

N60200.AR.002558  
NAS CECIL FIELD, FL  
5090.3a

SAMPLING AND ANALYSIS REPORT FOR BUILDING 16B WATER TOWER BASE  
REALIGNMENT AND CLOSURE NAS CECIL FIELD FL  
7/27/2000  
TETRA TECH NUS INC

**Sampling and Analysis Report**  
for  
**Building 16B Water Tower**  
**Base Realignment and Closure**

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



**Southern Division**  
**Naval Facilities Engineering Command**

**Contract Number N62467-94-D-0888**

**Contract Task Order 0078**

July 2000

**SAMPLING AND ANALYSIS REPORT  
FOR  
BUILDING 16B WATER TOWER  
BASE REALIGNMENT AND CLOSURE**

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

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

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

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

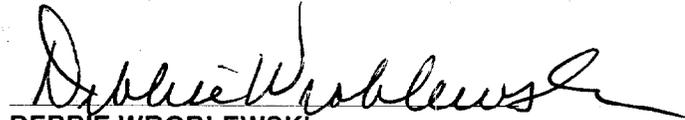
**CONTRACT NUMBER N62467-94-D-0888  
CONTRACT TASK ORDER 0078**

**JULY 2000**

**PREPARED UNDER THE SUPERVISION OF:**

  
**MARK SPERANZA, P.E.  
TASK ORDER MANAGER  
TETRA TECH NUS, INC.  
PITTSBURGH, PENNSYLVANIA**

**APPROVED FOR SUBMITTAL BY:**

  
**DEBBIE WROBLEWSKI  
PROGRAM MANAGER  
TETRA TECH NUS, INC.  
PITTSBURGH, PENNSYLVANIA**



The professional opinions rendered in this decision document identified as Sampling and Analysis Report for Building 16B Water Tower, Naval Air Station Cecil Field, Jacksonville, Florida were developed in accordance with commonly accepted procedures consistent with applicable standards of practice. Decision documents are based on information obtained from others and under the supervision of the signing engineer. If conditions are determined to exist differently than those described in this document, then the undersigned professional engineer should be notified to evaluate the effects of any additional information on this project described in this report.

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

Date: 7/27/00

*Mark Speranza*

00194

**Draft**  
**Sampling and Analysis Report**  
for  
**Building 16B Water Tower**  
**Base Realignment and Closure**

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



**Southern Division**  
**Naval Facilities Engineering Command**  
Contract Number N62467-94-D-0888  
Contract Task Order 0078

June 2000

**DRAFT  
SAMPLING AND ANALYSIS REPORT  
FOR  
BUILDING 16B WATER TOWER  
BASE REALIGNMENT AND CLOSURE**

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

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

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

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

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

**JUNE 2000**

**PREPARED UNDER THE SUPERVISION OF:**

**APPROVED FOR SUBMITTAL BY:**

---

**MARK SPERANZA, P.E.  
TASK ORDER MANAGER  
TETRA TECH NUS, INC.  
PITTSBURGH, PENNSYLVANIA**

---

**DEBBIE WROBLEWSKI  
PROGRAM MANAGER  
TETRA TECH NUS, INC.  
PITTSBURGH, PENNSYLVANIA**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY

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

DATE: June 6, 2000

NAME AND TITLE OF CERTIFYING OFFICIAL:

Mark Speranza, P.E.  
Task Order Manager



The professional opinions rendered in this decision document identified as Sampling and Analysis Report for Building 16B Water Tower, Naval Air Station Cecil Field, Jacksonville, Florida were developed in accordance with commonly accepted procedures consistent with applicable standards of practice. Decision documents are based on information obtained from others and under the supervision of the signing engineer. If conditions are determined to exist differently than those described in this document, then the undersigned professional engineer should be notified to evaluate the effects of any additional information on this project described in this report.

\_\_\_\_\_  
Mark Speranza, P.E.  
Professional Engineer No. PE0050304

Date: \_\_\_\_\_

## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NO.</u>
CERTIFICATION OF TECHNICAL DATA CONFORMITY .....	ii
PROFESSIONAL ENGINEER AUTHORIZATION .....	iii
LIST OF ACRONYMS AND ABBREVIATIONS .....	v
1.0 INTRODUCTION .....	1-1
2.0 FIELD INVESTIGATIONS .....	2-1
3.0 DATA EVALUATION AND REMOVAL ACTION .....	3-1
3.1 DATA EVALUATION .....	3-1
3.2 REMOVAL ACTION .....	3-1
4.0 CONCLUSIONS AND RECOMMENDATION .....	4-1
REFERENCES .....	R-1

### APPENDIX

#### A LABORATORY ANALYTICAL DATA

### TABLE

<u>NUMBER</u>	<u>PAGE NO.</u>
3-1 Analytical Results Summary for Surface Soil Field Investigations .....	3-4

### FIGURES

<u>NUMBER</u>	<u>PAGE NO.</u>
1-1 General Location Map .....	1-2
1-2 Site Location .....	1-3
2-1 Sample Location Map .....	2-3
3-1 Sampling Locations and Action Levels Exceedence .....	3-3
3-2 Soil Excavation Map .....	3-5

## LIST OF ACRONYMS AND ABBREVIATIONS

ABB-ES	ABB Environmental Services, Inc.
BCT	BRAC Cleanup Team
bgs	below ground surface
BRAC	Base Realignment and Closure
CFR	Code of Federal Regulations
CTO	Contract Task Order
EBS	Environmental Baseline Survey
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
ft <sup>2</sup>	square foot
HLA	Harding Lawson Associates
IBDS	NAS Cecil Field Site-Specific Inorganic Background Data Set
mg/kg	milligram per kilogram
mg/L	milligram per liter
NAS	Naval Air Station
PCB	polychlorinated biphenyl
RAC	Remedial Action Contractor
RCRA	Resource Conservation and Recovery Act
SAO	Sampling and Analysis Outline
SAR	Sampling and Analysis Report
SCTL	Soil Cleanup Target Level
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
TCLP	Toxicity Characteristics Leaching Procedure
TtNUS	Tetra Tech NUS, Inc.
U.S. EPA	U.S. Environmental Protection Agency
yd <sup>3</sup>	cubic yards

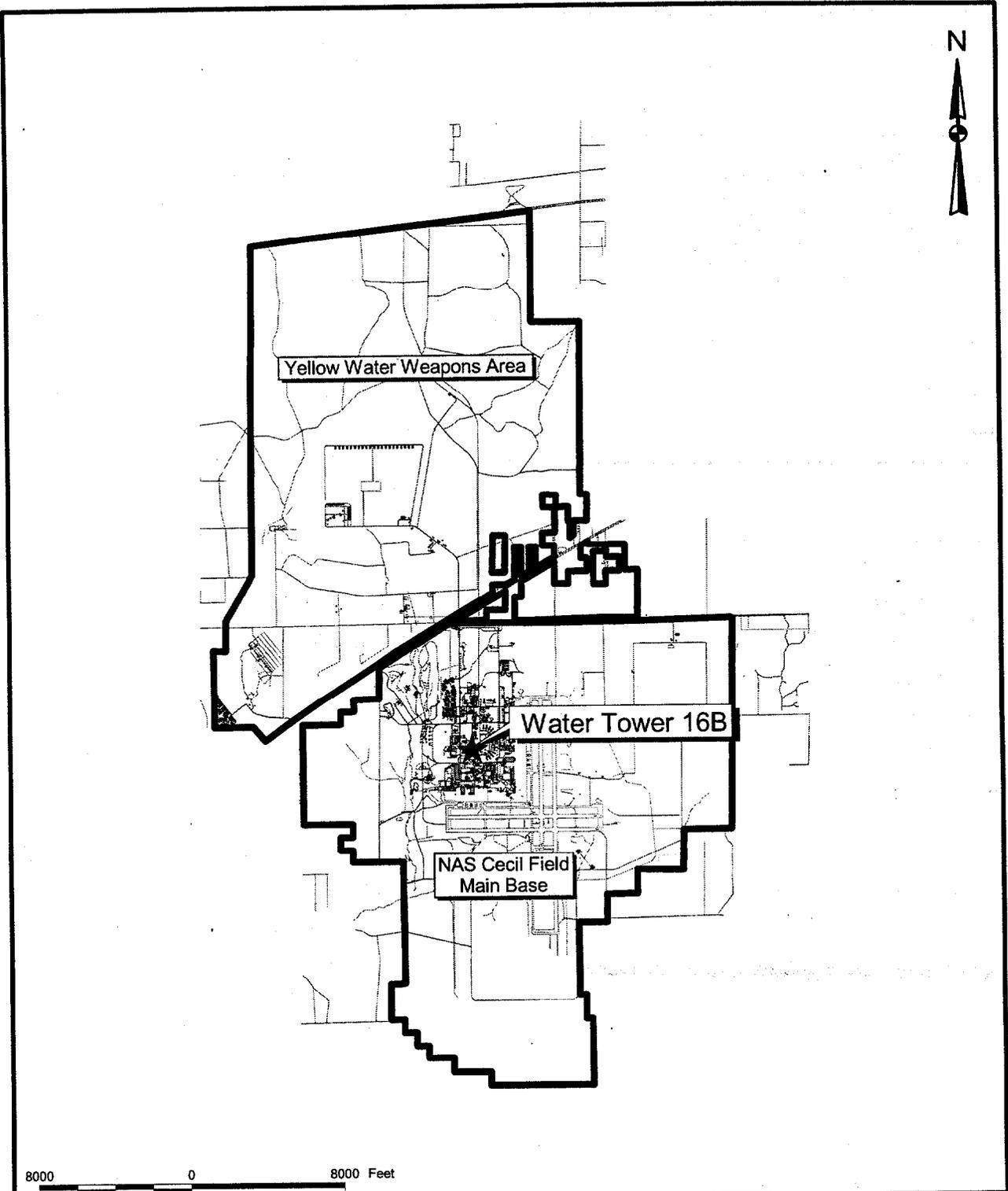
## 1.0 INTRODUCTION

Tetra Tech NUS, Inc. (TtNUS), under contract to Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), has completed the Base Realignment and Closure (BRAC) Phase II Sampling and Analysis Program for the Building 16B Water Tower at Naval Air Station (NAS) Cecil Field. This program was conducted under Contract Number N62467-94-D-088, Contract Task Order (CTO) 0078. This Sampling and Analysis Report (SAR) summarizes the related operations, results, conclusions, and recommendation of the field investigations.

The Building 16B Water Tower is located in a grass- and sand-covered area west of Authority Avenue, formerly "C" Avenue, between Lake Fretwell Street, formerly 4<sup>th</sup> Street, and Lake Newman Street, formerly 6<sup>th</sup> Street, as shown on Figures 1-1 and 1-2. The Building 16B Water Tower is a 100,000-gallon metal water tower that was constructed in 1941. The water tower and adjacent building are surrounded by a chain-link fence, and the areas outside this fence consist of asphalt-paved parking lots.

The Building 16B Water Tower was originally classified in the Environmental Baseline Survey (EBS) as 1/White, areas where no release or disposal of hazardous substances or petroleum products has occurred. [ABB Environmental Services Inc. (ABB-ES), 1994]. However, because the Building 16B Water Tower is 47 years old, there is the possibility that it may have been painted with lead-based paint. The paint on the exterior of the water tower appeared to be in good condition; however, no testing has been conducted to verify the presence of lead-based paint. Lead-based paint could have been released during sandblasting and/or repainting of the water tower. Paint chips were observed on the ground beneath the water tower during a site visit conducted in November 1998.

A Sampling and Analysis Outline (SAO) (TtNUS, 1999a) for the assessment of soil in the vicinity of the Building 16B Water Tower was prepared by TtNUS and approved by the BRAC Cleanup Team (BCT). The resulting investigations were used to delineate the extent of lead contamination in the surface soil, and a subsequent Dig and Haul Package (excavation plan) was prepared by TtNUS (TtNUS, 1999b). The contaminated soil was excavated by the Remedial Action Contractor (RAC), CH2MHill, in accordance with the Dig and Haul Package.



8000 0 8000 Feet

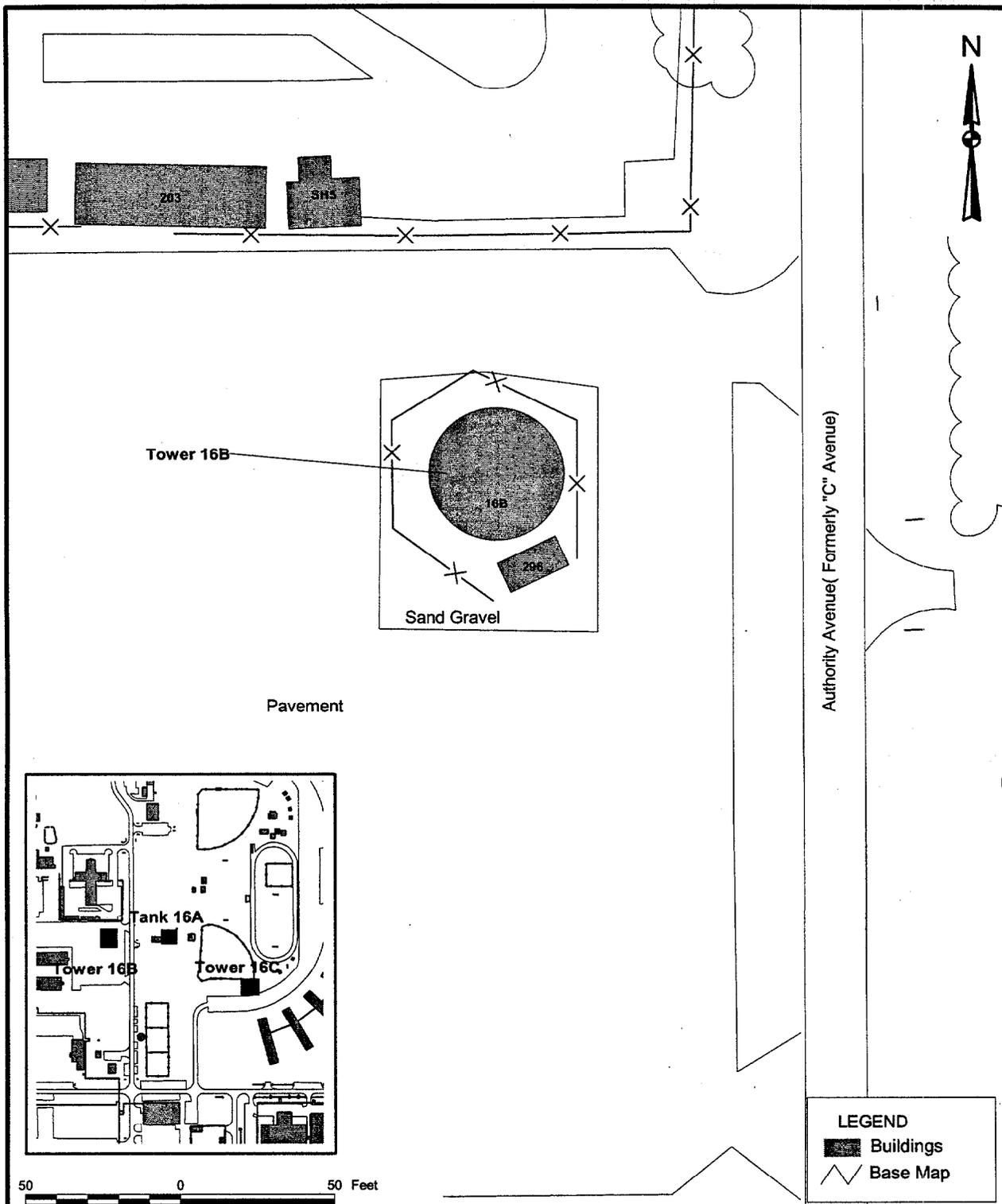
DRAWN BY MJJ	DATE 08Oct99
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



GENERAL LOCATION MAP  
SAMPLING AND ANALYSIS REPORT  
BUILDING 16B WATER TOWER  
NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0039	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1-1	REV 0

P:\GIS\NAS\_CecilField\water\_tank\_16b.apr 02Jun00 MJJ 1-1 Site Location Map Layout



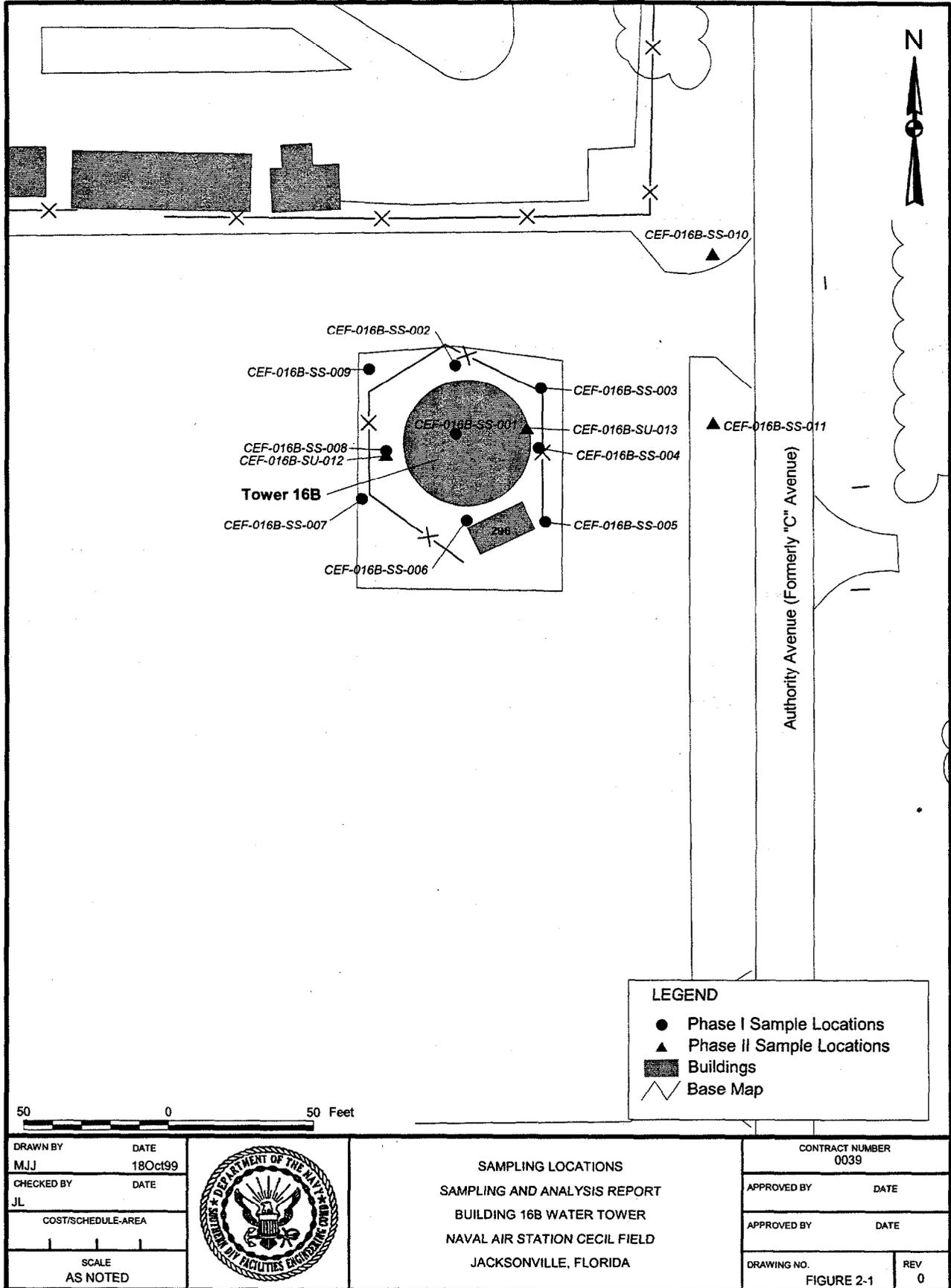
DRAWN BY MJJ		DATE 18Oct99			SITE LOCATION SAMPLING AND ANALYSIS REPORT BUILDING 16B WATER TOWER NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA		CONTRACT NUMBER 0039	
CHECKED BY JL		DATE			APPROVED BY	DATE	APPROVED BY	DATE
COST/SCHEDULE-AREA								
SCALE AS NOTED					DRAWING NO. FIGURE 1-2		REV 0	

P:\GIS\NAS\_CecilField\water\_tank\_16b.apr 02Jun00 MJJ 1 - Site Location Layout

## 2.0 FIELD INVESTIGATIONS

Field investigations were conducted from February to April 1999 to assess potential contamination of surface soil in the vicinity of the tank. Field investigations consisted of collecting and analyzing 15 surface soil samples. The investigations were conducted as an iterative process until contaminant concentration was less than the Florida Department of Environmental Protection (FDEP, 1999) and NAS Cecil Field site-specific Inorganic Background Data Set (IBDS) [Harding Lawson Associates (HLA), 1998] criteria. For the Building 16B Water Tower, this iterative process required two phases of sampling; nine samples were collected and analyzed as part of Phase I, and four additional samples were collected and analyzed as part of Phase II. During Phase II, one additional sample was collected in the area of the highest contamination to determine the Resource Conservation and Recovery Act (RCRA) characteristics of the contaminated soil.

Field activities were conducted in general conformance with the Base-Wide Generic Work Plan (TiNUS, 1998). The surface soil samples were collected adjacent to and near the perimeter of the Building 16B Water Tower. Grab soil samples were collected from a depth of 0 to 1 foot below the ground surface (bgs) at 11 locations (CEF-16B-SS-001 to -011) and from a depth of 1 to 2 feet bgs at two locations (CEF-16B-SU-012 and -013). Figure 2-1 shows the sampling locations. The samples were analyzed for lead by U.S. Environmental Protection Agency (U.S. EPA) Method SW-846 6010B. In addition, three of the Phase I samples (CEF-16B-SS-001, -004, and -004 DU) were analyzed for arsenic by U.S. EPA Method SW-846 6010B and these same samples (CEF-16B-SS-001, -004 and -004 DU) were also analyzed for polychlorinated biphenyls (PCBs) by U.S. EPA Method SW-846 8082B. The Toxicity Characteristics Leaching Procedure (TCLP) was performed on one sample (CEF-16B-SS-004B), and the extract was analyzed for lead and arsenic.



DRAWN BY MJJ	DATE 18Oct99
CHECKED BY JL	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



**SAMPLING LOCATIONS**  
 SAMPLING AND ANALYSIS REPORT  
 BUILDING 16B WATER TOWER  
 NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0039	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2-1	REV 0

P:\GIS\NAS\_CecilFieldwater\_tank\_16b.apr 02Jun00 MJJ 2\_SampleLocationMap Layout

### 3.0 DATA EVALUATION AND REMOVAL ACTION

#### 3.1 DATA EVALUATION

As shown on Table 3-1 and Figure 3-1, lead was detected in nine of the samples (CEF-16B-SS-001, -002, and -004 to -009) at concentrations ranging from 519 to 2,150 mg/kg, in excess of both the Florida Department of Environmental Protection (FDEP) Soil Cleanup Target Level (SCTL) for residential exposure of 400 mg/kg (FDEP, 1999) and the NAS Cecil Field site-specific Inorganic Background Data Set (IBDS) concentration of 197 mg/kg [Harding Lawson Associates (HLA), 1998]. As also shown on Table 3-1, arsenic was detected in two of the same samples (CEF-16B-SS-004 and -004 DU) at concentrations of 6.3 and 4.1 mg/kg, which are in excess of both FDEP's SCTL for residential exposure of 0.8 mg/kg and the NAS Cecil Field site-specific IBDS concentration of 2.04 mg/kg. Lead and arsenic concentration in the Phase II samples were below FDEP's SCTLs.

The concentrations of individual samples are screened against the NAS Cecil Field site-specific Inorganic Background Data Set (IBDS) and the FDEP criteria, as proposed in FAC Chapter 62-777. The remediation goal for any site should never be any less than the IBDS values. However, if a FDEP criterion is greater than the IBDS value, the FDEP criterion is regarded as the remediation goal. Analytical results were also compared to the SCTLs for leachability based on groundwater criteria. For the analytes at this site, the SCTLs for leachability is less restrictive than the SCTLs for residential exposure. The laboratory analytical data sheets are provided in Appendix A.

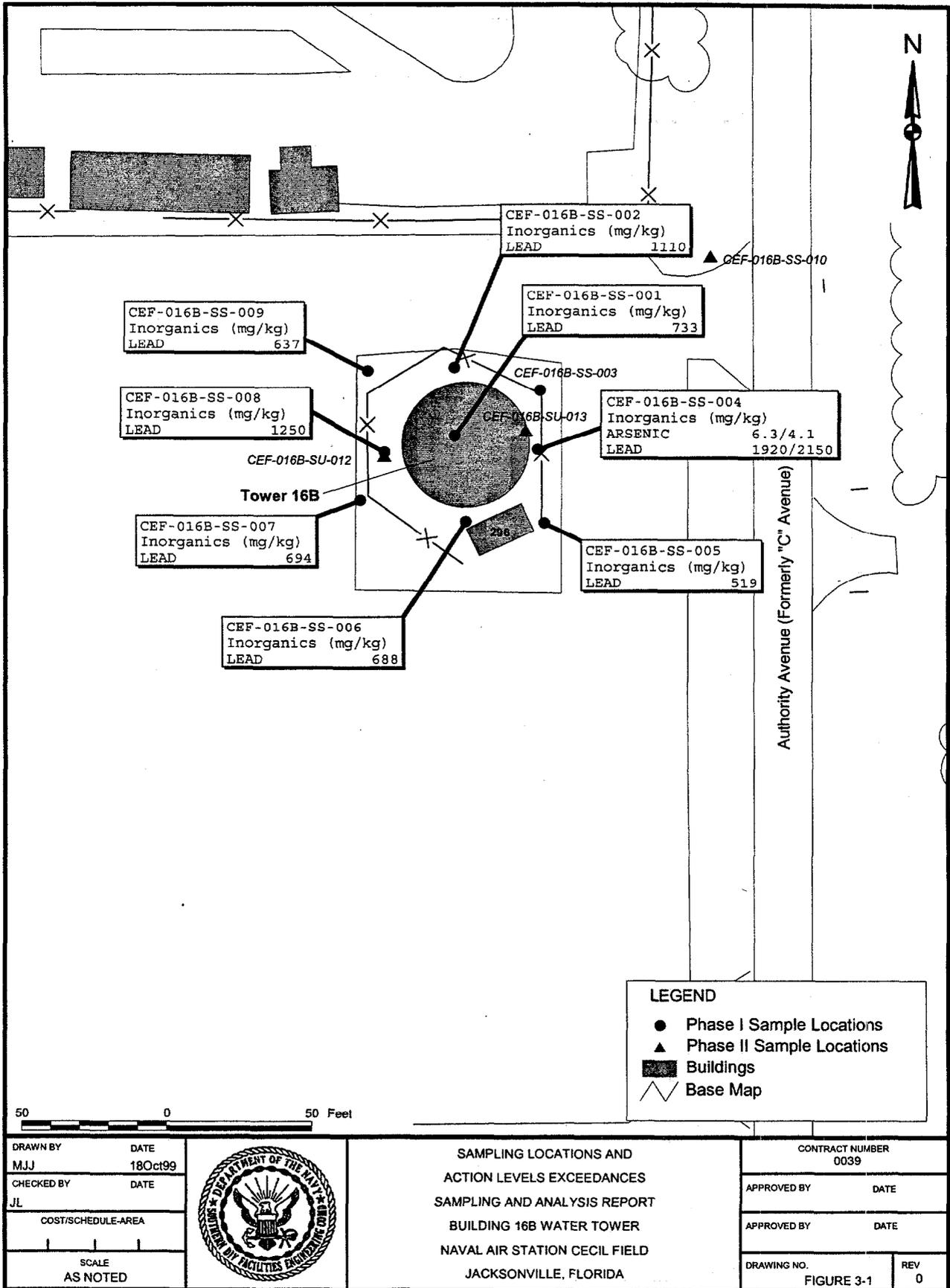
Results of the TCLP testing of the additional sample (CEF-16B-SS-004B) collected near the location of greatest lead contamination showed that the lead concentration of the extract (22.9 mg/L) exceeded the U.S. EPA criterion for toxicity characteristics (5.0 mg/L).

#### 3.2 REMOVAL ACTION

The BCT decided that a removal action was required at Building 16B Water Tower and agreed upon the proposed removal area presented in the Dig and Haul Package. On January 5 through 11, 2000, a total of 240.36 tons of lead- and arsenic-contaminated soil were excavated. The excavated soil was transported and disposed off site on January 10 and 11, 2000. As shown on Figure 3-2, approximately 5,600 square feet (ft<sup>2</sup>) of soil was excavated to a depth of 1 foot bgs, for a total estimated volume of 208 cubic yards (yd<sup>3</sup>). The soil was excavated using a mini-excavator and then stockpiled, bermed and covered before it was loaded into a truck for transportation and disposal. The soil was characterized by the RAC prior to disposal. The excavated soil was transported by Pritchett Trucking to the Chesser Island Road Landfill, a Subtitle D solid waste disposal facility in Folkston, Georgia (CH2MHill, 2000).

Clean fill material from the Dallas Harts Borrow Pit was used to backfill the excavation. The site was graded and seeded with a mixture of rye and bahia grass. No confirmatory sampling was performed.

Detailed information on the remedial activities, including photographs, laboratory results, copies of the soil manifests, certificates of disposal, and certificate of clean fill, is provided in the Source Removal Report (CH2MHill,2000).



**LEGEND**

- Phase I Sample Locations
- ▲ Phase II Sample Locations
- Buildings
- ∕ Base Map

50 0 50 Feet

DRAWN BY MJJ	DATE 18Oct99
CHECKED BY JL	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



SAMPLING LOCATIONS AND  
ACTION LEVELS EXCEEDANCES  
SAMPLING AND ANALYSIS REPORT  
BUILDING 16B WATER TOWER  
NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0039	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3-1	REV 0

P:\GIS\NAS\_CecilField\water\_tank\_16b.apr 02Jun00 MJJ 2 - Tag Map Layout

TABLE 3-1

**ANALYTICAL RESULTS SUMMARY FOR SURFACE SOIL  
FIELD INVESTIGATIONS  
BUILDING 16B WATER TOWER  
NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA**

Sample Location	Lead (mg/kg)			Arsenic (mg/kg)			PCBs (µg/kg)		TCLP Lead (mg/L)		TCLP Arsenic (mg/L)	
	Concentration	IBDS	FDEP SCTL	Concentration	IBDS	FDEP SCTL	Concentration	FDEP SCTL	Concentration	RCRA TCLP	Concentration	RCRA TCLP
<b>Phase I</b>												
CEF-16B-SS-001	733	197	400	1.2 U	2.04	0.8	37U	500	NA	5.0	NA	5.0
CEF-16B-SS-002	1110	197	400	NA	2.04	0.8	NA	500	NA	5.0	NA	5.0
CEF-16B-SS-003	302	197	400	NA	2.04	0.8	NA	500	NA	5.0	NA	5.0
CEF-16B-SS-004	1920	197	400	6.3	2.04	0.8	69J	500	NA	5.0	NA	5.0
CEF-16B-SS-004 DU	2150	197	400	4.1	2.04	0.8	30.9J	500	NA	5.0	NA	5.0
CEF-16B-SS-005	519	197	400	NA	2.04	0.8	NA	500	NA	5.0	NA	5.0
CEF-16B-SS-006	688	197	400	NA	2.04	0.8	NA	500	NA	5.0	NA	5.0
CEF-16B-SS-007	694	197	400	NA	2.04	0.8	NA	500	NA	5.0	NA	5.0
CEF-16B-SS-008	1250	197	400	NA	2.04	0.8	NA	500	NA	5.0	NA	5.0
CEF-16B-SS-009	637	197	400	NA	2.04	0.8	NA	500	NA	5.0	NA	5.0
<b>Phase II</b>												
CEF-16B-SS-010	61.8	197	400	0.69 U	2.04	0.8	NA	500	NA	5.0	NA	5.0
CEF-16B-SS-011	38.5	197	400	0.28 U	2.04	0.8	NA	500	NA	5.0	NA	5.0
CEF-16B-SU-012	2.1 U	197	400	0.29 U	2.04	0.8	NA	500	NA	5.0	NA	5.0
CEF-16B-SU-013	11.6	197	400	0.31 U	2.04	0.8	NA	500	NA	5.0	NA	5.0
<b>Additional</b>												
CEF-16B-SS-004B	NA	197	400	NA	2.04	0.8	NA	500	22.9	5.0	0.078	5.0

**NOTES:**

Shading indicates exceedance of criterion

DU Duplicate sample

NA Not analyzed

SS Surface soil, 0 to 1 foot bgs

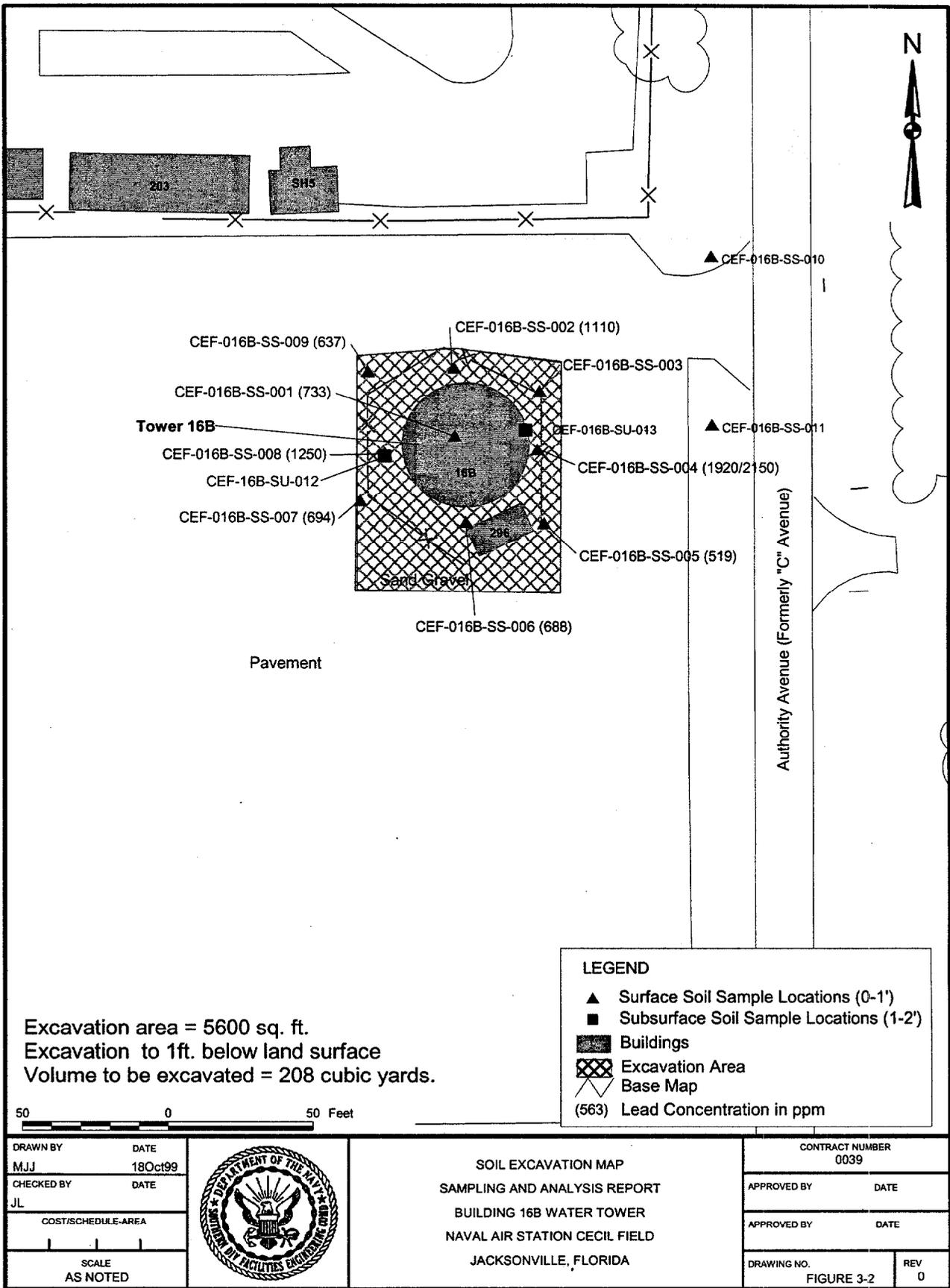
SU Surface soil, 1 to 2 feet bgs

U Not detected at detection limit (see Appendix A for detailed analytical data)

1 NAS Cecil Field site-specific Inorganic Background Data Set concentration (Harding Lawson Associates [HLA], 1998).

2 Lower values of the FDEP Soil Cleanup Target Levels (SCTLs) for direct residential exposure or leachability to groundwater (FAC 62-777).

3 Maximum Concentrations of Contaminants for Toxicity Characteristic as listed on Table 1 of 49CFR261.24(b).



DRAWN BY	DATE
MJJ	18Oct99
CHECKED BY	DATE
JL	
COST/SCHEDULE-AREA	
SCALE AS NOTED	



SOIL EXCAVATION MAP  
 SAMPLING AND ANALYSIS REPORT  
 BUILDING 16B WATER TOWER  
 NAVAL AIR STATION CECIL FIELD  
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0039	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3-2	REV 0

P:\GIS\NAS\_CecilField\water\_tank\_16b.spr 02Jun00 MJJ 3 - Excavation Area Layout

#### 4.0 CONCLUSIONS AND RECOMMENDATION

Field investigations identified approximately 208 yd<sup>3</sup> of soil contaminated with lead and arsenic at concentrations greater than the IBDS value. The BCT decided that a removal action should be performed to excavate and dispose off site the contaminated soil. This removal action occurred in January 2000. Following this removal action, the soil contaminant concentrations are less than the IBDS values and no longer represent a risk to human health and the environment.

Based upon these conclusions, the recommendation for Building 16B Water Tower is No Further Action. It is also recommended that the EBS color code for the Building 16B Water Tower should be classified to Dark Green to denote areas where release, disposal, and/or migration of hazardous substances have occurred and that remedial actions to protect human health and the environment have been taken. Residual lead and arsenic concentrations in surface soil no longer represent a risk to human health or the environment.

## REFERENCES

ABB-ES (ABB Environmental Services, Inc.), 1994. Base Realignment and Closure Environmental Baseline Survey Report, Naval Air Station Cecil Field, Jacksonville, Florida. Tallahassee, FL. November.

CH2MHill, 2000. Source Removal Report, Excavation of Lead- and Arsenic-Contaminated Soil at the Building 16B Water Tower. Naval Air Station Cecil Field, Jacksonville, Florida. (Prepared for SOUTHNAVFACENCOM, Charleston, SC). March.

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

HLA (Harding Lawson Associates), 1998. Inorganic Background Data Set.

TtNUS (Tetra Tech NUS, Inc.), 1998. Base-Wide Generic Work Plan, Naval Air Station Cecil Field, Jacksonville, Florida. Pittsburgh, PA. October.

TtNUS, 1999a. Sampling and Analysis Outline for Building 16B Water Tower, Base Realignment and Closure, Naval Air Station Cecil Field, Jacksonville, Florida. Pittsburgh, PA. January.

TtNUS, 1999b. Dig and Haul Package for Building 16B Water Tower, Naval Air Station Cecil Field, Jacksonville, Florida. Pittsburgh, PA. June.

## APPENDIX A

### Analytical Laboratory Results



DATE: FEBRUARY 22, 1999

- \* • Data Completeness
  - \* • Holding Times
  - \* • Calibration Verifications
  - Laboratory Blank Analyses
- \* - All quality control criteria were met for this parameter.

The attached Table 1 summarizes the validation recommendations which were based on the following information:

Laboratory Blank Analyses

Affected samples: All

<u>Analyte</u>	<u>Maximum Concentration</u>	<u>Action Level(soil)</u>
Arsenic	5.8µg/L	2.9 mg/kg
Lead	3.9µg/L	1.95 mg/kg

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample aliquot, percent solids and dilution factors were taken into consideration when determining blank contamination. Positive results < the action level for arsenic were qualified as, "U", as a result of blank contamination. No action was taken for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes

Samples CEF-631-SS-007, CEF-631-SS-008, CEF-631-SS-009 and CEF-631-SS-DU05 were mislabeled on the Form 1s and data summary tables. The sample IDs were corrected.

Executive Summary

**Laboratory Performance:** Arsenic and lead were present in the laboratory method blanks.

**Other Factors Affecting Data Quality:** None.

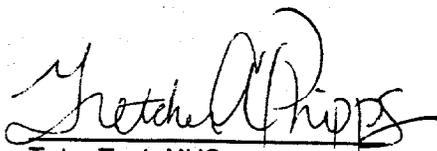
MEMO TO: M. SPERANZA - PAGE 3  
DATE: FEBRUARY 22, 1999

PITT-02-9-179

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide." (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

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



Tetra Tech NUS  
Gretchen A. Phipps



Tetra Tech NUS  
Joseph A. Samchuck  
Quality Control Officer

Attachments:

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



Tetra Tech NUS

INTERNAL CORRESPONDENCE

PITT-05-9-085

TO: M. SPERANZA DATE: MAY 21, 1999

FROM: GRETCHEN PHIPPS COPIES: DV FILE

SUBJECT: INORGANIC DATA VALIDATION – ARSENIC AND LEAD  
CTO 078 - CECIL FIELD  
SDG – F3970

SAMPLES: 26/Soil/

CEF-16A-SS-009	CEF-16A-SS-010	CEF-16A-SS-011
CEF-16A-SS-012	CEF-16A-SU-013	CEF-16B-SS-010
CEF-16B-SS-011	CEF-16B-SU-012	CEF-16B-SU-013
CEF-16C-SS-010	CEF-16C-SS-011	CEF-16C-SS-012
CEF-16C-SS-013	CEF-16C-SS-014	CEF-16C-SS-015
CEF-16C-SS-016	CEF-16C-SS-017	CEF-16C-SS-DUP01
CEF-16C-SS-DUP02	CEF-16C-SU-018	CEF-16C-SU-019
CEF-631-SS-010	CEF-631-SS-011	CEF-631-SS-012
CEF-631-SS-013	CEF-631-SU-014	

2/Leachates/

CEF-16B-SS-004B	CEF-16C-SU-019
-----------------	----------------

Overview

The sample set for CTO 078, Cecil Field, SDG F3970, consists of twenty-six (26) soil environmental samples and two (2) leachate samples.

The soil samples designated by 16A and 631 were analyzed for lead. The soil samples designated by 16B and 16C were analyzed for arsenic and lead. The leachate samples were analyzed for toxicity characteristic leaching procedure (TCLP) lead. The sample was collected by Tetra Tech NUS on April 6 and 7, 1999 and analyzed by Accutest Laboratory. Arsenic and lead analyses were conducted using SW 846 method 6010A.

The data was evaluated based on the following parameters:

- \* • Data Completeness
- \* • Holding Times
- Calibration Verifications
- Laboratory Blank Analyses
- \* - All quality control criteria were met for this parameter.

The attached Table 1 summarizes the validation recommendations which were based on the following information:

Laboratory Blank Analyses

The following contaminants were present in a laboratory method blanks at the following maximum concentration:

Affected samples: All

<u>Analyte</u>	<u>Maximum Concentration</u>	<u>Action Level(soil)</u>	<u>Action Level(leachate)</u>
Arsenic	3.3µg/L	1.65 mg/kg	16.5µg/L
Lead	4.5µg/L	2.25 mg/kg	22.5µg/L

An action level of 5X the maximum concentration has been used to evaluate the sample data for blank contamination. Sample aliquot, percent solids and dilution factors were taken into consideration when determining blank contamination. The positive results < the blank action level for arsenic and lead were qualified, "U", as a result of blank contamination.

Notes

Contract Required Detection Limit (CRDL) Percent Recoveries (%Rs) for arsenic were both above and below the 80-120% quality control limit. However, no validation action was required.

The Form 1 for sample CEF-16C-SU-019 listed the incorrect IDL for arsenic. The form was amended by the data reviewer.

Executive Summary

**Laboratory Performance:** Arsenic and lead were present in the laboratory method/preparation blanks.

**Other Factors Affecting Data Quality:** None.

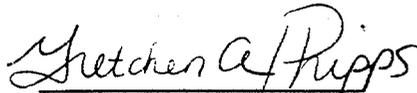
MEMO TO: M. SPERANZA - PAGE 3  
DATE: MAY 21, 1999

PITT-05-9-085

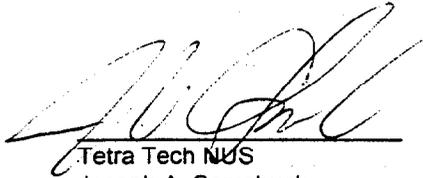
The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", February 1994 and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide." (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

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



Tetra Tech NUS  
Gretchen A. Phipps



Tetra Tech NUS  
Joseph A. Samchuck  
Quality Control Officer

Attachments:

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



Tetra Tech NUS

INTERNAL CORRESPONDENCE

PITT-02-9-195

TO: ~~MARK SPERANZA~~

FROM: DANA PIETO

SUBJECT: ORGANIC DATA VALIDATION – PCBs  
CTO 078, CECIL FIELD, JACKSONVILLE, FLORIDA  
SDG F3612

DATE: MARCH 4, 1999

CC: DV FILE

SAMPLES: Soils\PCB:

CEF-16A-SS-004	CEF-16A-SS-008	CEF-16B-SS-001
CEF-16B-SS-004	CEF-16B-SS-DU02	CEF-16C-SS-001
CEF-16C-SS-004	CEF-16C-SS-DU01	CEF-16D-SS-001
CEF-16D-SS-004	CEF-16D-SS-DU03	CEF-631-SS-DU05
CEF-362-SS-004	CEF-362-SS-008	CEF-362-SS-DU04
CEF-631-SS-001	CEF-631-SS-004	

The sample set for CTO 078, Cecil Field, Jacksonville, Florida, SDG F3612, consists of seventeen soil environmental samples. The samples were analyzed for polychlorinated biphenyl (PCB) organic compounds. Five field duplicates (CEF-16C-SS-001/CEF-16C-SS-DU01, CEF-16B-SS-004/CEF-16B-SS-DU02, CEF-16D-SS-001/CEF-16D-SS-DU03, CEF-362-SS-004/CEF-362-SS-DU04, CEF-631-SS-004/CEF-631-SS-DU05) were included in this SDG.

The samples were collected by Tetra Tech NUS on February 2, 1999, and analyzed by Accutest Laboratories. The PCB compounds were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using the SW-846 Method 8082 analytical and reporting protocol.

The data were evaluated according to the following parameters:

- \* • Holding times
- \* • Initial and continuing calibrations
- \* • Laboratory and field blank analyses
- \* • Detection Limits

The symbol (\*) indicates that quality control criteria were met for this parameter. Problems affecting data usability are discussed below and the attached Table 1 summarizes the validation qualifications.

PCBs

No validation issues are present.

MEMO TO: MARK SPERANZA  
DATE: MARCH 4, 1999 - PAGE 2

It should be noted that the Form I for sample CEF-631-SS-DU05 was incorrectly labeled as CEF-361-SS-DU05. The appropriate corrections were made.

**Executive Summary**

**Laboratory Performance:** There are no validation issues present.

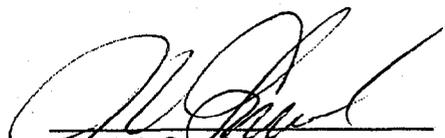
The data for these analyses were reviewed with reference to method-specific quality control criteria, the "National Functional Guidelines for Organic Data Evaluation" and the NFESC Interim Guidance Document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (February 1996).

The text of this report has been formulated to address only those problem areas affecting data quality.

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

  
Dana L. Pioto

Tetra Tech NUS  
Data Validator

  
Joseph A. Samchuck

Tetra Tech NUS  
Data Validation Quality Assurance Officer

**Attachments:**

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

**CTO078 - NAS CECIL FIELD**

**SOIL DATA**

Accutest, NJ

SDG: F3612

SAMPLE NUMBER:	CEF-16B-SS-001	CEF-16B-SS-002	CEF-16B-SS-003	CEF-16B-SS-004
SAMPLE DATE:	02/02/99	02/02/99	02/02/99	02/02/99
LABORATORY ID:	F3612-8	F3612-9	F3612-10	F3612-21
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	90.8 %	92.2 %	92.3 %	90.1 %
UNITS:	MG/KG	MG/KG	MG/KG	MG/KG
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE									
<b>INORGANICS</b>												
ARSENIC	1.2	U	A							6.3		
LEAD	733			1110			302			1920		

**CTO078 - NAS CECIL FIELD**

**SOIL DATA**

**Accutest, NJ**

**SDG: F3612**

SAMPLE NUMBER:	CEF-16B-SS-DU02	CEF-16B-SS-005	CEF-16B-SS-006	CEF-16B-SS-007
SAMPLE DATE:	02/02/99	02/02/99	02/02/99	02/02/99
LABORATORY ID:	F3612-27	F3612-22	F3612-23	F3612-24
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	87.5 %	92.0 %	92.2 %	84.2 %
UNITS:	MG/KG	MG/KG	MG/KG	MG/KG
FIELD DUPLICATE OF:	CEF-16B-SS-004			

	RESULT	QUAL	CODE									
<b>INORGANICS</b>												
ARSENIC	4.1											
LEAD	2150			519			688			694		

**CTO078 - NAS CECIL FIELD**

**SOIL DATA**  
**Accutest, NJ**  
**SDG: F3612**

SAMPLE NUMBER:	CEF-16B-SS-008	CEF-16B-SS-009	CEF-16C-SS-001	CEF-16C-SS-DU01
SAMPLE DATE:	02/02/99	02/02/99	02/02/99	02/02/99
LABORATORY ID:	F3612-25	F3612-26	F3612-28	F3612-37
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	92.7 %	93.3 %	90.7 %	88.9 %
UNITS:	MG/KG	MG/KG	MG/KG	MG/KG
FIELD DUPLICATE OF:				CEF-16C-SS-001

	RESULT	QUAL	CODE									
<b>INORGANICS</b>												
ARSENIC							3.2			4.0		
LEAD	1250			637			2500			1930		

**CTO078 - NAS CECIL FIELD**  
**SOIL DATA**  
**Accutest, NJ**  
**SDG: F3970**

SAMPLE NUMBER:	CEF-16A-SU-013	CEF-16B-SS-010	CEF-16B-SS-011	CEF-16B-SU-012
SAMPLE DATE:	04/07/99	04/07/99	04/07/99	04/07/99
LABORATORY ID:	F3970-27	F3970-7	F3970-8	F3970-9
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	89.4 %	90.1 %	96.0 %	92.3 %
UNITS:	MG/KG	MG/KG	MG/KG	MG/KG
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE									
<b>INORGANICS</b>												
ARSENIC				0.69	U	A	0.28	U	A	0.29	U	
LEAD	2.3	U	A	61.8			38.5			2.1	U	A

**CTO078 - NAS CECIL FIELD**  
**SOIL DATA**  
**Accutest, NJ**  
**SDG: F3970**

SAMPLE NUMBER:  
 SAMPLE DATE:  
 LABORATORY ID:  
 QC\_TYPE:  
 % SOLIDS:  
 UNITS:  
 FIELD DUPLICATE OF:

CEF-16B-SU-013  
 04/07/99  
 F3970-10  
 NORMAL  
 91.2 %  
 MG/KG

~~CEF-16C-SS-010  
 04/07/99  
 F3970-11  
 NORMAL  
 87.6 %  
 MG/KG~~

CEF-16C-SS-011  
 04/07/99  
 F3970-14  
 NORMAL  
 94.4 %  
 MG/KG

CEF-16C-SS-012  
 04/07/99  
 F3970-15  
 NORMAL  
 93.3 %  
 MG/KG

	RESULT	QUAL	CODE									
<b>INORGANICS</b>												
ARSENIC	0.31	U	A	0.31	U		2.8			0.29	U	
LEAD	11.6			123			1280			70.6		

**CTO078 - NAS CECIL FIELD**

**SOIL DATA**  
**Accutest, NJ**  
**SDG: F3612**

SAMPLE NUMBER:  
 SAMPLE DATE:  
 LABORATORY ID:  
 QC\_TYPE:  
 % SOLIDS:  
 UNITS:  
 FIELD DUPLICATE OF:

CEF-16A-SS-004  
 02/02/99  
 F3612-14  
 NORMAL  
 84.0 %  
 UG/KG

CEF-16A-SS-008  
 02/02/99  
 F3612-18  
 NORMAL  
 91.8 %  
 UG/KG

CEF-16B-SS-001  
 02/02/99  
 F3612-8  
 NORMAL  
 90.8 %  
 UG/KG

CEF-16B-SS-004  
 02/02/99  
 F3612-21  
 NORMAL  
 90.1 %  
 UG/KG

	RESULT	QUAL	CODE									
<b>PESTICIDES/PCBs</b>												
AROCLOR-1016	40	U		36	U		37	U		37	U	
AROCLOR-1221	40	U		36	U		37	U		37	U	
AROCLOR-1232	40	U		36	U		37	U		37	U	
AROCLOR-1242	40	U		36	U		37	U		37	U	
AROCLOR-1248	40	U		36	U		37	U		37	U	
AROCLOR-1254	40	U		36	U		37	U		69	J	P
AROCLOR-1260	40	U		36	U		37	U		37	U	

**CTO078 - NAS CECIL FIELD**  
**SOIL DATA**  
**Accutest, NJ**  
**SDG: F3612**

SAMPLE NUMBER:	CEF-16B-SS-DU02	CEF-16C-SS-001	CEF-16C-SS-DU01	CEF-16C-SS-004
SAMPLE DATE:	02/02/99	02/02/99	02/02/99	02/02/99
LABORATORY ID:	F3612-27	F3612-28	F3612-37	F3612-31
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	87.5 %	90.7 %	88.9 %	88.2 %
UNITS:	UG/KG	UG/KG	UG/KG	UG/KG
FIELD DUPLICATE OF:	CEF-16B-SS-004		CEF-16C-SS-001	

	RESULT	QUAL	CODE									
<b>PESTICIDES/PCBs</b>												
AROCLOR-1016	38	U		37	U		38	U		38	U	
AROCLOR-1221	38	U		37	U		38	U		38	U	
AROCLOR-1232	38	U		37	U		38	U		38	U	
AROCLOR-1242	38	U		37	U		38	U		38	U	
AROCLOR-1248	38	U		37	U		38	U		38	U	
AROCLOR-1254	30.9	J	P	37	U		38	U		38	U	
AROCLOR-1260	38	U		37	U		38	U		38	U	

# Report of Analysis

**Client Sample ID:** CEF-16B-SS-001

**Lab Sample ID:** F3612-8

**Matrix:** SO - Soil

**Project:** NAS Cecil Field

**Date Sampled:** 02/02/99

**Date Received:** 02/04/99

**Percent Solids:** 90.8

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Arsenic	1.2	0.98	mg/kg	1	02/05/99	02/05/99 JK	SW846 6010A
Lead	733	9.8	mg/kg	1	02/05/99	02/05/99 JK	SW846 6010A

RDL = Reported Detection Limit

# Report of Analysis

**Client Sample ID:** CEF-16B-SS-002  
**Lab Sample ID:** F3612-9  
**Matrix:** SO - Soil  
**Project:** NAS Cecil Field

**Date Sampled:** 02/02/99  
**Date Received:** 02/04/99  
**Percent Solids:** 92.2

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	1110	10.8	mg/kg	1	02/08/99	02/09/99 JK	SW846 6010A

RDL = Reported Detection Limit

# Report of Analysis

**Client Sample ID:** CEF-16B-SS-003

**Lab Sample ID:** F3612-10

**Matrix:** SO - Soil

**Project:** NAS Cecil Field

**Date Sampled:** 02/02/99

**Date Received:** 02/04/99

**Percent Solids:** 92.3

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	302	10.8	mg/kg	1	02/08/99	02/09/99 JK	SW846 6010A

# Report of Analysis

**Client Sample ID:** CEF-16B-SS-004

**Lab Sample ID:** F3612-21

**Matrix:** SO - Soil

**Project:** NAS Cecil Field

**Date Sampled:** 02/02/99

**Date Received:** 02/04/99

**Percent Solids:** 90.1

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Arsenic	6.3	1.1	mg/kg	1	02/05/99	02/05/99 JK	SW846 6010A
Lead	1920	11.1	mg/kg	1	02/05/99	02/05/99 JK	SW846 6010A

RDL = Reported Detection Limit

# Report of Analysis

<b>Client Sample ID:</b> CEF-16B-SS-005	<b>Date Sampled:</b> 02/02/99
<b>Lab Sample ID:</b> F3612-22	<b>Date Received:</b> 02/04/99
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 92.0
<b>Project:</b> NAS Cecil Field	

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	519	10.9	mg/kg	1	02/09/99	02/10/99 JK	SW846 6010A

# Report of Analysis

**Client Sample ID:** CEF-16B-SS-006

**Lab Sample ID:** F3612-23

**Matrix:** SO - Soil

**Project:** NAS Cecil Field

**Date Sampled:** 02/02/99

**Date Received:** 02/04/99

**Percent Solids:** 92.2

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	688	10.8	mg/kg	1	02/09/99	02/10/99 JK	SW846 6010A

RDL = Reported Detection Limit

# Report of Analysis

<b>Client Sample ID:</b> CEF-16B-SS-007	<b>Date Sampled:</b> 02/02/99
<b>Lab Sample ID:</b> F3612-24	<b>Date Received:</b> 02/04/99
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 84.2
<b>Project:</b> NAS Cecil Field	

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	694	11.9	mg/kg	1	02/09/99	02/10/99 JK	SW846 6010A

# Report of Analysis

**Client Sample ID:** CEF-16B-SS-008

**Lab Sample ID:** F3612-25

**Matrix:** SO - Soil

**Project:** NAS Cecil Field

**Date Sampled:** 02/02/99

**Date Received:** 02/04/99

**Percent Solids:** 92.7

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	1250	10.8	mg/kg	1	02/09/99	02/10/99 JK	SW846 6010A

RDL = Reported Detection Limit

# Report of Analysis

<b>Client Sample ID:</b> CEF-16B-SS-009	<b>Date Sampled:</b> 02/02/99
<b>Lab Sample ID:</b> F3612-26	<b>Date Received:</b> 02/04/99
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 93.3
<b>Project:</b> NAS Cecil Field	

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	637	10.7	mg/kg	1	02/09/99	02/10/99 JK	SW846 6010A

RDL = Reported Detection Limit

# Report of Analysis

<b>Client Sample ID:</b> CEF-16B-SS-DU02	<b>Date Sampled:</b> 02/02/99
<b>Lab Sample ID:</b> F3612-27	<b>Date Received:</b> 02/04/99
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 87.5
<b>Project:</b> NAS Cecil Field	

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Arsenic	4.1	1.1	mg/kg	1	02/05/99	02/05/99 JK	SW846 6010A
Lead	2150	11.4	mg/kg	1	02/05/99	02/05/99 JK	SW846 6010A

---

RDL = Reported Detection Limit

# Report of Analysis

**Client Sample ID:** CEF-16B-SS-010

**Lab Sample ID:** F3970-7

**Matrix:** SO - Soil

**Project:** NAS Cecil Field

**Date Sampled:** 04/07/99

**Date Received:** 04/08/99

**Percent Solids:** 90.1

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Arsenic	0.69 B	1.1	mg/kg	1	04/16/99	04/20/99 JK	SW846 6010A
Lead	61.8	11.1	mg/kg	1	04/16/99	04/20/99 JK	SW846 6010A

RDL = Reported Detection Limit

000044

# Report of Analysis

**Client Sample ID:** CEF-16B-SS-011

**Lab Sample ID:** F3970-8

**Matrix:** SO - Soil

**Project:** NAS Cecil Field

**Date Sampled:** 04/07/99

**Date Received:** 04/08/99

**Percent Solids:** 96.0

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Arsenic	0.28 B	1.0	mg/kg	1	04/16/99	04/20/99 JK	SW846 6010A
Lead	38.5	10.4	mg/kg	1	04/16/99	04/20/99 JK	SW846 6010A

RDL = Reported Detection Limit

000045

# Report of Analysis

**Client Sample ID:** CEF-16B-SU-012

**Lab Sample ID:** F3970-9

**Matrix:** SO - Soil

**Project:** NAS Cecil Field

**Date Sampled:** 04/07/99

**Date Received:** 04/08/99

**Percent Solids:** 92.3

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Arsenic	0.29 U	1.1	mg/kg	1	04/16/99	04/20/99 JK	SW846 6010A
Lead	2.1 B	10.8	mg/kg	1	04/16/99	04/20/99 JK	SW846 6010A

RDL = Reported Detection Limit

000046

# Report of Analysis

**Client Sample ID:** CEF-16B-SU-013

**Lab Sample ID:** F3970-10

**Matrix:** SO - Soil

**Project:** NAS Cecil Field

**Date Sampled:** 04/07/99

**Date Received:** 04/08/99

**Percent Solids:** 91.2

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Arsenic	0.31 B	1.1	mg/kg	1	04/16/99	04/20/99 JK	SW846 6010A
Lead	11.6	11.0	mg/kg	1	04/16/99	04/20/99 JK	SW846 6010A

RDL = Reported Detection Limit

000047

# Report of Analysis

**Client Sample ID:** CEF-16B-SS-004B

**Lab Sample ID:** F3970-6

**Matrix:** SO - Soil

**Project:** NAS Cecil Field

**Date Sampled:** 04/07/99

**Date Received:** 04/08/99

**Percent Solids:** n/a

## Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Arsenic	0.078	0.0050	mg/l	1	04/15/99	04/16/99 JK	SW846 6010A
Lead	22.9	0.0030	mg/l	1	04/15/99	04/16/99 JK	SW846 6010A

RDL = Reported Detection Limit

000043

# Report of Analysis

**Client Sample ID:** CEF-16B-SS-001  
**Lab Sample ID:** F3612-8  
**Matrix:** SO - Soil  
**Method:** SW846 8082  
**Project:** NAS Cecil Field

**Date Sampled:** 02/02/99  
**Date Received:** 02/04/99  
**Percent Solids:** 90.8

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB07250.D	1	02/05/99	SKW	02/05/99	OP670	GAB283
Run #2							

**PCB List**

CAS No.	Compound	Result	RDL	Units	Q
12674-11-2	Aroclor 1016	ND	37	ug/kg	
11104-28-2	Aroclor 1221	ND	37	ug/kg	
11141-16-5	Aroclor 1232	ND	37	ug/kg	
53469-21-9	Aroclor 1242	ND	37	ug/kg	
12672-29-6	Aroclor 1248	ND	37	ug/kg	
11097-69-1	Aroclor 1254	ND	37	ug/kg	
11096-82-5	Aroclor 1260	ND	37	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	111%		40-150%
2051-24-3	Decachlorobiphenyl	100%		30-160%

ND = Not detected  
 RDL = Reported Detection 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

<b>Client Sample ID:</b> CEF-16B-SS-004		<b>Date Sampled:</b> 02/02/99
<b>Lab Sample ID:</b> F3612-21		<b>Date Received:</b> 02/04/99
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> 90.1
<b>Method:</b> SW846 8082		
<b>Project:</b> NAS Cecil Field		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	AB07253.D	1	02/05/99	SKW	02/05/99	OP670	GAB283
Run #2							

**PCB List**

CAS No.	Compound	Result	RDL	Units Q
12674-11-2	Aroclor 1016	ND	37	ug/kg
11104-28-2	Aroclor 1221	ND	37	ug/kg
11141-16-5	Aroclor 1232	ND	37	ug/kg
53469-21-9	Aroclor 1242	ND	37	ug/kg
12672-29-6	Aroclor 1248	ND	37	ug/kg
11097-69-1	Aroclor 1254 <sup>b</sup>	69.0	37	ug/kg J
11096-82-5	Aroclor 1260	ND	37	ug/kg

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	104%		40-150%
2051-24-3	Decachlorobiphenyl	94%		30-160%

(a) All hits confirmed by dual column analysis.

(b) Estimated value due to matrix interference.

ND = Not detected  
 RDL = Reported Detection 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

<b>Client Sample ID:</b> CEF-16B-SS-DU02	
<b>Lab Sample ID:</b> F3612-27	<b>Date Sampled:</b> 02/02/99
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 02/04/99
<b>Method:</b> SW846 8082	<b>Percent Solids:</b> 87.5
<b>Project:</b> NAS Cecil Field	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	AB07254.D	1	02/05/99	SKW	02/05/99	OP670	GAB283
Run #2							

**PCB List**

CAS No.	Compound	Result	RDL	Units	Q
12674-11-2	Aroclor 1016	ND	38	ug/kg	
11104-28-2	Aroclor 1221	ND	38	ug/kg	
11141-16-5	Aroclor 1232	ND	38	ug/kg	
53469-21-9	Aroclor 1242	ND	38	ug/kg	
12672-29-6	Aroclor 1248	ND	38	ug/kg	
11097-69-1	Aroclor 1254 <sup>b</sup>	30.9	38	ug/kg	J
11096-82-5	Aroclor 1260	ND	38	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	99%		40-150%
2051-24-3	Decachlorobiphenyl	87%		30-160%

(a) All hits confirmed by dual column analysis.

(b) Estimated value due to matrix interference.

ND = Not detected  
 RDL = Reported Detection 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