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SAMPLING AND ANALYSIS REPORT ADDENDUM 2 FOR BUILDING 1820 BASE REALIGNMENT AND CLOSURE NAS CECIL FIELD FL

9/5/2000

TETRA TECH NUS INC

Rev. 0
09/05/00

Sampling and Analysis Report Addendum 2

for

Building 1820
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

September 2000

Rev. 0
09/05/00

SAMPLING AND ANALYSIS REPORT ADDENDUM 2
FOR
BUILDING 1820
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
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

SEPTEMBER 2000

PREPARED UNDER THE SUPERVISION OF:

Mark Sperenza

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

APPROVED FOR SUBMITTAL BY:

Debbie Wroblewski

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

03757

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: September 5, 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 Addendum 2 for Building 1820, 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: 9/6/00

Mark Speranza

SAMPLING AND ANALYSIS REPORT ADDENDUM 2
BASE REALIGNMENT AND CLOSURE
BUILDING 1820

Tetra Tech NUS, Inc. (TtNUS), under contract to Southern Division, Naval Facilities Engineering Command, has completed additional soil sampling at Building 1820 at Naval Air Station (NAS) Cecil Field. This work was conducted under Contract Number N62467-94-D-0888, Contract Task Order (CTO) 0078. This addendum summarizes the results of the most recent sampling and supplements the previous Sampling and Analysis Report (SAR) (ABB-ES, 1996) and SAR Addendum (SARA) (HLA, 1999).

In 1998, three areas on the western side and one area on the southern side of Building 1820 were excavated to a depth of 1 foot below ground surface (bgs) to remediate soil contaminated with chromium, lead, and vanadium (HLA, 1999). See Figure 1. The limits of contaminated soil were not fully delineated prior to the excavation, and confirmation samples were not collected at the time of the excavation. The post-excavation samples were collected by TtNUS in this investigation to confirm that all contaminated soil had been removed.

For each of the three excavation areas along the western side of the building, excavation limits had been defined by the building on the east, the roadway on the west, a depth sample, and a sample on the southern side of each excavation. Therefore, each excavation required a sample on the northern side to confirm that excavation of the contaminated soil was complete. The fourth excavation area, located on the southern side of the building, had been fully defined by the roadway on the south, building walls on the north and east, a depth sample, and a soil sample on the western side of the excavation, and no additional delineation was needed there.

The soil samples for this investigation were collected from a depth of 0 to 1 foot bgs and analyzed for chromium, lead, and vanadium. See Figure 1. The data are summarized on Table 1, and the laboratory data sheets are included in Appendix A. The detected concentrations were less than the Florida Department of Environmental Protection (FDEP) Soil Cleanup Target Levels (SCTLs) listed in Florida Administrative Code (FAC) 62-777. Therefore, the excavation was complete, and no further excavation is needed. The color code of the facility, as determined in the 1999 SARA, remains Dark Green (HLA, 1999).

REFERENCES

ABB-ES (ABB Environmental Services, Inc.), 1996. Sampling and Analysis Report, Hangar 1820, Naval Air Station Cecil Field, Jacksonville, Florida. June.

HLA (Harding Lawson Associates), 1999. Sampling and Analysis Report Addendum, Facility 1820, Naval Air Station Cecil Field, Jacksonville, Florida. March.

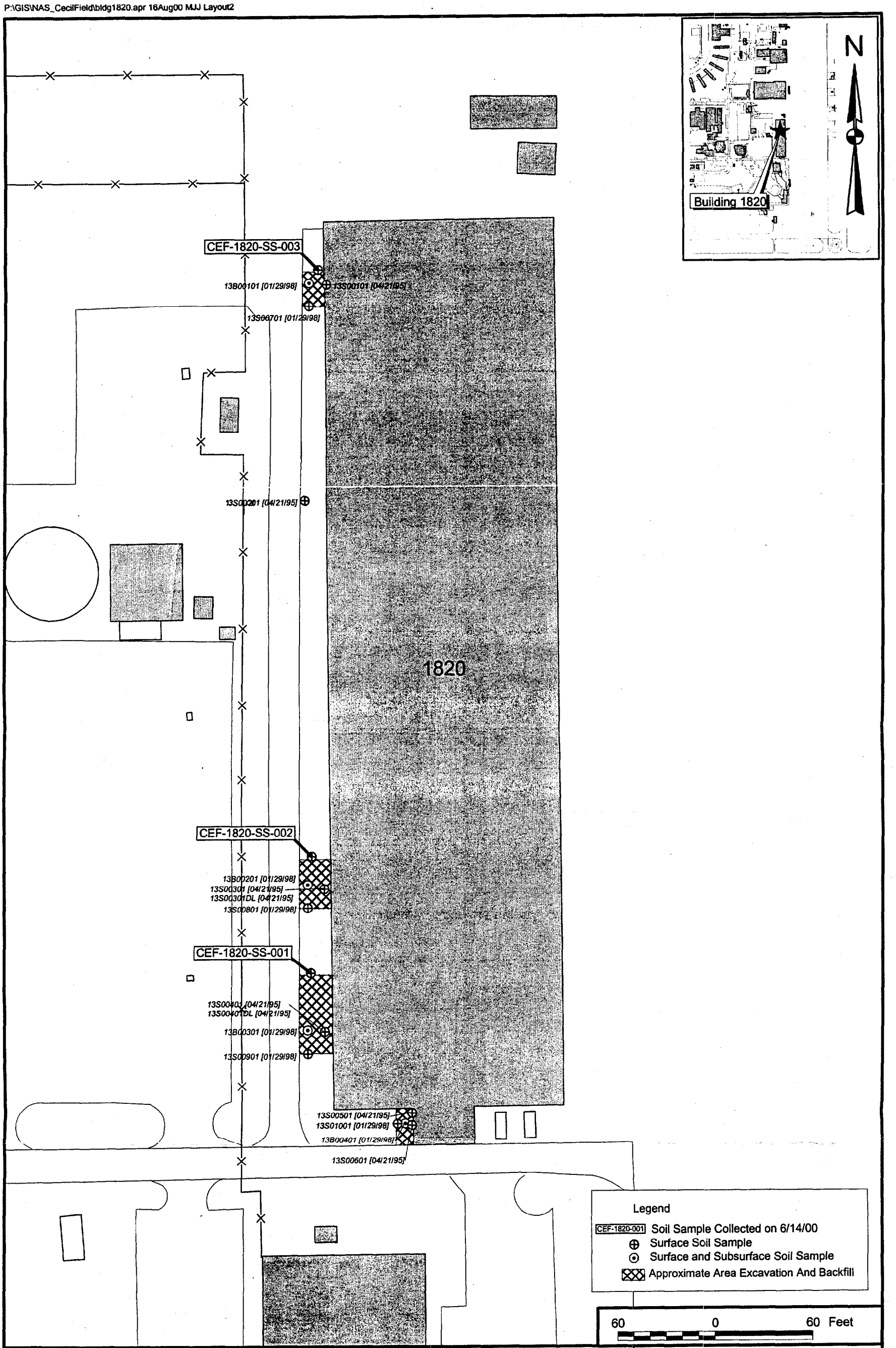
TABLE 1

POST-EXCAVATION SOIL RESULTS
BUILDING 1820
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Location	CEF-1820-SS-001	CEF-1820-SS-001	CEF-1820-SS-002	CEF-1820-SS-003	FDEP Residential Exposure Criteria FAC 62-777	FDEP Leachability to Groundwater Criteria FAC 62-777
Sample Number	CEF-1820-SS-001-01	CEF-1820-DUP1	CEF-1820-SS-002-01	CEF-1820-SS-003-01		
Duplicate of:		CEF-1820-SS-001-01				
Top Depth, feet bgs	0	0	0	0		
Bottom Depth, feet bgs	1	1	1	1		
Sample Date	6/14/00	6/14/00	6/14/00	6/14/00		
Inorganics (mg/kg)						
CHROMIUM	5.3	11.2	7.2	8.1	210	38
LEAD	7.3	7.4	6.6	17.5	400	NA
VANADIUM	5.6	5.5	8.0	4.1	15	980

NOTES:
FDEP - Florida Department of Environmental Protection
FAC - Florida Administrative Code
NA - Not applicable
bgs - below ground surface

P:\GIS\NAS_CecilField\bldg1820.apr 16Aug00 MJJ Layout2



DRAWN BY	DATE
MJJ	15Aug00
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE	AS NOTED

SITE MAP
BUILDING 1820
SAMPLING AND ANALYSIS REPORT ADDENDUM 2
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0039

APPROVED BY — DATE 8/16/00

APPROVED BY — DATE —

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CTO 0078

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APPENDIX A

LABORATORY ANALYTICAL REPORTS

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**AUGUST 7, 2000**
FROM:	**GRETCHEN PHIPPS**	**COPIES:**	**DV FILE**
SUBJECT:	**INORGANIC DATA VALIDATION – METALS** **CTO 078 - NAS CECIL FIELD** **SDG – F6809**		
SAMPLES:	7/Soils/		

~~CEF-FFD-SS-001-01~~
~~CEF-FFD-SS-DUP1~~
CEF-1820-SS-001-01
CEF-1820-SS-003-01
~~CEF-FFD-SS-002-01~~
CEF-1820-DUP1
CEF-1820-SS-002-01

Overview

The sample set for CTO 078, Cecil Field, SDG F6809 consists of seven (7) soil environmental samples. Two (2) field duplicate pairs (CEF-FFD-SS-001-01 / CEF-FFD-SS-DUP1 and CEF-1820-SS-001-01 / CEF-1820-DUP1) were included within this SDG.

The FFD samples were analyzed for Target Analyte List (TAL) metals. The six "1820" samples were analyzed for chromium, lead and vanadium. The samples were collected by Tetra Tech NUS on June 14, 2000 and analyzed by Accutest Laboratory under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA / QC) criteria. Metals analyses were conducted using SW 846 method 6010B/7470A.

The data was evaluated based on the following parameters:

- * Data Completeness
- * Holding Times
- * Calibration Verifications
- Laboratory Blank Analyses
- Field Duplicate Results
- * Detection Limits

* - All quality control criteria were met for this parameter.

Laboratory Blank Analyses

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

Analyte	Maximum Concentration	Action Level(soil)
Aluminum	51.5µg/L	25.75 mg/kg
Arsenic	4.4µg/L	2.2 mg/kg
Barium	1.2µg/L	0.6 mg/kg
Beryllium	1.8µg/L	0.9 mg/kg
Cadmium	1.1µg/L	0.55 mg/kg
Calcium	23.5µg/L	11.75 mg/kg
Chromium	0.69µg/L	0.345 mg/kg
Cobalt	1.2µg/L	0.6 mg/kg
Copper	3.4µg/L	1.7 mg/kg
Iron	47.6µg/L	23.8 mg/kg
Magnesium	28.3µg/L	14.15 mg/kg
Manganese	1.1µg/L	0.55 mg/kg
Mercury	0.2µg/L	0.17 mg/kg
Nickel[1]	0.35 mg/kg	1.75 mg/kg
Potassium	246µg/L	123 mg/kg
Selenium	4.2µg/L	2.1 mg/kg
Silver	1.5µg/L	0.75 mg/kg
Vanadium	1.0µg/L	0.5 mg/kg
Zinc	1.3µg/L	0.65 mg/kg

(1) Maximum concentration present in a soil preparation blank.

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 less than the blank action levels for arsenic, beryllium, cadmium, cobalt, mercury, nickel, potassium and selenium were qualified, "U", as a result of blank contamination.

Field Duplicate Results

Field duplicate imprecision was noted for in field duplicate pair CEF-FFD-SS-001-01 / CEF-FFD-SS-DUP1 for lead and iron. The positive results reported for lead and iron in the affected duplicate pair were qualified as estimated, "J".

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method / preparation blanks.

Other Factors Affecting Data Quality: Field duplicate imprecision was noted for in field duplicate pair CEF-FFD-SS-001-01 / CEF-FFD-SS-DUP1 for lead and iron.

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 IRCDQM." (September 1999).

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

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

Gretchen A. Phipps

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

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

CTO07o-NAS CECIL FIELD
SOIL DATA
Accutest, NJ
SDG: F6809

SAMPLE NUMBER:	CEF-1820-DUP1			CEF-1820-SS-001-01			CEF-1820-SS-002-01			CEF-1820-SS-003-01		
SAMPLE DATE:	06/14/00			06/14/00			06/14/00			06/14/00		
LABORATORY ID:	F6809-6			F6809-7			F6809-8			F6809-9		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	97.3 %			96.4 %			93.0 %			96.3 %		
UNITS:	MG/KG			MG/KG			MG/KG			MG/KG		
FIELD DUPLICATE OF:	CEF-1820-SS-001-01											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
CHROMIUM	11.2			5.3			7.2			8.1		
LEAD	7.4			7.3			6.6			17.5		
VANADIUM	5.5			5.6			8.0			4.1		

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCD% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

Report of Analysis

Client Sample ID:	CEF-1820-DUP1		
Lab Sample ID:	F6809-6	**Date Sampled:**	06/14/00
Matrix:	SO - Soil	**Date Received:**	06/16/00
		Percent Solids:	97.3
Project:	NAS Cecil Field-BLDGS.30/182		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method
Chromium	11.2	1.0	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A
Lead	7.4 B	10.1	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A
Vanadium	5.5	5.0	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CEF-1820-SS-001-01		
Lab Sample ID:	F6809-7	**Date Sampled:**	06/14/00
Matrix:	SO - Soil	**Date Received:**	06/16/00
		Percent Solids:	96.4
Project:	NAS Cecil Field-BLDGS.30/182		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method
Chromium	5.3	1.0	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A
Lead	7.3 B	10.3	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A
Vanadium	5.6	5.1	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CEF-1820-SS-002-01		
Lab Sample ID:	F6809-8	**Date Sampled:**	06/14/00
Matrix:	SO - Soil	**Date Received:**	06/16/00
		Percent Solids:	93.0
Project:	NAS Cecil Field-BLDGS.30/182		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method
Chromium	7.2	1.2	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A
Lead	6.6 B	11.9	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A
Vanadium	8.0	6.0	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CEF-1820-SS-003-01		
Lab Sample ID:	F6809-9	**Date Sampled:**	06/14/00
Matrix:	SO - Soil	**Date Received:**	06/16/00
		Percent Solids:	96.3
Project:	NAS Cecil Field-BLDGS.30/182		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method
Chromium	8.1	1.0	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A
Lead	17.5	10.3	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A
Vanadium	4.1 B	5.1	mg/kg	1	06/19/00	06/22/00	SJL	SW846 6010A

RL = Reporting Limit