth of Seal: 11.0

Type of Seal: 30/65 FINE SAND

Elevation / Depth of Top of Filter Pack: 12.0

Elevation / Depth of Top of Screen: 13.0

Type of Screen: PVC (SCH 40)

Slot Size x Length: 0.01" x 10ft

I.D. of Screen: 2"

Type of Filter Pack: 20/30 SILICA SAND

Elevation / Depth of Bottom of Screen: 113.0

Elevation / Depth of Bottom of Filter Pack: 114.0

Type of Backfill Below Well: _____

Elevation / Total Depth of Borehole: 114.0

Not to Scale

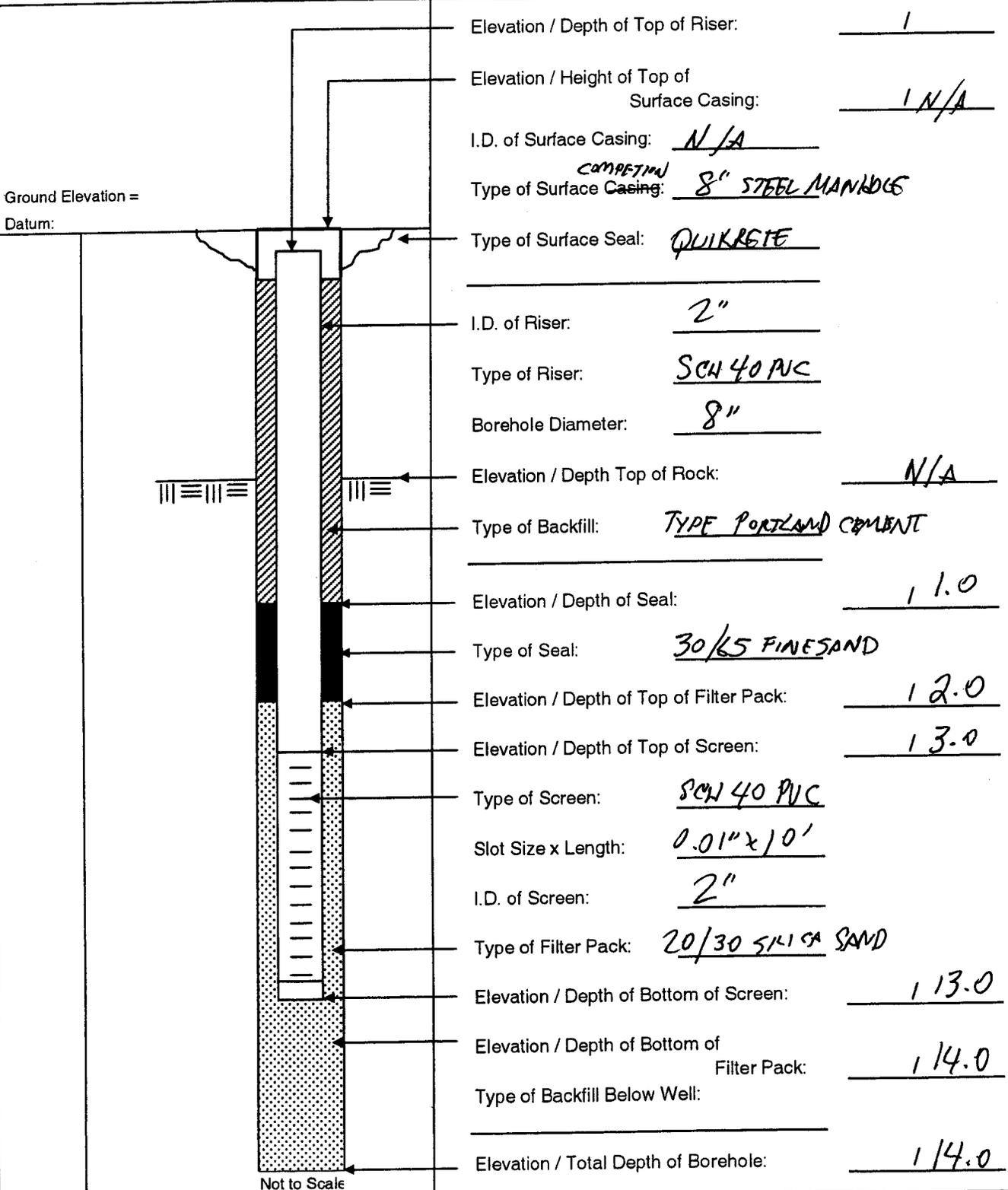


Tetra Tech NUS, Inc.

WELL No.: CEF-G16-035

MONITORING WELL SHEET

PROJECT: NAS CECIL FIELD DRILLING Co.: PARTRIDGE BORING No.: CEF-B16-SB-004
 PROJECT No.: N3996 DRILLER: M. NICHOLSON DATE COMPLETED: 5/2/63
 SITE: TANK G-16A DRILLING METHOD: HSA NORTHING: _____
 GEOLOGIST: L. KNIGHT DEV. METHOD: Submersible EASTING: _____



Elevation / Depth of Top of Riser: 1
 Elevation / Height of Top of Surface Casing: N/A
 I.D. of Surface Casing: N/A
 Type of Surface Casing: COMPACTED 8" STEEL MANHOLE
 Type of Surface Seal: QUICKRETE
 I.D. of Riser: 2"
 Type of Riser: SCH 40 PVC
 Borehole Diameter: 8"
 Elevation / Depth Top of Rock: N/A
 Type of Backfill: TYPE PORTLAND CEMENT
 Elevation / Depth of Seal: 11.0
 Type of Seal: 30/65 FINESAND
 Elevation / Depth of Top of Filter Pack: 12.0
 Elevation / Depth of Top of Screen: 13.0
 Type of Screen: SCH 40 PVC
 Slot Size x Length: 0.01" x 10'
 I.D. of Screen: 2"
 Type of Filter Pack: 20/30 5/16" SAND
 Elevation / Depth of Bottom of Screen: 113.0
 Elevation / Depth of Bottom of Filter Pack: 114.0
 Type of Backfill Below Well: _____
 Elevation / Total Depth of Borehole: 114.0

Ground Elevation = Datum:

Not to Scale

APPENDIX F

TOC SURVEY DATA

Survey Elevation Calculations
 Tank G16-A
 Site Assessment Report
 NAS Cecil Field
 Jacksonville, Florida

<u>Height of Instrument</u>	<u>±</u>	<u>=</u>	<u>Elevation</u>	<u>Description</u>
			81.04	Assigned elevation to arbitrary benchmark southwest corner of concrete pad for Tank G16-A.
85.32	4.28			Height of Benchmark in current survey setup
85.32		5.34	79.98	CEF-G16-01S
85.32		5.55	79.77	CEF-G16-02S
85.32		5.14	80.18	CEF-G16-03S

APPENDIX G

GROUNDWATER FIELD DATA SHEETS



Project Site Name: BLDG 16 TANK G16-A
 Project No.: _____
 Domestic Well Data
 Monitoring Well Data
 Other Well Type: _____
 QA Sample Type: _____

Sample ID No.: CEF-B16-G16-01
 Sample Location: CEF-16-15
 Sampled By: L. MIDDLETON
 C.O.C. No.: CP16-030101
 Type of Sample:
 Low Concentration
 High Concentration

SAMPLING DATA

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time:	Visual	Standard	mS/cm	°C	NTU	mg/l		
<u>3/1/01</u>	<u>LTBRN</u>	<u>5.44</u>	<u>0.180</u>	<u>19.8</u>	<u>9</u>	<u>2.32</u>	<u>192</u>	

PURGE DATA

Date:	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
<u>3/1/01</u>								
Method: Low Flow Peristaltic								
Monitor Reading (ppm):	<u>1.1</u>							
Well Casing Diameter:	<u>2"</u>							
Well Casing Material:	<u>PVC</u>							
Total Well Depth (TD):	<u>11.90</u>							
Static Water Level (WL):	<u>5.55</u>							
One Casing Volume (gal):	<u>4</u>							
Start Purge (hrs):	<u>1110</u>							
End Purge (hrs):	<u>1150</u>							
Total Purge Time (min):	<u>4540 MB</u>							
Total Vol. Purged (gal):	<u>17</u>							

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
<u>BTEX+m+BE+VCH (8260)</u>	<u>HCl none</u>	<u>3 - 40ml glass</u>	<input checked="" type="checkbox"/>
<u>PAH (8210)</u>	<u>none</u>	<u>2 - 40ml glass IL</u>	<input checked="" type="checkbox"/>
<u>TRPH (FLPRD)</u>	<u>HCl</u>	<u>2 - 40ml glass IL</u>	<input checked="" type="checkbox"/>
<u>Total Lead</u>	<u>NO3</u>	<u>1 - 100ml plastic</u>	<input checked="" type="checkbox"/>
<u>EDB</u>	<u>HCl</u>	<u>3 - 40ml glass</u>	<input checked="" type="checkbox"/>

OBSERVATIONS / NOTES

BGD PID = 0.07PM Well absent of any free product.
Teflon tubing Lab: Accura
Purge water to Lift Station

Circle if Applicable:

Signature(s):

MS/MSD

Duplicate ID No.:

None

[Signature]



Project Site Name: Tank G-16A
 Project No.: N3996JG0050225

Domestic Well Data
 Monitoring Well Data
 Other Well Type: _____
 QA Sample Type: _____

Sample ID No.: CEP-G16-GW-015-02
 Sample Location: CEP-G16-015
 Sampled By: LM/LK
 C.O.C. No.: G16A-052302
 Type of Sample:
 Low Concentration
 High Concentration

SAMPLING DATA

Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
<u>5/23/07</u>	<u>LS Brown</u>	<u>5.30</u>	<u>0.145</u>	<u>20.3</u>	<u>29</u>	<u>2.3</u>	<u>-</u>	
Time: <u>1035</u>								
Method: <u>Low Flow Peristaltic</u>								

PURGE DATA

Date:	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
<u>5/23/07</u>								
Method: <u>Low Flow Peristaltic</u>								
Monitor Reading (ppm): <u>0</u>								
Well Casing Diameter: <u>2"</u>								
Well Casing Material: <u>PVC</u>								
Total Well Depth (TD): <u>12</u>								
Static Water Level (WL): <u>4.98</u>								
One Casing Volume (gal): <u>0.43</u>								
Start Purge (hrs): <u>0905</u>								
End Purge (hrs): <u>1030</u>								
Total Purge Time (min): <u>85</u>								
Total Vol. Purged (gal): <u>0.25</u>								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
BTEX, MTBE, PPVOHs, 1,2-EDC	HCL	3 40-ml vials	<input checked="" type="checkbox"/>
SW846 8260B			
PAHs (including 1-MN and 2-MN)	None	2 1-liter glass ambers	<input checked="" type="checkbox"/>
SW846 8310			
TRPH FL-PRO	H2SO4	2 1-liter glass ambers	<input checked="" type="checkbox"/>
EDB 504.1	HCL	2 40-ml vials	<input checked="" type="checkbox"/>
Total Lead (Pb) SW846 6010B	HNO3	1 500-ml HDPE	<input checked="" type="checkbox"/>

OBSERVATIONS / NOTES

Circle if Applicable: MS/MSD Duplicate ID No.: _____ Signature(s):



Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME:
PROJECT NUMBER:

NAS Cecil Field
N3996JG0050225

WELL ID.: CEF-G16-015
DATE: 5/2/02

Time (Hrs)	Water Level (ft. below TOC)	Flow (ml/min)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
0905	4.98	400	5.13	0.166	138	2.6	22.1	LT BED
0925	5.27	400	5.24	0.143	47	4.6	22.0	
0935	5.27	400	5.26	0.143	86	2.9	22.0	
0945	5.27	400	5.27	0.144	69	3.8	22.0	
0955	5.27	200	5.23	0.143	55	3.2	22.3	
1005	5.27	200	5.24	0.143	51	3.3	22.3	
1015	5.26	200	5.26	0.145	35	2.4	22.4	
1025	5.26	200	5.29	0.145	31	2.3	22.3	
1030	5.26	200	5.30	0.145	29	2.3	22.3	
	END	PURGE						

SIGNATURE(S):



Project Site Name: Tank G-16A
 Project No.: N3996JG0050225

Domestic Well Data
 Monitoring Well Data
 Other Well Type:
 QA Sample Type:

Sample ID No.: CEF-G16^{GW}025-01
 Sample Location: CEF-G16-025
 Sampled By: LMLR
 C.O.C. No.: G16-052302
 Type of Sample:
 Low Concentration
 High Concentration

SAMPLING DATA

Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
5/23/02 1325	LTBROWN	4.68	0.121	23.4	7	5.6		

PURGE DATA

Date:	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
5/23/02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2"								
Well Casing Material: PVC								
Total Well Depth (TD): 12.80								
Static Water Level (WL): 4.69								
One Casing Volume (gal): 4.9								
Start Purge (hrs): 1200								
End Purge (hrs): 1320								
Total Purge Time (min): 80								
Total Vol. Purged (gal): 24								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
BTEX, MTBE, PPVOHs, 1,2-EDC	HCL	3 40-ml vials	X
SW846 8260B			X
PAHs (including 1-MN and 2-MN)	None	2 1-liter glass ambers	X
SW846 8310			X
TRPH FL-PRO	H2SO4	2 1-liter glass ambers	X
EDB 504.1	HCL	2 40-ml vials	X
Total Lead (Pb) SW846 6010B	HNO3	1 500-ml HDPE	X

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.:

G16
~~CEF-G16-GW-DU01-02~~
 RLM

Signature(s):



Project Site Name:	Tank G-16A	Sample ID No.:	CEF-G16-GW-035-01
Project No.:	N3996JG0050225	Sample Location:	CEF-G16-035
<input type="checkbox"/> Domestic Well Data		Sampled By:	S.M.L.L.C.
<input checked="" type="checkbox"/> Monitoring Well Data		C.O.C. No.:	G16-052302
<input type="checkbox"/> Other Well Type:		Type of Sample:	
<input type="checkbox"/> QA Sample Type:		<input checked="" type="checkbox"/> Low Concentration	
		<input type="checkbox"/> High Concentration	

SAMPLING DATA

Date:	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
5/23/07	Yellow	5.16	0.122	23.0	22	2.6	-	-

PURGE DATA

Date:	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
5/23/07								
Method: Low Flow Peristaltic								
Monitor Reading (ppm):								
Well Casing Diameter: 2"								
Well Casing Material: PVC								
Total Well Depth (TD): 12.98								
Static Water Level (WL): 5.07								
One Casing Volume (gal): 04.9								
Start Purge (hrs): 1410								
End Purge (hrs): 1515								
Total Purge Time (min): 65								
Total Vol. Purged (gal/L): 25								
See Low Flow Purge Data Sheet								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
BTEX, MTBE, PPVOHs, 1,2-EDC	HCL	3 40-ml vials	X
SW846 8260B			
PAHs (including 1-MN and 2-MN)	None	2 1-liter glass ambers	X
SW846 8310			
TRPH FL-PRO	H2SO4	2 1-liter glass ambers	X
EDB 504.1	HCL	2 40-ml vials	X
Total Lead (Pb) SW846 6010B	HNO3	1 500-ml HDPE	X

OBSERVATIONS / NOTES

--

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

APPENDIX H

SOIL LABORATORY REPORTS

ACCURA ANALYTICAL LABORATORY, INC.
6017 Financial Drive, Norcross, Georgia, 30071, Phone (770) 449-8800

CASE NARRATIVE for Project Number: 27166
Client Project: NAS Cecil Field – Tank 16A / N0486 / CTO 121
CTO Manager: Paul Calligan

The following items were noted concerning this project:

1. The following samples were received by Accura Analytical Laboratory on 03/02/01 at 0915:

<u>Client I.D.</u>	<u>Laboratory I.D.</u>
CEF-B16-SS-001-01	AC09061
CEF-B16-GW-01S-01	AC09062
2. The sample cooler temperature was noted to be 3^oC upon receipt.
3. The Encore samplers were transferred into the preserved sodium bisulfate vials on 3/2/01 at 14:05.
4. The soil sample results are reported on a dry weight basis.
5. The "J" values noted for the VOC, Metal-Lead, and FL-PRO results indicate estimated concentrations that were above the method detection limits, but below the reporting limits.
6. The "B" value noted for the FL-PRO analysis indicates that the compound was detected in the sample and in the Method Blank, and the result should be considered estimated due to Method Blank contamination.
7. The pH for sample CEF-B16-GW-01S-01 was 1.0 for the VOC analysis.
8. The following sample required dilution due to high analyte concentration or matrix interference, resulting in elevated detection limits:

FL-PRO (Soil)
CEF-B16-SS-001-01

PAH – SW-846-8270C
CEF-B16-SS-001-01

9. The following surrogates were outside the method specified limit:

FL-PRO

C39(Nonatriacontane) - CEF-B16-SS-001-01
CEF-B16-GW-OIS-01
Method Blank (Soil)
Method Blank (Water)
Laboratory Control Sample (Water)
Laboratory Control Sample (Soil)
Matrix Spike (Water)
Matrix Spike Duplicate (Water)
Matrix Spike Duplicate (Soil)
o-Terphenyl - CEF-B16-SS-001-01
Matrix Spike (Soil)

The recoveries were within historical limits established in the laboratory; therefore the data was accepted.

10. Project Specified QC consists of LCS/LCSD for the Water FL-PRO and Water SVOC analyses due to limited sample volume. Note that LCS/LCSD recoveries are reported as MS/MSD recoveries on the QC spreadsheet.

11. Batch QC is reported for the Soil VOC analysis.

12. The laboratory control sample recoveries were outside the project specified limit for the following analyte:

FL-PRO (Water)
FL-PRO (Soil)

The recoveries were within historical limits established in the laboratory; therefore the data was accepted.

13. The laboratory control sample recovery was outside the project specified limit for the following analyte:

Water VOC - SW-846-8260B
Acrolein

Acrolein was not detected in the water sample; therefore the data results were accepted.

14. The following spike recoveries were outside the project specified limits due to matrix interference:

FL-PRO

Matrix Spike - FL-PRO (Soil)

Matrix Spike - FL-PRO (Water)

Soil PAH – SW-846-8270C

Matrix Spike - Dibenzo (a,h) anthracene

Matrix Spike Duplicate - Dibenzo (a,h) anthracene

Water VOC – SW-46-8260B

Matrix Spike - Methylene Chloride

Soil VOC – SW-46-8260B

Matrix Spike - Xylene

15. The following spike recoveries were outside the project specified limits due to the fact that in the presence of Hydrochloric Acid, (sample preservative), 2-Chloroethylvinylether breaks down:

Water VOC – SW-846-8260B

Matrix Spike / Matrix Spike Duplicate - 2-Chloroethylvinylether

16. The relative percent difference between the matrix spike and matrix spike duplicate was outside the project specified limit for the following analytes:

Water VOC – SW-846-8260B

2-Chloroethylvinylether

Soil VOC – SW-846-8260B

Xylene



Quality Assurance

PROJECT QUALITY CONTROL RESULTS
AAL PROJECT #27166

Method No ¹	Analyte / Component	Project Control Rec.		Accuracy Limits		Project Control		Precision Limits		Project Control		Accuracy Limits		Precision Limits	
		MS	MSD	MS	MSD	MS/MSD	% Deviation	Water	Soil ²	MS/MSD	% Deviation	Water	Soil ²	Water	Soil ²
VOLATILES BY GC/MS															
8260B	1,1,1-Trichloroethane	96	104	101	60-140	20-150	%	<30	%	<50	100	100	65-135	65-135	<75
8260B	1,1,2,2-Tetrachloroethane	100	97	93	60-140	20-150	3%	5%	<30	<50	101	101	64-135	64-135	<75
8260B	1,1,2-Trichloroethane	101	97	102	60-140	20-150	4%	5%	<30	<50	92	101	65-135	65-135	<75
8260B	1,1-Dichloroethane	94	95	104	60-140	20-150	1%	5%	<30	<50	97	101	62-135	62-135	<75
8260B	1,1-Dichloroethane	96	95	106	60-140	20-150	1%	5%	<30	<50	93	98	65-135	65-135	<75
8260B	1,2-Dichloroethane	102	93	103	60-140	20-150	9%	1%	<30	<50	97	99	58-137	58-137	<75
8260B	1,2-Dichloropropane	96	93	108	60-140	20-150	3%	3%	<30	<50	92	102	60-135	60-135	<75
8260B	1,3-Dichloropropane	99	93	106	60-140	20-150	6%	4%	<30	<50	91	99	65-135	65-135	<75
8260B	2-Chloroethylvinyl ether	110	107	107	60-140	20-150	3%	3%	<30	<50	77	100	65-135	65-135	<75
8260B	Acetone	121	107	112	60-140	20-150	12%	4%	<30	<50	62	107	65-135	65-135	<75
8260B	Acrylonitrile	100	93	94	60-140	20-150	7%	4%	<30	<50	80	103	63-135	63-135	<75
8260B	Benzene	93	96	105	60-140	20-150	3%	2%	<30	<50	95	99	65-135	65-135	<75
8260B	Bromochloromethane	93	92	103	60-140	20-150	1%	1%	<30	<50	95	99	65-135	65-135	<75
8260B	Bromomethane	91	90	97	60-140	20-150	1%	4%	<30	<50	85	96	65-135	65-135	<75
8260B	Bromonethane	91	106	111	60-140	20-150	2%	3%	<30	<50	101	92	62-135	62-135	<75
8260B	Carbon Tetrachloride	93	96	103	60-140	20-150	3%	2%	<30	<50	100	95	52-135	52-135	<75
8260B	Chlorobenzene	93	95	110	60-140	20-150	2%	3%	<30	<50	94	101	65-135	65-135	<75
8260B	Chloroform	95	96	104	60-140	20-150	1%	1%	<30	<50	97	98	64-135	64-135	<75
8260B	Chloromethane	96	93	87	60-140	20-150	3%	6%	<30	<50	95	83	65-135	65-135	<75
8260B	Ethylbenzene	97	100	112	60-140	20-150	3%	3%	<30	<50	103	103	65-135	65-135	<75
8260B	Methylene Chloride	143	132	96	60-140	20-150	8%	3%	<30	<50	106	84	65-135	65-135	<75
8260B	Methyl-tert-butyl ether	99	90	104	60-140	20-150	10%	3%	<30	<50	83	100	65-135	65-135	<75
8260B	Tetrachloroethylene	98	100	114	60-140	20-150	2%	4%	<30	<50	100	101	61-135	61-135	<75
8260B	Toluene	95	98	110	60-140	20-150	3%	6%	<30	<50	98	99	64-135	64-135	<75
8260B	Trans-1,2-Dichloroethane	94	96	106	60-140	20-150	2%	3%	<30	<50	95	99	65-135	65-135	<75
8260B	Trichloroethylene	95	95	106	60-140	20-150	0%	3%	<30	<50	96	99	61-135	61-135	<75
8260B	Vinyl Chloride	92	90	95	60-140	20-150	2%	8%	<30	<50	90	89	36-144	36-144	<75
8260B	tolu-xylene	97	100	117	60-140	20-150	3%	147%	<30	<50	100	105	65-135	65-135	<75
8260B	Toluene-d8 (sur)	94	100	100	75-125	65-135	6%	0%	NA	NA	NA	100	NA	NA	NA
8260B	4-Bromofluorobenzene (sur)	89	93	98	65-125	65-135	4%	2%	NA	NA	93	98	NA	NA	NA
8260B	1,2-Dichloroethane-d4 (sur)	97	93	98	62-139	52-149	4%	3%	NA	NA	96	99	NA	NA	NA
SEMI-VOLATILES BY GC/MS															
8270C	1-Methylnaphthalene	54	53	62	41-125	31-135	%	<30	%	<50	60	60	41-125	41-125	<75
8270C	2-Methylnaphthalene	73	70	78	41-125	31-135	4%	0%	<30	<50	81	81	41-125	41-125	<75
8270C	Acenaphthylene	80	80	84	47-125	37-135	0%	2%	<30	<50	88	88	47-125	47-125	<75
8270C	Acenaphthene	73	72	76	49-124	39-135	1%	5%	<30	<50	79	79	49-124	49-124	<75
8270C	Anthracene	84	85	86	45-165	35-175	1%	2%	<30	<50	87	87	45-165	45-165	<75
8270C	Benzo (a) anthracene	89	89	84	51-133	41-143	0%	5%	<30	<50	93	93	51-133	51-133	<75
8270C	Benzo (b) pyrene	86	84	60	41-125	31-135	2%	10%	<30	<50	99	99	41-125	41-125	<75
8270C	Benzo (k) fluoranthene	94	93	84	37-125	27-135	1%	8%	<30	<50	93	93	37-125	37-125	<75
8270C	Benzo (ghi) perylene	98	90	74	34-149	25-159	9%	10%	<30	<50	99	99	34-149	34-149	<75
8270C	Benzo (k) fluoranthene	85	85	78	37-123	27-133	0%	1%	<30	<50	94	94	37-123	37-123	<75
8270C	Chrysene	89	86	84	45-133	35-143	3%	2%	<30	<50	92	92	45-133	45-133	<75
8270C	Dibenz (a,h) anthracene	95	89	146	50-125	40-135	7%	3%	<30	<50	95	95	50-125	50-125	<75

Notes:
1. MS = Method number, observed result
2. MSD = Method number, true value

PROJECT QUALITY CONTROL RESULTS
AAL PROJECT #27166

	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
8270C	Fluoranthene	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

ACCURA ANALYTICAL LABORATORY, INC.

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 FL Certification # E87429 NC Certification # 483 SC Certification # 98015 USACE-MRD Approved

LABORATORY REPORT

Accura Sample ID #: AC09061

Accura Project #: 27166

Client: Tetra Tech Nus -Tallahassee

Date Sampled: 3/1/01

Client Contact: PAUL CALLIGAN

Date Received: 3/2/01

Client Project Number: N0486/CTO 121

Date Reported: 3/21/01

Client Project Name: NAS CECIL FIELD-TANK 16A

Sample Matrix: SOIL

Client Sample ID: CEF-B16-SS-001-01

ANALYSIS: % Solids

Date Ext/Dig/Prep: 3/8/01 Date Analyzed: 3/8/01 Method Ref: EPA 160.3
 Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
Solids	94		1.0

ANALYSIS: PAH's

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/19/01 Method Ref: 8270C
 Result Units: ug/Kg

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1-Methylnaphthalene	<RL		350
2-Methylnaphthalene	<RL		350
Acenaphthene	<RL		350
Acenaphthylene	<RL		350
Anthracene	<RL		350
Benzo(a)anthracene	<RL		350
Benzo(a)pyrene	<RL		350
Benzo(b)fluoranthene	<RL		350
Benzo(g,h,i)perylene	<RL		350
Benzo(k)fluoranthene	<RL		350
Chrysene	<RL		350
Dibenz(a,h)anthracene	<RL		350
Fluoranthene	<RL		350
Fluorene	<RL		350
Indeno(1,2,3-cd)pyrene	<RL		350
Naphthalene	<RL		350
Phenanthrene	<RL		350
Pyrene	<RL		350

ANALYSIS: Petroleum Range Organics (PRO)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/16/01 Method Ref: FL-PRO
 Result Units: mg/Kg

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
Petroleum Range Organics (PRO)	370		130

ANALYSIS: VOC's - Cecil Field (soils)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/7/01 Method Ref: 8260B
 Result Units: ug/kg

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1,1,1-Trichloroethane	<RL		6.7
1,1,2,2-Tetrachloroethane	<RL		6.7
1,1,2-Trichloroethane	<RL		6.7

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<RL = Less than Reporting Limit

Pg 1 of 10

Client Sample ID: CEF-B16-SS-001-01

AALSample ID #: AC09061 Accura Project #: 27166

1,1-Dichloroethane	<RL		
1,1-Dichloroethene	<RL		6.7
1,2-Dichloroethane	<RL		6.7
1,2-Dichloropropane	<RL		6.7
1,3-Dichloropropene	<RL		6.7
2-Chloroethylvinyl ether	<RL		6.7
Acrolein	<RL		67
Acrylonitrile	<RL		67
Benzene	<RL		67
Bromodichloromethane	<RL		6.7
Bromoform	<RL		6.7
Bromomethane	<RL		6.7
Carbon tetrachloride	<RL		6.7
Chlorobenzene	<RL		6.7
Chloroform	<RL		6.7
Chloromethane	<RL		6.7
Ethylbenzene	<RL		6.7
Methylene chloride	<RL		6.7
Methyl-tert-butyl ether (MTBE)	<RL		6.7
Tetrachloroethene	<RL		67
Toluene	2.4		6.7
trans-1,2-Dichloroethene	<RL	J	6.7
Trichloroethene	<RL		6.7
Vinyl chloride	<RL		6.7
Xylenes (Total)	<RL		6.7
			13

ANALYSIS: X B/N Sample Surrogates (Soils)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/19/01

Method Ref: 8270C
Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
2-Fluorobiphenyl (Range 50-103)	80		
Nitrobenzene-d5 (Range 43-104)	72		
p-Terphenyl-d14 (Range 44-125)	83		

ANALYSIS: X PRO Sample Surrogates (Soil)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/16/01

Method Ref: FL-PRO
Result Units: %

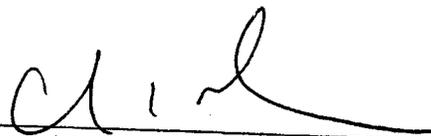
<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
C(39) (Range 60-118)	122	*	
o-Terphenyl (Range 62-109)	114	*	

ANALYSIS: X VOC Sample Surrogates-Soil

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/7/01

Method Ref: 5035/8260B
Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>
1,2-Dichloroethane-d4 (Range 81-151)	89		
4-Bromofluorobenzene (Range 80-131)	96		
Toluene-d8 (Range 82-119)	102		



Accura Analytical Laboratory, Inc.

ACCURA ANALYTICAL LABORATORY, INC.

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LABORATORY REPORT

Accura Sample ID #: AC09063

Accura Project #: 27166

Client: Tetra Tech Nus -Tallahassee

Date Sampled: 3/2/01

Client Contact: PAUL CALLIGAN

Date Received: 3/2/01

Client Project Number: N0486/CTO 121

Date Reported: 3/20/01

Client Project Name: NAS CECIL FIELD-TANK 16A

Sample Matrix: SOIL

Client Sample ID: METHOD BLANK-1

ANALYSIS: PAH's

Date Ext/Dig/Prep:	3/7/01	Date Analyzed:	3/19/01	Method Ref:	8270C
				Result Units:	ug/Kg
<u>Analyte Name</u>		<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	
1-Methylnaphthalene		<RL		33	
2-Methylnaphthalene		<RL		33	
Acenaphthene		<RL		33	
Acenaphthylene		<RL		33	
Anthracene		<RL		33	
Benzo(a)anthracene		<RL		33	
Benzo(a)pyrene		<RL		33	
Benzo(b)fluoranthene		<RL		33	
Benzo(g,h,i)perylene		<RL		33	
Benzo(k)fluoranthene		<RL		33	
Chrysene		<RL		33	
Dibenz(a,h)anthracene		<RL		33	
Fluoranthene		<RL		33	
Fluorene		<RL		33	
Indeno(1,2,3-cd)pyrene		<RL		33	
Naphthalene		<RL		33	
Phenanthrene		<RL		33	
Pyrene		<RL		33	

ANALYSIS: Petroleum Range Organics (PRO)

Date Ext/Dig/Prep:	3/7/01	Date Analyzed:	3/16/01	Method Ref:	FL-PRO
				Result Units:	mg/Kg
<u>Analyte Name</u>		<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	
Petroleum Range Organics (PRO)		<RL		30	

ANALYSIS: VOC's - Cecil Field (soils)

Date Ext/Dig/Prep:	3/7/01	Date Analyzed:	3/7/01	Method Ref:	8260B
				Result Units:	ug/kg
<u>Analyte Name</u>		<u>Analytical Results</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	
1,1,1-Trichloroethane		<RL		5	
1,1,2,2-Tetrachloroethane		<RL		5	
1,1,2-Trichloroethane		<RL		5	
1,1-Dichloroethane		<RL		5	
1,1-Dichloroethene		<RL		5	
1,2-Dichloroethane		<RL		5	
1,2-Dichloropropane		<RL		5	
1,3-Dichloropropene		<RL		5	

ACCURA ANALYTICAL LABORATORY, INC.

<RL = Less than Reporting Limit

Pg 6 of 10

Client Sample ID: METHOD BLANK-1

AALSAMPLE ID #: AC09063 Accura Project #: 27166

2-Chloroethylvinyl ether	<RL	50
Acrolein	<RL	50
Acrylonitrile	<RL	50
Benzene	<RL	5
Bromodichloromethane	<RL	5
Bromoform	<RL	5
Bromomethane	<RL	5
Carbon tetrachloride	<RL	5
Chlorobenzene	<RL	5
Chloroform	<RL	5
Chloromethane	<RL	5
Ethylbenzene	<RL	5
Methylene chloride	<RL	5
Methyl-tert-butyl ether (MTBE)	<RL	5
Tetrachloroethene	<RL	50
Toluene	<RL	5
trans-1,2-Dichloroethene	<RL	5
Trichloroethene	<RL	5
Vinyl chloride	<RL	5
Xylenes (Total)	<RL	5
		10

ANALYSIS: X Base Neutral OC Surrogates (S)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/19/01

Method Ref: 8270C
Result Units: %

Analyte Name	Analytical Results	Qualifier	Reporting Limit
2-Fluorobiphenyl (Range 55-96)	85		
Nitrobenzene-d5 (Range 40-99)	81		
p-Terphenyl-d14 (Range 57-110)	84		

ANALYSIS: X PRO OC Surrogates (Soil)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/16/01

Method Ref: FL-PRO
Result Units: %

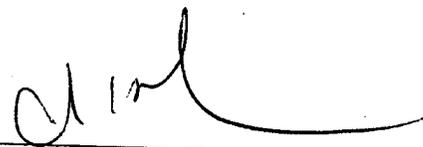
Analyte Name	Analytical Results	Qualifier	Reporting Limit
C(39) (Range 60-118)	29	*	
o-Terphenyl (Range 62-109)	106		

ANALYSIS: X VOC OC Surrogates-Soils

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/7/01

Method Ref: 5035/8260B
Result Units: %

Analyte Name	Analytical Results	Qualifier	Reporting Limit
1,2-Dichloroethane-d4 (Range 74-125)	106		
4-Bromofluorobenzene (Range 89-122)	96		
Toluene-d8 (Range 92-111)	101		



Accura Analytical Laboratory, Inc.

I Camden Robinson, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (770) 449-8800 if there are any questions or problems with the enclosed electronic deliverables.

Signature: Camden Robinson Title: Q.C. OFFICER Date: 4/3/01



STL Pensacola

LOG NO: C2-05636

Received: 31 MAY 02

Reported: 11 JUN 02

Mr. Paul Calligan
Tetra Tech NUS, Inc.
661 Anderson Drive
Pittsburgh, PA 15220

Client PO. No.: N3996-WR 13

Requisition: N3996JG0050235

Project: TANK SITE #G16A, NAS CECIL FIELD, FL

Sampled By: Client

Code: 084720611

Page 1

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED
05636-1	CEF-B16-SS-001-01A	05-30-02/13:30

PARAMETER		05636-1

TPH-WG-ALI (TPHCWG)		
>= C6-C8 Aliphatics, mg/kg dw		<50
>C8-C10 Aliphatics, mg/kg dw		<50
>C10-C12 Aliphatics, mg/kg dw		<50
>C12-C16 Aliphatics, mg/kg dw		<50
>C16-C21 Aliphatics, mg/kg dw		<50
>C21-C35 Aliphatics, mg/kg dw		<50
Dilution Factor		1.0
Prep Date		06.04.02
Analysis Date		06.04.02
Batch ID		GES050
Prep Method		TPHCWG
Analyst		KA
Quantitation Factor		1.0

STL Pensacola

LOG NO: C2-05636

Received: 31 MAY 02

Reported: 11 JUN 02

Mr. Paul Calligan
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661 Anderson Drive
Pittsburgh, PA 15220

Client PO. No.: N3996-WR 13

Requisition: N3996JG0050235

Project: TANK SITE #G16A, NAS CECIL FIELD, FL
Sampled By: Client

Code: 084720611

Page 2

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED
05636-1	CEF-B16-SS-001-01A	05-30-02/13:30
PARAMETER		05636-1
TPH-WG-ARO (TPHCWG)		
>C5-C7 Aromatics, mg/kg dw		<50
>C7-C8 Aromatics, mg/kg dw		<50
>C8-C10 Aromatics, mg/kg dw		<50
>C10-C12 Aromatics, mg/kg dw		<50
>C12-C16 Aromatics, mg/kg dw		<50
>C16-C21 Aromatics, mg/kg dw		<50
>C21-C35 Aromatics, mg/kg dw		<50
Dilution Factor		1.0
Prep Date		06.04.02
Analysis Date		06.04.02
Batch ID		GES050
Prep Method		TPHCWG
Analyst		KA
Quantitation Factor		1.0
Percent Solids		96

STL Pensacola

LOG NO: C2-05636
Received: 31 MAY 02
Reported: 11 JUN 02

Mr. Paul Calligan
Tetra Tech NUS, Inc.
661 Anderson Drive
Pittsburgh, PA 15220

Client PO. No.: N3996-WR 13

Requisition: N3996JG0050235

Project: TANK SITE #G16A, NAS CECIL FIELD, FL
Sampled By: Client
Code: 084720611
Page 3

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED				
05636-2	Method Blank					
05636-3	Spike Amount Added, LCS/LCSD					
05636-4	Lab Control Standard % Recovery					
05636-5	LCS Accuracy Control Limit (%R)					
05636-6	Spike Amount Added, MS/MSD					
PARAMETER		05636-2	05636-3	05636-4	05636-5	05636-6
Total TPH at >= C6-C35 (TPHCWG), 1	<5.0		850	90 %	60-140	850
Dilution Factor	1.0		---	---	---	---
Prep Date	06.04.02		---	---	---	---
Analysis Date	06.04.02		---	---	---	---
Batch ID	GES050		---	---	---	---
Prep Method	TPHCWG		GES050	GES050	GES050.	GES050
Analyst	KA		---	---	---	---
Quantitation Factor	1.0		---	---	---	---

STL Pensacola

LOG NO: C2-05636

Received: 31 MAY 02

Reported: 11 JUN 02

Mr. Paul Calligan
Tetra Tech NUS, Inc.
661 Anderson Drive
Pittsburgh, PA 15220

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Requisition: N3996JG0050235

Project: TANK SITE #G16A, NAS CECIL FIELD, FL

Sampled By: Client

Code: 084720611

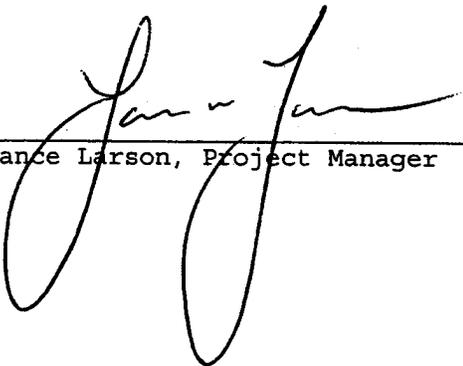
Page 4

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE/ TIME SAMPLED				
05636-7	Matrix Spike % Recovery					
05636-8	Matrix Spike Duplicate % Recovery					
05636-9	Precision (%RPD) MS/MSD					
05636-10	MS/MSD Accuracy Advisory Limit (%R)					
05636-11	MS/MSD Precision Advisory Limit (%RPD)					
PARAMETER		05636-7	05636-8	05636-9	05636-10	05636-11
Total TPH at >= C6-C35 (TPHCWG), mg/kg dw		105 %	85 %	21	60-140	30
Batch ID		GES050	GES050	GES050	GES050	GES050

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Data from any samples that do not meet client, federal, or state sample acceptance criteria (collection, preservation, or holding time) will be flagged, or noted on a corrective action form or case narrative, or addressed on the Project Sample Inspection Form (PSIF).



Lance Larson, Project Manager

Final Page Of Report

APPENDIX I

GROUNDWATER LABORATORY REPORTS

ACCURA ANALYTICAL LABORATORY, INC.
6017 Financial Drive, Norcross, Georgia, 30071, Phone (770) 449-8800

CASE NARRATIVE for Project Number: 27166
Client Project: NAS Cecil Field – Tank 16A / N0486 / CTO 121
CTO Manager: Paul Calligan

The following items were noted concerning this project:

1. The following samples were received by Accura Analytical Laboratory on 03/02/01 at 0915:

<u>Client I.D.</u>	<u>Laboratory I.D.</u>
CEF-B16-SS-001-01	AC09061
CEF-B16-GW-01S-01	AC09062
2. The sample cooler temperature was noted to be 3°C upon receipt.
3. The Encore samplers were transferred into the preserved sodium bisulfate vials on 3/2/01 at 14:05.
4. The soil sample results are reported on a dry weight basis.
5. The "J" values noted for the VOC, Metal-Lead, and FL-PRO results indicate estimated concentrations that were above the method detection limits, but below the reporting limits.
6. The "B" value noted for the FL-PRO analysis indicates that the compound was detected in the sample and in the Method Blank, and the result should be considered estimated due to Method Blank contamination.
7. The pH for sample CEF-B16-GW-01S-01 was 1.0 for the VOC analysis.
8. The following sample required dilution due to high analyte concentration or matrix interference, resulting in elevated detection limits:

FL-PRO (Soil)
CEF-B16-SS-001-01

PAH – SW-846-8270C
CEF-B16-SS-001-01

9. The following surrogates were outside the method specified limit:

FL-PRO

C39(Nonatriacontane) - CEF-B16-SS-001-01
CEF-B16-GW-OIS-01
Method Blank (Soil)
Method Blank (Water)
Laboratory Control Sample (Water)
Laboratory Control Sample (Soil)
Matrix Spike (Water)
Matrix Spike Duplicate (Water)
Matrix Spike Duplicate (Soil)

o-Terphenyl - CEF-B16-SS-001-01
Matrix Spike (Soil)

The recoveries were within historical limits established in the laboratory; therefore the data was accepted.

10. Project Specified QC consists of LCS/LCSD for the Water FL-PRO and Water SVOC analyses due to limited sample volume. Note that LCS/LCSD recoveries are reported as MS/MSD recoveries on the QC spreadsheet.

11. Batch QC is reported for the Soil VOC analysis.

12. The laboratory control sample recoveries were outside the project specified limit for the following analyte:

FL-PRO (Water)
FL-PRO (Soil)

The recoveries were within historical limits established in the laboratory; therefore the data was accepted.

13. The laboratory control sample recovery was outside the project specified limit for the following analyte:

Water VOC - SW-846-8260B
Acrolein

Acrolein was not detected in the water sample; therefore the data results were accepted.

14. The following spike recoveries were outside the project specified limits due to matrix interference:

FL-PRO

Matrix Spike - FL-PRO (Soil)

Matrix Spike - FL-PRO (Water)

Soil PAH - SW-846-8270C

Matrix Spike - Dibenzo (a,h) anthracene

Matrix Spike Duplicate - Dibenzo (a,h) anthracene

Water VOC - SW-46-8260B

Matrix Spike - Methylene Chloride

Soil VOC - SW-46-8260B

Matrix Spike - Xylene

15. The following spike recoveries were outside the project specified limits due to the fact that in the presence of Hydrochloric Acid, (sample preservative), 2-Chloroethylvinylether breaks down:

Water VOC - SW-846-8260B

Matrix Spike / Matrix Spike Duplicate - 2-Chloroethylvinylether

16. The relative percent difference between the matrix spike and matrix spike duplicate was outside the project specified limit for the following analytes:

Water VOC - SW-846-8260B

2-Chloroethylvinylether

Soil VOC - SW-846-8260B

Xylene



Quality Assurance

PROJECT QUALITY CONTROL RESULTS
AAL PROJECT #27166

Method No.	Analyte / Component	Project Control Rec.		Accuracy Limits		Project Control		Precision Limits		Project Control		Accuracy Limits		Precision Limits	
		MS	MSD	MS	MSD	MS	MSD	MS	MSD	MS	MSD	MS	MSD	MS	MSD
VOLATILES BY GC/MS															
B260B	1,1,1-Trichloroethane	96	104	101	60-140	20-150	0%	3%	<30	<30	100	96	65-135	65-135	<75
B260B	1,1,2,2-Tetrachloroethane	100	97	93	60-140	20-150	3%	5%	<30	<30	101	98	64-135	64-135	<75
B260B	1,1,2-Trichloroethane	101	97	102	60-140	20-150	4%	5%	<30	<30	92	101	65-135	65-135	<75
B260B	1,1-Dichloroethane	84	95	104	60-140	20-150	1%	4%	<30	<30	97	101	62-135	62-135	<75
B260B	1,1-Dichloroethane	96	95	106	60-140	20-150	1%	5%	<30	<30	93	98	65-135	65-135	<75
B260B	1,2-Dichloroethane	102	93	102	60-140	20-150	9%	1%	<30	<30	97	99	34-137	34-137	<75
B260B	1,2-Dichloropropane	96	93	106	60-140	20-150	3%	3%	<30	<30	92	102	60-135	60-135	<75
B260B	1,1-Dichloropropane	99	91	106	60-140	20-150	6%	4%	<30	<30	91	99	65-135	65-135	<75
B260B	2-Chloroethyl vinyl ether	111	107	107	60-140	20-150	3%	3%	<30	<30	77	100	65-135	65-135	<75
B260B	Acetoin	121	107	112	60-140	20-150	17%	4%	<30	<30	62	107	65-135	65-135	<75
B260B	Acrylonitrile	100	93	98	60-140	20-150	7%	4%	<30	<30	80	103	63-135	63-135	<75
B260B	Benzene	91	96	105	60-140	20-150	3%	2%	<30	<30	95	99	65-135	65-135	<75
B260B	Bromodichloromethane	93	92	103	60-140	20-150	1%	1%	<30	<30	85	96	65-135	65-135	<75
B260B	Bromoform	91	90	97	60-140	20-150	1%	4%	<30	<30	85	96	65-135	65-135	<75
B260B	Bromomethane	91	91	106	60-140	20-150	2%	5%	<30	<30	101	92	62-135	62-135	<75
B260B	Carbon Tetrachloride	93	95	103	60-140	20-150	3%	2%	<30	<30	100	95	32-135	32-135	<75
B260B	Chlorobenzene	95	96	104	60-140	20-150	2%	3%	<30	<30	94	101	65-135	65-135	<75
B260B	Chloroform	96	93	87	60-140	20-150	1%	1%	<30	<30	97	98	64-135	64-135	<75
B260B	Chloromethane	97	100	112	60-140	20-150	3%	6%	<30	<30	103	103	65-135	65-135	<75
B260B	Ethylbenzene	143	132	99	60-140	20-150	8%	3%	<30	<30	106	84	65-135	65-135	<75
B260B	Methylene Chloride	99	90	104	60-140	20-150	10%	3%	<30	<30	108	84	65-135	65-135	<75
B260B	Methyl-tert-butyl ether	98	100	114	60-140	20-150	3%	4%	<30	<30	100	101	61-135	61-135	<75
B260B	Tetrachloroethylene	95	98	110	60-140	20-150	3%	6%	<30	<30	98	99	64-135	64-135	<75
B260B	Toluene	94	96	106	60-140	20-150	2%	3%	<30	<30	95	99	65-135	65-135	<75
B260B	Trans-1,2-Dichloroethane	95	95	106	60-140	20-150	0%	3%	<30	<30	96	99	61-135	61-135	<75
B260B	Trichloroethylene	92	90	93	60-140	20-150	2%	8%	<30	<30	90	89	36-144	36-144	<75
B260B	Vinyl Chloride	97	100	111	60-140	20-150	3%	10%	<30	<30	100	105	65-135	65-135	<75
B260B	total-Xylene	94	100	100	75-125	65-135	6%	0%	NA	NA	100	100	NA	NA	NA
B260B	Toluene-d8 (sur)	89	93	98	75-125	65-135	4%	2%	NA	NA	93	98	NA	NA	NA
B260B	1,2-Dichloroethane-d4 (sur)	97	93	98	63-139	52-149	4%	3%	NA	NA	96	99	NA	NA	NA
SEMI-VOLATILES BY GC/MS															
B270C	1-Methylpiperazine	54	53	61	41-125	31-135	2%	7%	<30	<30	60	60	41-125	41-125	<75
B270C	2-Methylpiperazine	73	70	78	41-125	31-135	4%	0%	<30	<30	81	81	41-125	41-125	<75
B270C	Acenaphthylene	80	80	84	47-125	37-135	0%	2%	<30	<30	88	88	47-125	47-125	<75
B270C	Acenaphthene	71	72	76	49-124	39-135	1%	5%	<30	<30	79	79	49-124	49-124	<75
B270C	Anthracene	84	85	86	45-165	35-175	1%	2%	<30	<30	87	87	45-165	45-165	<75
B270C	Benz(a) anthracene	89	89	84	51-133	41-143	0%	5%	<30	<30	93	93	51-133	51-133	<75
B270C	Benz(b) fluoranthene	86	84	60	41-125	31-135	2%	10%	<30	<30	99	99	41-125	41-125	<75
B270C	Benz(a,h) perylene	98	90	71	37-125	27-135	1%	8%	<30	<30	93	93	37-125	37-125	<75
B270C	Benz(a,i) fluoranthene	85	85	78	37-123	27-133	0%	1%	<30	<30	94	94	37-123	37-123	<75
B270C	Chrysene	89	86	84	55-133	45-143	3%	2%	<30	<30	92	92	55-133	55-133	<75
B270C	Dibenz(a,h) anthracene	95	89	146	50-125	40-135	7%	3%	<30	<30	95	95	50-125	50-125	<75

MS/MSD is Method, MSD is Method, MS/MSD is Method
MS/MSD is Method, MSD is Method, MS/MSD is Method

ACCURA ANALYTICAL LABORATORY, INC.

6017 Financial Drive, Norcross, Georgia 30017, Phone (770)449-8800, FAX (770)449-5477
 FL Certification # E87429 NC Certification # 483 SC Certification # 98015 USACE-MRD Approved

LABORATORY REPORT

Accura Sample ID #: AC09062

Accura Project #: 27166

Client: Tetra Tech Nus -Tallahassee

Date Sampled: 3/1/01

Client Contact: PAUL CALLIGAN

Date Received: 3/2/01

Client Project Number: N0486/CTO 121

Date Reported: 3/20/01

Client Project Name: NAS CECIL FIELD-TANK 16A

Sample Matrix: WATER

Client Sample ID: CEF-B16-GW-OIS-01

ANALYSIS: EDB

Date Ext/Dig/Prep: 3/8/01

Date Analyzed: 3/8/01

Method Ref: 504.1

Result Units: ug/L

Analyte Name

Analytical Results

Qualifier

Reporting Limit

1,2-Dibromoethane (EDB)

<RL

0.050

ANALYSIS: Metals - Lead

Date Ext/Dig/Prep: 3/13/01

Date Analyzed: 3/14/01

Method Ref: 3010A/6010B

Result Units: mg/L

Analyte Name

Analytical Results

Qualifier

Reporting Limit

Lead

0.0052

J

0.010

ANALYSIS: PAH's - Low Level

Date Ext/Dig/Prep: 3/7/01

Date Analyzed: 3/17/01

Method Ref: 8270C

Result Units: ug/L

Analyte Name

Analytical Results

Qualifier

Reporting Limit

1-Methylnaphthalene

<RL

1.0

2-Methylnaphthalene

<RL

1.0

Acenaphthene

<RL

1.0

Acenaphthylene

<RL

1.0

Anthracene

<RL

1.0

Benzo(a)anthracene

<RL

1.0

Benzo(a)pyrene

<RL

1.0

Benzo(b)fluoranthene

<RL

1.0

Benzo(g,h,i)perylene

<RL

1.0

Benzo(k)fluoranthene

<RL

1.0

Chrysene

<RL

1.0

Dibenz(a,h)anthracene

<RL

1.0

Fluoranthene

<RL

1.0

Fluorene

<RL

1.0

Indeno(1,2,3-cd)pyrene

<RL

1.0

Naphthalene

<RL

1.0

Phenanthrene

<RL

1.0

Pyrene

<RL

1.0

1.0

ANALYSIS: Petroleum Range Organics (PRO)

Date Ext/Dig/Prep: 3/7/01

Date Analyzed: 3/16/01

Method Ref: FL-PRO

Result Units: mg/L

Analyte Name

Analytical Results

Qualifier

Reporting Limit

Petroleum Range Organics (PRO)

1.7

B

1.0

ANALYSIS: VOC's - Cecil Field(25 ml purge)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/7/01

Method Ref: 8260B
Result Units: ug/L

Analyte Name	Analytical Results	Qualifier	Reporting Limit
1,1,1-Trichloroethane	<RL		1.0
1,1,2,2-Tetrachloroethane	<RL		1.0
1,1,2-Trichloroethane	<RL		1.0
1,1-Dichloroethane	<RL		1.0
1,1-Dichloroethene	<RL		1.0
1,2-Dichloroethane	<RL		1.0
1,2-Dichloropropane	<RL		1.0
1,3-Dichloropropene	<RL		1.0
2-Chloroethylvinyl ether	<RL		1.0
Acrolein	<RL		10
Acrylonitrile	<RL		10
Benzene	<RL		10
Bromodichloromethane	<RL		1.0
Bromoform	<RL		1.0
Bromomethane	<RL		1.0
Carbon tetrachloride	<RL		1.0
Chlorobenzene	<RL		1.0
Chloroform	<RL		1.0
Chloromethane	<RL		1.0
Ethylbenzene	<RL		1.0
Methylene chloride	<RL		1.0
Methyl-tert-butyl ether (MTBE)	<RL		5.0
Tetrachloroethene	<RL		10
Toluene	<RL		1.0
trans-1,2-Dichloroethene	<RL		1.0
Trichloroethene	<RL		1.0
Vinyl chloride	<RL		1.0
Xylenes (Total)	<RL		1.0
			2.0

ANALYSIS: X B/N Sample Surrogates (Waters)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/17/01

Method Ref: 8270C
Result Units: %

Analyte Name	Analytical Results	Qualifier	Reporting Limit
2-Fluorobiphenyl (Range 43-111)	84		
Nitrobenzene-d5 (Range 37-104)	87		
p-Terphenyl-d14 (Range 15-132)	68		

ANALYSIS: X PRO Sample Surrogates (Water)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/16/01

Method Ref: FL-PRO
Result Units: %

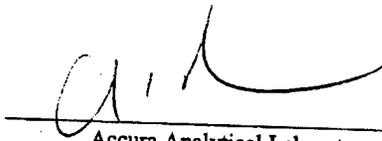
Analyte Name	Analytical Results	Qualifier	Reporting Limit
C(39) (Range 42-193)	16	*	
o-Terphenyl (Range 82-142)	93		

ANALYSIS: X VOC Sample Surrogates-Waters

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/7/01

Method Ref: 5030B/8260B
Result Units: %

Analyte Name	Analytical Results	Qualifier	Reporting Limit
1,2-Dichloroethane-d4 (78-128)	106		
4-Bromofluorobenzene (86-112)	103		
Toluene-d8 (84-108)	104		



Accura Analytical Laboratory, Inc.

ACCURA ANALYTICAL LABORATORY, INC.

6017 Financial Drive, Norcross, Georgia 30017, Phone (770)449-8800, FAX (770)449-5477
 FL Certification # E87429 NC Certification # 483 SC Certification # 98015 USACE-MRD Approved

LABORATORY REPORT

Accura Sample ID #: AC09064

Accura Project #: 27166

Client: Tetra Tech Nus -Tallahassee

Date Sampled: 3/2/01

Client Contact: PAUL CALLIGAN

Date Received: 3/2/01

Client Project Number: N0486/CTO 121

Date Reported: 3/20/01

Client Project Name: NAS CECIL FIELD-TANK 16A

Sample Matrix: WATER

Client Sample ID: METHOD BLANK-2

ANALYSIS: EDB

Date Ext/Dig/Prep: 3/8/01

Date Analyzed: 3/8/01

Method Ref: 504.1

Result Units: ug/L

Analyte Name

Analytical Results

Qualifier

Reporting Limit

1,2-Dibromoethane (EDB)

<RL

0.05

ANALYSIS: Metals - Lead

Date Ext/Dig/Prep: 3/13/01

Date Analyzed: 3/14/01

Method Ref: 3010A/6010B

Result Units: mg/L

Analyte Name

Analytical Results

Qualifier

Reporting Limit

Lead

<RL

0.010

ANALYSIS: PAH's - Low Level

Date Ext/Dig/Prep: 3/7/01

Date Analyzed: 3/17/01

Method Ref: 8270C

Result Units: ug/L

Analyte Name

Analytical Results

Qualifier

Reporting Limit

1-Methylnaphthalene

<RL

1.0

2-Methylnaphthalene

<RL

1.0

Acenaphthene

<RL

1.0

Acenaphthylene

<RL

1.0

Anthracene

<RL

1.0

Benzo(a)anthracene

<RL

1.0

Benzo(a)pyrene

<RL

1.0

Benzo(b)fluoranthene

<RL

1.0

Benzo(g,h,i)perylene

<RL

1.0

Benzo(k)fluoranthene

<RL

1.0

Chrysene

<RL

1.0

Dibenz(a,h)anthracene

<RL

1.0

Fluoranthene

<RL

1.0

Fluorene

<RL

1.0

Indeno(1,2,3-cd)pyrene

<RL

1.0

Naphthalene

<RL

1.0

Phenanthrene

<RL

1.0

Pyrene

<RL

1.0

ANALYSIS: Petroleum Range Organics (PRO)

Date Ext/Dig/Prep: 3/7/01

Date Analyzed: 3/16/01

Method Ref: FL-PRO

Result Units: mg/L

Analyte Name

Analytical Results

Qualifier

Reporting Limit

Petroleum Range Organics (PRO)

0.37

J

1.0

ANALYSIS: VOC's - Cecil Field(25 ml purge)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/7/01

Method Ref: 8260B
Result Units: ug/L

Analyte Name	Analytical Results	Qualifier	Reporting Limit
1,1,1-Trichloroethane	<RL		1.0
1,1,2,2-Tetrachloroethane	<RL		1.0
1,1,2-Trichloroethane	<RL		1.0
1,1-Dichloroethane	<RL		1.0
1,1-Dichloroethene	<RL		1.0
1,2-Dichloroethane	<RL		1.0
1,2-Dichloropropane	<RL		1.0
1,3-Dichloropropene	<RL		1.0
2-Chloroethylvinyl ether	<RL		10
Acrolein	<RL		10
Acrylonitrile	<RL		10
Benzene	<RL		1.0
Bromodichloromethane	<RL		1.0
Bromoform	<RL		1.0
Bromomethane	<RL		1.0
Carbon tetrachloride	<RL		1.0
Chlorobenzene	<RL		1.0
Chloroform	<RL		1.0
Chloromethane	<RL		1.0
Ethylbenzene	<RL		1.0
Methylene chloride	<RL		5.0
Methyl-tert-butyl ether (MTBE)	<RL		10
Tetrachloroethene	<RL		1.0
Toluene	<RL		1.0
trans-1,2-Dichloroethene	<RL		1.0
Trichloroethene	<RL		1.0
Vinyl chloride	<RL		1.0
Xylenes (Total)	<RL		2.0

ANALYSIS: X Base Neutral OC Surrogates (W)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/17/01

Method Ref: 8270C
Result Units: %

Analyte Name	Analytical Results	Qualifier	Reporting Limit
2-Fluorobiphenyl (Range 57-102)	80		
Nitrobenzene-d5 (Range 50-103)	87		
p-Terphenyl-d14 (Range 64-113)	83		

ANALYSIS: X PRO OC Surrogates (Water)

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/16/01

Method Ref: FL-PRO
Result Units: %

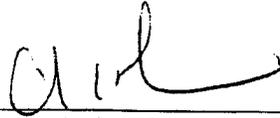
Analyte Name	Analytical Results	Qualifier	Reporting Limit
C(39) (Range 42-193)	32	*	
o-Terphenyl (Range 82-142)	95		

ANALYSIS: X VOC OC Surrogates-Waters

Date Ext/Dig/Prep: 3/7/01 Date Analyzed: 3/7/01

Method Ref: 5030B/8260B
Result Units: %

Analyte Name	Analytical Results	Qualifier	Reporting Limit
1,2-Dichloroethane-d4 (78-114)	92		
4-Bromofluorobenzene (85-111)	96		
Toluene-d8 (88-106)	104		



Accura Analytical Laboratory, Inc.

I Camden Robinson, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (70) 449-8800 if there are any questions or problems with the enclosed electronic deliverables.

Signature: Camden Robinson Title: Q.C. OFFICER Date: 4/3/01

Report of Analysis

Client Sample ID: CEF-G16-GW-025-01	Date Sampled: 05/23/02
Lab Sample ID: F13318-1	Date Received: 05/24/02
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Building 16, Tank G16A Cecil Field	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010027.D	1	06/03/02	JG	n/a	n/a	VB437
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
74-83-9	Methyl bromide	ND	1.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CEF-G16-GW-025-01		Date Sampled: 05/23/02
Lab Sample ID: F13318-1		Date Received: 05/24/02
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: Building 16, Tank G16A Cecil Field		

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

0013

Report of Analysis

Client Sample ID: CEF-G16-GW-025-01 Lab Sample ID: F13318-1 Matrix: AQ - Ground Water Method: EPA 504.1 EPA 504 Project: Building 16, Tank G16A Cecil Field	Date Sampled: 05/23/02 Date Received: 05/24/02 Percent Solids: n/a
--	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ST15053.D	1	05/31/02	NJ	05/30/02	OP5243	GST557
Run #2							

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CEF-G16-GW-025-01	Date Sampled: 05/23/02
Lab Sample ID: F13318-1	Date Received: 05/24/02
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 8310 SW846 3510C	
Project: Building 16, Tank G16A Cecil Field	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE008343.D	1	05/30/02	MRE	05/24/02	OP5218	GEE390
Run #2							

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

Polynuclear Aromatic Hydrocarbons

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

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	86%		33-141%
92-94-4	p-Terphenyl	85%		31-122%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

0015

Report of Analysis

Client Sample ID: CEF-G16-GW-025-01		Date Sampled: 05/23/02
Lab Sample ID: F13318-1		Date Received: 05/24/02
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: FLORIDA-PRO SW846 3510C		
Project: Building 16, Tank G16A Cecil Field		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP21096.D	1	05/29/02	SKW	05/28/02	OP5230	GOP781
Run #2							

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

CAS No.	Compound	Result	RL	Units Q
	TPH (C8-C40)	ND	0.28	mg/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	100%		55-130%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

0016

Report of Analysis

Client Sample ID: CEF-G16-GW-025-01	Date Sampled: 05/23/02
Lab Sample ID: F13318-1	Date Received: 05/24/02
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Building 16, Tank G16A Cecil Field	

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	2.3 B	5.0	1.2	ug/l	1	05/28/02	05/29/02 DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
 IDL = Instrument Detection Limit

U = Indicates a result < IDL
 B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID: CEF-G16-GW-015-02	Date Sampled: 05/23/02
Lab Sample ID: F13318-2	Date Received: 05/24/02
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Building 16, Tank G16A Cecil Field	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010028.D	1	06/03/02	JG	n/a	n/a	VB437
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
74-83-9	Methyl bromide	ND	1.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

0018

Report of Analysis

Client Sample ID: CEF-G16-GW-015-02	Date Sampled: 05/23/02
Lab Sample ID: F13318-2	Date Received: 05/24/02
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Building 16, Tank G16A Cecil Field	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	103%		80-120%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CEF-G16-GW-015-02 Lab Sample ID: F13318-2 Matrix: AQ - Ground Water Method: EPA 504.1 EPA 504 Project: Building 16, Tank G16A Cecil Field	Date Sampled: 05/23/02 Date Received: 05/24/02 Percent Solids: n/a
--	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ST15056.D	1	05/31/02	NJ	05/30/02	OP5243	GST557
Run #2							

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CEF-G16-GW-015-02	
Lab Sample ID: F13318-2	Date Sampled: 05/23/02
Matrix: AQ - Ground Water	Date Received: 05/24/02
Method: EPA 8310 SW846 3510C	Percent Solids: n/a
Project: Building 16, Tank G16A Cecil Field	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE008346.D	1	05/30/02	MRE	05/24/02	OP5218	GEE390
Run #2							

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

Polynuclear Aromatic Hydrocarbons

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

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	80%		33-141%
92-94-4	p-Terphenyl	82%		31-122%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

0021

Report of Analysis

Client Sample ID: CEF-G16-GW-015-02	Date Sampled: 05/23/02
Lab Sample ID: F13318-2	Date Received: 05/24/02
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO SW846 3510C	
Project: Building 16, Tank G16A Cecil Field	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	OP21097.D	1	05/29/02	SKW	05/28/02	OP5230	GOP781

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

CAS No.	Compound	Result	RL	Units Q
	TPH (C8-C40)	ND	0.25	mg/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	95%		55-130%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CEF-G16-GW-015-02	Date Sampled: 05/23/02
Lab Sample ID: F13318-2	Date Received: 05/24/02
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Building 16, Tank G16A Cecil Field	

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	1.2 U	5.0	1.2	ug/l	1	05/28/02	05/29/02 DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
 IDL = Instrument Detection Limit

U = Indicates a result < IDL
 B = Indicates a result >= IDL but < RL

0023

Report of Analysis

Client Sample ID: CEF-G16-GW-035-01	
Lab Sample ID: F13318-3	Date Sampled: 05/23/02
Matrix: AQ - Ground Water	Date Received: 05/24/02
Method: SW846 8260B	Percent Solids: n/a
Project: Building 16, Tank G16A Cecil Field	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B0010029.D	1	06/03/02	JG	n/a	n/a	VB437
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
110-75-8	2-Chloroethyl vinyl ether	ND	5.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
74-83-9	Methyl bromide	ND	1.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

0024

Report of Analysis

Client Sample ID: CEF-G16-GW-035-01	Date Sampled: 05/23/02
Lab Sample ID: F13318-3	Date Received: 05/24/02
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: Building 16, Tank G16A Cecil Field	

VOA Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

05/23/02

Report of Analysis

Client Sample ID: CEF-G16-GW-035-01 Lab Sample ID: F13318-3 Matrix: AQ - Ground Water Method: EPA 504.1 EPA 504 Project: Building 16, Tank G16A Cecil Field	Date Sampled: 05/23/02 Date Received: 05/24/02 Percent Solids: n/a
--	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ST15057.D	1	05/31/02	NJ	05/30/02	OP5243	GST557
Run #2							

CAS No.	Compound	Result	RL	Units Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-G16-GW-035-01	Date Sampled:	05/23/02
Lab Sample ID:	F13318-3	Date Received:	05/24/02
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 8310 SW846 3510C		
Project:	Building 16, Tank G16A Cecil Field		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE008347.D	1	05/30/02	MRE	05/24/02	OP5218	GEE390
Run #2							

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

Polynuclear Aromatic Hydrocarbons

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

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	83%		33-141%
92-94-4	p-Terphenyl	79%		31-122%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

0027

Report of Analysis

Client Sample ID: CEF-G16-GW-035-01	Date Sampled: 05/23/02
Lab Sample ID: F13318-3	Date Received: 05/24/02
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO SW846 3510C	
Project: Building 16, Tank G16A Cecil Field	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP21098.D	1	05/29/02	SKW	05/28/02	OP5230	GOP781
Run #2							

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

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	ND	0.28	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	96%		55-130%	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CEF-G16-GW-035-01	Date Sampled: 05/23/02
Lab Sample ID: F13318-3	Date Received: 05/24/02
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Building 16, Tank G16A Cecil Field	

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	1.3 B	5.0	1.2	ug/l	1	05/28/02	05/29/02 DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result >= IDL but < RL





TETRA TECH NUS, INC. **CECIL FIELD**

CHAIN OF CUSTODY

NUMBER **G16A-052302**

PAGE **1** OF **1**

UN: 5776. 4.6.61

PROJECT NO: **N2096** SITE NAME: **PINK G16A**
 LABORATORY NAME AND CONTACT: **4674256700 Sue Bell**
 SAMPLERS (SIGNATURE): *[Signature]* ADDRESS: **4405 Yorie Land Rd C-15**
 PROJECT MANAGER AND PHONE NUMBER: **PAUL MULLER 850-385813806 0200** ACCOUNT: **None**
 FIELD OPERATIONS LEADER AND PHONE NUMBER: **MEAN DAVE 904 281 0400** CITY, STATE: **ORLANDO, FL 32811**
 CARRIER/BILL NUMBER: **Fedex**

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

DATE	TIME	SAMPLE ID	MATRIX	GRAB (G)	COMP (G)	NO. OF CONTAINERS	TYPE OF ANALYSIS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	COMMENTS
5/23/2002	1335	CEF-G16-GW-025-01	GW	4	2	2	FORST SKI 8308	H2O	None	Cond to 4°C
5/23/2002	1035	CEF-G16-GW-015-02	GW	2	1	3	FORST SKI 8308	H2O	None	N3996 WRO3
5/23/2002	1500	CEF-G16-GW-025-01	GW	2	1	3	FORST SKI 8308	H2O	None	* BTEX, MTBE PPVOHs and 1,2-dichloro-ethane

1. RELINQUISHED BY: *[Signature]* DATE: **5/23/02** TIME: **1700**

2. RELINQUISHED BY: DATE: TIME:

3. RELINQUISHED BY: DATE: TIME:

COMMENTS

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