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NAS CECIL FIELD, FL
5090.3a

SAMPLING AND ANALYSIS REPORT ADDENDUM FOR BUILDING 1848 NAS CECIL FIELD
FL
4/1/2005
TETRA TECH NUS INC

**SAMPLING AND ANALYSIS REPORT ADDENDUM
FOR
BUILDING 1848**

**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**

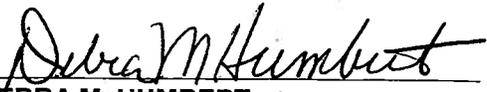
APRIL 2005

PREPARED UNDER THE SUPERVISION OF:

APPROVED FOR SUBMITTAL BY:



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



**DEBRA M. HUMBERT
PROGRAM MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA**



NAVFAC

The professional opinions rendered in this decision document identified as Sampling and Analysis Report Addendum for Building 1848, Naval Air Station Cecil Field, Jacksonville, Florida were developed in accordance with commonly accepted procedures consistent with applicable standards of practice. Decision documents are based on information obtained from others and under the supervision of the signing engineer. If conditions are determined to exist differently than those described in this document, then the undersigned professional engineer should be notified to evaluate the effects of any additional information on the project described in this report.

Mark Speranza

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

Mark Speranza



CERTIFICATION OF TECHNICAL
DATA CONFORMITY

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

DATE: April 20, 2005

COMPANY CERTIFICATION AUTHORIZATION NUMBER:

7988
Tetra Tech NUS, Inc.
661 Andersen Drive
Pittsburgh, PA 15220

NAME AND TITLE OF CERTIFYING OFFICIAL:

Mark Speranza, P.E.
Task Order Manager

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FIGURES

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| 1-1 | General Location Map |
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LIST OF ACRONYMS

| | |
|------------|---|
| ABB-ES | ABB Environmental Services, Inc. |
| BCT | Base Cleanup Team |
| BRAC | Base Realignment and Closure |
| CLEAN | Comprehensive Long Term Environmental Action Navy |
| CTO | Contract Task Order |
| FAC | Florida Administrative Code |
| FDEP | Florida Department of Environmental Protection |
| FOST | Finding of Suitability to Transfer |
| JAA | Jacksonville Airport Authority |
| NAS | Naval Air Station |
| NAVFAC EFD | Naval Facilities Engineering Field Division |
| SAR | Sampling and Analysis Report |
| SCTL | Soil Cleanup Target Level |
| SVOC | Semivolatile Organic Compound |
| TAL | Target Analyte List |
| TCL | Target Compound List |
| TINUS | Tetra Tech NUS, Inc. |
| U.S.EPA | United States Environmental Protection Agency |

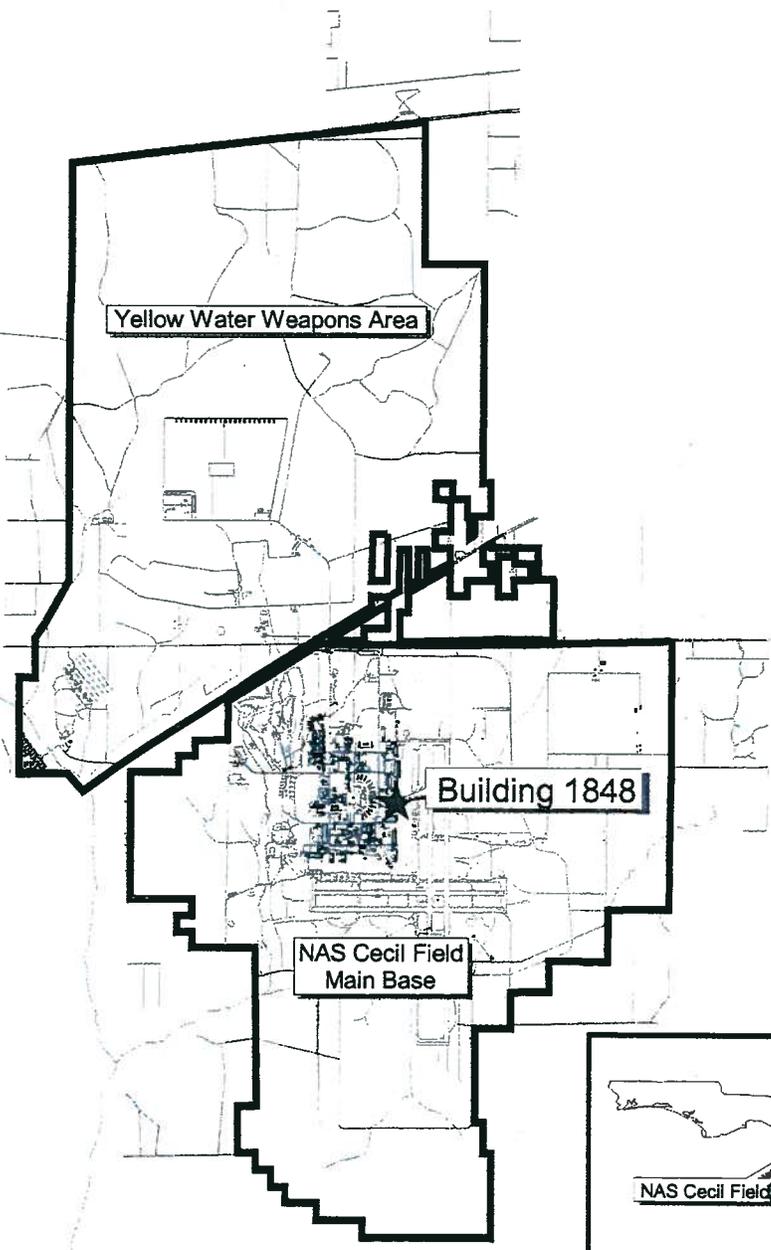
1.0 INTRODUCTION

Tetra Tech NUS, Inc. (TtNUS), under contract to Naval Facilities Engineering Field Division South (NAVFAC EFD SOUTH), has completed supplemental investigation to support the Base Realignment and Closure (BRAC) Sampling and Analysis Investigation for Building 1848 at Naval Air Station (NAS) Cecil Field in Jacksonville, Florida. This investigation was conducted under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, Contract Number N62467-94-D-0888, Contract Task Order (CTO) 0078. This Sampling and Analysis Report (SAR) Addendum summarizes the supplemental-investigation related field work, results, conclusions, and recommendations of the field investigation.

Figure 1-1 shows the general location of Building 1848, Ground Support Issue and Receipt, at NAS Cecil Field. Building 1848, Ground Support Issue and Receipt, was used to temporarily store ground support equipment and supplies before there were issued for use on the runway. Currently, the building is used for flightline vehicle maintenance. Building 1848 is included in the Site 58 Day Tank 1 carve-out and is scheduled to be transferred to Jacksonville Airport Authority (JAA) as part of the JAA Phase V Parcel. Future plans for the area include aviation-related uses. A Finding of Suitability to Transfer (FOST) document will be prepared to support the land transfer.

Potential environmental concerns noted in the SAR included verbal accounts of a solvent release northwest of the building and the possibility that the petroleum-related Day Tank 1 groundwater plume extended beneath Building 1848 (ABB-ES, 1997). During the SAR investigation, one surface soil sample was collected from the area northwest of the building where the solvent spill was reported, and the sample was analyzed for Target Compound List (TCL) organic compounds and Target Analyte List (TAL) inorganics. Only the concentration of benzo(a)pyrene in this soil sample (170 µg/kg) exceeded its Florida Department of Environmental Protection (FDEP) residential Soil Cleanup Target Level (SCTL) of 100 µg/kg. Based on these results, the BRAC Cleanup Team (BCT) decided that a confirmatory sample was required at this location to investigate the benzo(a)pyrene exceedance.

This SAR Addendum summarizes the related field operations, results, conclusions, and recommendations of the investigation conducted by TtNUS in May 2004. The results of the investigation indicate that no further action is needed at this site.



8000 0 8000 Feet

| | |
|----------------------------------|-----------------|
| DRAWN BY MJJ | DATE 15Dec04 |
| CHECKED BY <i>[Signature]</i> | DATE 4/18/05 |
| COST/SCHEDULE-AREA | |
| SCALE AS NOTED | |



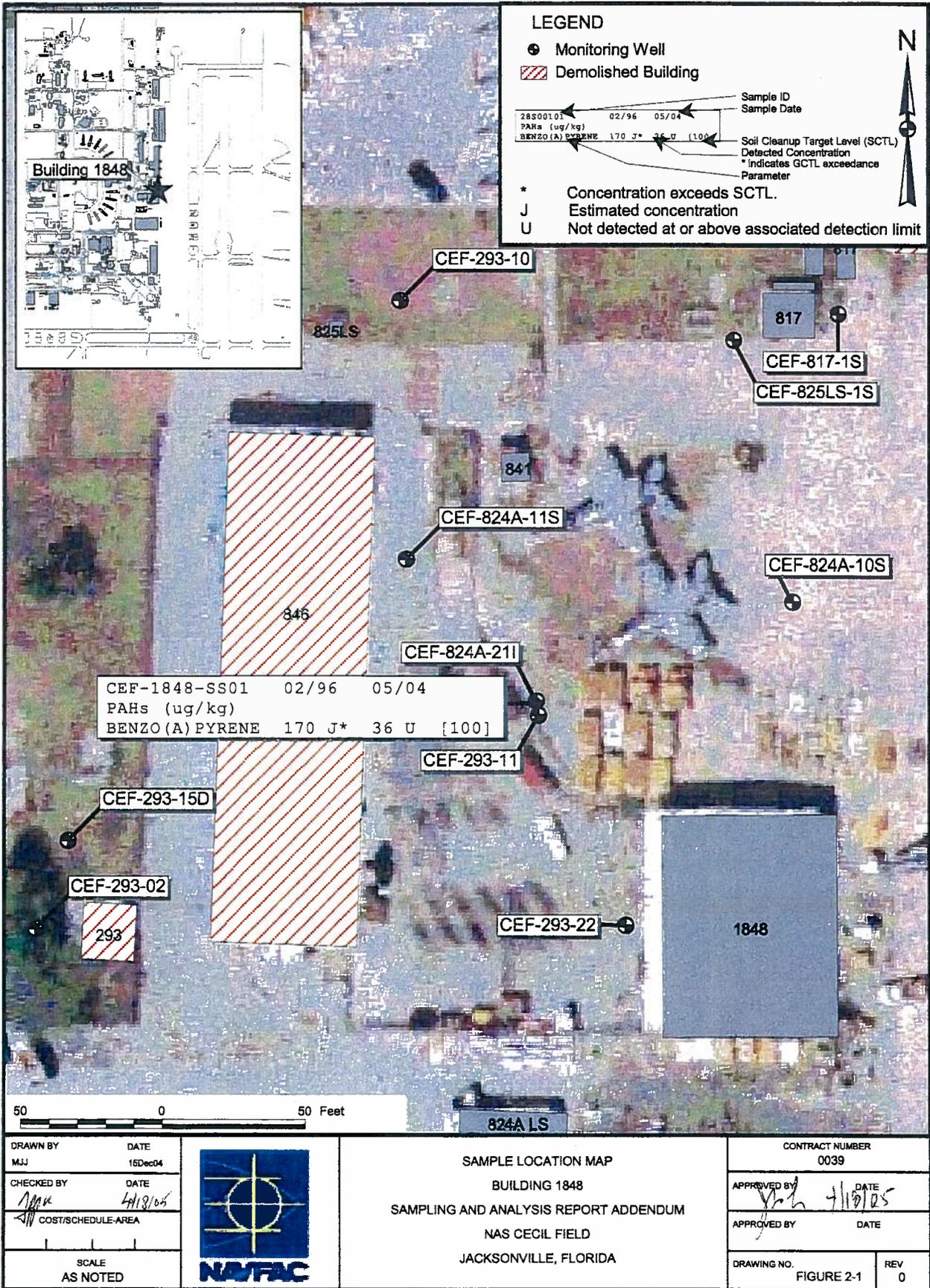
GENERAL LOCATION MAP
 BUILDING 1848
 SAMPLING AND ANALYSIS REPORT ADDENDUM
 NAS CECIL FIELD
 JACKSONVILLE, FLORIDA

| | |
|-----------------------------------|-----------------|
| CONTRACT NUMBER 0039 | |
| APPROVED BY <i>[Signature]</i> | DATE 4/18/05 |
| APPROVED BY | DATE |
| DRAWING NO. FIGURE 1-1 | REV 0 |

2.0 FIELD INVESTIGATION

The field investigation at Building 1848 was conducted in May 2004. A surface soil sample, CEF-1848-SS01-01, was collected on May 10, 2004 at the same location as previously detected exceedance of SCTL, and analyzed for semivolatile organic compounds (SVOCs) using United States Environmental Protection Agency (U.S. EPA) Method SW-846 8270 by ACCUTEST Southeast in Orlando, Florida. Figure 2-1 shows the site area and sample location.

Appendix A provides the chain of custody and the data validation letter for this sample.



3.0 DATA EVALUATION

SVOCs including benzo(a)pyrene were not detected in the soil sample, with detection limits being less than their respective FDEP SCTLs under Florida Administrative Code (FAC) Chapter 62-777 (FDEP, 1999). Figure 2-1 shows the data from the two samples that were collected at the location of CEF-1848-SS01-01.

4.0 CONCLUSIONS AND RECOMMENDATIONS

A confirmatory soil sample was collected at the Building 1848 site at the location where a previously collected soil sample contained a marginal exceedance of the FDEP SCTL of 100 µg/kg for benzo(a)pyrene. The confirmatory soil sample contained no detectable levels of any of the SVOCs, including benzo(a)pyrene.

Based upon this conclusion, the recommendation for the Building 1848 site is no further action. For soils only, the color classification of Building 1848 could be changed from Yellow to Light Green to denote that release, disposal, and/or migration of hazardous substances have occurred but not at concentrations that require a removal or remedial response. However, Building 1848 is located within the area of Operable Unit 9 (Site 57 groundwater plume) where remediation of groundwater has not yet been completed. For this reason, it is recommended that the color classification for Building 1848 remain as Yellow until the remedial action being conducted for Site 57 receives an approved Operating Properly and Successfully determination. At that time, the color classification of the balance of the site in the Finding of Suitability to Transfer can become Dark Green to denote that release, disposal, and/or migration of hazardous substances have occurred, and all remedial actions necessary to protect human health and the environment have been taken.

REFERENCES

ABB-ES (ABB Environmental Services, Inc.), 1997. Sampling and Analysis Report Building 1848, Base Realignment and Closure, Zone D, Industrial Flightline Area Group III, Naval Air Station Cecil Field, Jacksonville, Florida. November.

FDEP (Florida Department of Environmental Protection), 1999. Technical Report: Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, Florida Administrative Code, May 26, 1999.

APPENDIX A

-Chain of Custody

-Validation Letter



TETRA TECH NUS, INC

CHAIN OF CUSTODY

F24092
NUMBER

DTI-051004

PAGE 1 OF 1

| | | | | |
|---|---|---|---|--|
| PROJECT NO: N0039, CTO78 | FACILITY: Bldg. 1848 and DAY TANK 1 | PROJECT MANAGER MARK SPERANZA | PHONE NUMBER 412 921 8916 | LABORATORY NAME AND CONTACT: ACCUTEST Sue Ball |
| SAMPLERS (SIGNATURE) Scott R. McGuire | | FIELD OPERATIONS LEADER MERY DARE | PHONE NUMBER 904 636 6125 | ADDRESS 4405 Vineland Rd. |
| | | CARRIER/WAYBILL NUMBER Courier | CITY, STATE ORLANDO, FL 32811 | |

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

| | | | | | | | |
|--|------------------|--------------------|------|------|--------|-------|------|
| CONTAINER TYPE PLASTIC (P) or GLASS (G) | H ₂ O | CH ₂ OH | G | G | G | G | G |
| PRESERVATIVE USED | None | None | None | None | None | None | None |
| TYPE OF ANALYSIS | VOCs | VOCs P260B | PAHS | TRPH | FL-PRO | SVOCs | P270 |

| DATE YEAR | TIME | SAMPLE ID | LOCATION ID | TOP DEPTH (FT) | BOTTOM DEPTH (FT) | MATRIX (GW, SO, SW, SD, OC, ETC.) | COLLECTION METHOD GRAP (G) COMP (C) | No. OF CONTAINERS |
|-----------|------|------------------|-------------|----------------|-------------------|-----------------------------------|-------------------------------------|-------------------|
| 5-10 | 1120 | CEF-57-TW19-04 | | | | | | |
| 5-10 | 1220 | CEF-57-TW18-04 | | | | | | |
| 5-10 | 1305 | CEF-57-TW17-05 | | | | | | |
| | | SRM | | | | | | |
| 5-10 | 1325 | CEF-1848-SS01-01 | | | | | | |

| TYPE OF ANALYSIS | | | | | | | | COMMENTS |
|------------------|------------|------|------|--------|-------|------|---|--------------|
| VOCs | VOCs P260B | PAHS | TRPH | FL-PRO | SVOCs | P270 | | |
| X | X | X | X | | | | | Cool to 4°C |
| X | X | X | X | | | | | |
| X | X | X | X | | | | | N0039-WR 438 |
| | | | | | | | X | |

| | | | | | |
|---|------------------------|---------------------|--------------------------------------|------------------------|----------------------|
| 1. RELINQUISHED BY <i>Michael W. ...</i> | DATE 5/12/04 | TIME 1322 | 1. RECEIVED BY <i>Michael ...</i> | DATE 5-12-04 | TIME 1332 |
| 2. RELINQUISHED BY <i>Michael W. ...</i> | DATE 5-12-04 | TIME 1650 | 2. RECEIVED BY <i>Jeff ...</i> | DATE 5/12/04 | TIME 16:50 |
| 3. RELINQUISHED BY | DATE | TIME | 3. RECEIVED BY | DATE | TIME |

COMMENTS

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



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO: M. SPERANZA **DATE:** JUNE 17, 2004
FROM: D. SCHLOER **CC:** DV FILE
SUBJECT: ORGANIC DATA VALIDATION – VOC / SVOC / PAH / TPH
CTO 078, NAS CECIL FIELD
SDG: F24092

SAMPLES: 3 / Solid / VOC / PAH / TPH

CEF-57-TW17-05

CEF-57-TW18-04

CEF-57-TW-19-04

1 / Solid / SVOC

CEF-1848-SS01-01

Overview

The sample set for CTO 078; NAS Cecil Field; SDG F24092 consists of four (4) solid environmental samples. As detailed above, the samples were analyzed for selected Volatile Organic Compounds (VOCs), Target Compound List (TCL) Semivolatile Organic Compounds (SVOCs), Polynuclear Aromatic Hydrocarbons (PAHs) and Total Petroleum Hydrocarbons (TPH). No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on May 10th, 2004 and analyzed by Accutest Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using U.S. EPA Test Methods for Evaluating Solid Waste (SW-846) Methods 8260B, 8270C and 8310, and Florida-Petroleum Residual Organic (FL-PRO) analytical and reporting protocol.

The data contained in this SDG were validated with regard to the following parameters:

- * • Data completeness
- * • Holding times
- * • Initial and continuing calibration
- * • Blank results
- * • Detection Limits

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

VOC

The samples were analyzed for the selected VOCs: benzene, toluene, ethylbenzene and xylenes. No data quality issues were noted.

SVOC

No data quality issues were noted.

PAH

No data quality issues were noted.

TPH

No data quality issues were noted.

Additional Comments

Nondetected organic compounds were reported at the chemical-specific method detection limit (MDLs) values; positive results greater than the MDL but less than the method Reporting Limit (RL) were qualified as estimated (J) due to uncertainty near the detection limit.

It should be noted that the sample matrix code on the Chain of Custody (COC) documentation was incomplete.

The percent solids content in the electronic database did not concur with those provided on the sample Form Is. The reviewer corrected the electronic database to match the % solid values shown on the sample Form Is. This is noted as a data completeness issue.

EXECUTIVE SUMMARY

Laboratory Performance Issues: The percent solids content in the electronic database did not concur with those provided on the sample Form Is.

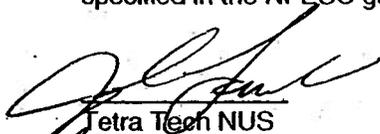
Other Factors Affecting Data Quality: The laboratory noted noncompliances for the Matrix Spike/Matrix Spike Duplicate sample associated with the environmental samples analyzed and reported in this SDG; however, no data validation action was taken on this basis as only a limited data review is was performed.

MEMO TO: M. SPERANZA
DATE: 06/17/04

PAGE: 3
SDG: F24092

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99) and the NFESC guidelines 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)."



Tetra Tech NUS

Douglas Schloer
Chemist/Data Validator



TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

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

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

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

PROJ_NO: 0039

SDG: F24092 MEDIA: SOIL DATA FRACTION: OS

nsample CEF-1848-SS01-01
 samp_date 5/10/2004
 lab_id F24092-4
 qc_type NM
 units UG/KG
 Pct_Solids 91.0
 DUP_OF:

nsample CEF-1848-SS01-01
 samp_date 5/10/2004
 lab_id F24092-4
 qc_type NM
 units UG/KG
 Pct_Solids 91.0
 DUP_OF:

nsample CEF-1848-SS01-01
 samp_date 5/10/2004
 lab_id F24092-4
 qc_type NM
 units UG/KG
 Pct_Solids 91.0
 DUP_OF:

| Parameter | Result | Val Qual | Qual Code |
|------------------------------|--------|----------|-----------|
| 1,2,4-TRICHLOROBENZENE | 36 | U | |
| 1,2-DICHLOROBENZENE | 36 | U | |
| 1,3-DICHLOROBENZENE | 36 | U | |
| 1,4-DICHLOROBENZENE | 36 | U | |
| 2,2'-OXYBIS(1-CHLOROPROPANE) | 36 | U | |
| 2,4,5-TRICHLOROPHENOL | 36 | U | |
| 2,4,6-TRICHLOROPHENOL | 36 | U | |
| 2,4-DICHLOROPHENOL | 36 | U | |
| 2,4-DIMETHYLPHENOL | 36 | U | |
| 2,4-DINITROPHENOL | 360 | U | |
| 2,4-DINITROTOLUENE | 72 | U | |
| 2,6-DINITROTOLUENE | 72 | U | |
| 2-CHLORONAPHTHALENE | 36 | U | |
| 2-CHLOROPHENOL | 36 | U | |
| 2-METHYLNAPHTHALENE | 36 | U | |
| 2-METHYLPHENOL | 36 | U | |
| 2-NITROANILINE | 90 | U | |
| 2-NITROPHENOL | 36 | U | |
| 3&4-METHYLPHENOL | 36 | U | |
| 3,3'-DICHLOROBENZIDINE | 180 | U | |
| 3-NITROANILINE | 90 | U | |
| 4,6-DINITRO-2-METHYLPHENOL | 72 | U | |
| 4-BROMOPHENYL PHENYL ETHER | 36 | U | |
| 4-CHLORO-3-METHYLPHENOL | 36 | U | |
| 4-CHLOROANILINE | 270 | U | |
| 4-CHLOROPHENYL PHENYL ETHER | 36 | U | |
| 4-NITROANILINE | 90 | U | |
| 4-NITROPHENOL | 360 | U | |
| ACENAPHTHENE | 36 | U | |
| ACENAPHTHYLENE | 36 | U | |
| ANTHRACENE | 36 | U | |
| BENZO(A)ANTHRACENE | 36 | U | |

| Parameter | Result | Val Qual | Qual Code |
|----------------------------|--------|----------|-----------|
| BENZO(A)PYRENE | 36 | U | |
| BENZO(B)FLUORANTHENE | 36 | U | |
| BENZO(G,H,I)PERYLENE | 72 | U | |
| BENZO(K)FLUORANTHENE | 36 | U | |
| BENZOIC ACID | 540 | U | |
| BENZYL ALCOHOL | 36 | U | |
| BIS(2-CHLOROETHOXY)METHANE | 36 | U | |
| BIS(2-CHLOROETHYL)ETHER | 72 | U | |
| BIS(2-ETHYLHEXYL)PHTHALATE | 180 | U | |
| BUTYL BENZYL PHTHALATE | 90 | U | |
| CARBAZOLE | 36 | U | |
| CHRYSENE | 36 | U | |
| DIBENZO(A,H)ANTHRACENE | 72 | U | |
| DIBENZOFURAN | 36 | U | |
| DIETHYL PHTHALATE | 90 | U | |
| DIMETHYL PHTHALATE | 90 | U | |
| DI-N-BUTYL PHTHALATE | 90 | U | |
| DI-N-OCTYL PHTHALATE | 180 | U | |
| FLUORANTHENE | 36 | U | |
| FLUORENE | 36 | U | |
| HEXACHLOROBENZENE | 36 | U | |
| HEXACHLOROBUTADIENE | 72 | U | |
| HEXACHLOROCYCLOPENTADIENE | 72 | U | |
| HEXACHLOROETHANE | 72 | U | |
| INDENO(1,2,3-CD)PYRENE | 72 | U | |
| ISOPHORONE | 36 | U | |
| NAPHTHALENE | 36 | U | |
| NITROBENZENE | 36 | U | |
| N-NITROSO-DI-N-PROPYLAMINE | 72 | U | |
| N-NITROSODIPHENYLAMINE | 36 | U | |
| PENTACHLOROPHENOL | 360 | U | |
| PHENANTHRENE | 36 | U | |

| Parameter | Result | Val Qual | Qual Code |
|-----------|--------|----------|-----------|
| PHENOL | 36 | U | |
| PYRENE | 72 | U | |

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Report of Analysis

| | |
|---|--------------------------------|
| Client Sample ID: CEF-1848-SS01-01 | |
| Lab Sample ID: F24092-4 | Date Sampled: 05/10/04 |
| Matrix: SO - Soil | Date Received: 05/12/04 |
| Method: SW846 8270C SW846 3550B | Percent Solids: 91.0 |
| Project: NAS Cecil Field-CTO 78 | |

| Run # | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------|-----------|----|----------|----|-----------|------------|------------------|
| Run #1 | W019995.D | 1 | 05/17/04 | ME | 05/14/04 | OP10439 | SW1052 |
| Run #2 | | | | | | | |

| Run # | Initial Weight | Final Volume |
|--------|----------------|--------------|
| Run #1 | 30.5 g | 1.0 ml |
| Run #2 | | |

ABN TCL List

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|----------|----------------------------|--------|-----|-----|-------|---|
| 65-85-0 | Benzoic acid | ND | 900 | 540 | ug/kg | |
| 95-57-8 | 2-Chlorophenol | ND | 180 | 36 | ug/kg | |
| 59-50-7 | 4-Chloro-3-methyl phenol | ND | 180 | 36 | ug/kg | |
| 120-83-2 | 2,4-Dichlorophenol | ND | 180 | 36 | ug/kg | |
| 105-67-9 | 2,4-Dimethylphenol | ND | 180 | 36 | ug/kg | |
| 51-28-5 | 2,4-Dinitrophenol | ND | 900 | 360 | ug/kg | |
| 534-52-1 | 4,6-Dinitro-o-cresol | ND | 360 | 72 | ug/kg | |
| 95-48-7 | 2-Methylphenol | ND | 180 | 36 | ug/kg | |
| | 3&4-Methylphenol | ND | 180 | 36 | ug/kg | |
| 88-75-5 | 2-Nitrophenol | ND | 180 | 36 | ug/kg | |
| 100-02-7 | 4-Nitrophenol | ND | 900 | 360 | ug/kg | |
| 87-86-5 | Pentachlorophenol | ND | 900 | 360 | ug/kg | |
| 108-95-2 | Phenol | ND | 180 | 36 | ug/kg | |
| 95-95-4 | 2,4,5-Trichlorophenol | ND | 180 | 36 | ug/kg | |
| 88-06-2 | 2,4,6-Trichlorophenol | ND | 180 | 36 | ug/kg | |
| 83-32-9 | Acenaphthene | ND | 180 | 36 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 180 | 36 | ug/kg | |
| 120-12-7 | Anthracene | ND | 180 | 36 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 180 | 36 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 180 | 36 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 180 | 36 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 180 | 72 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 180 | 36 | ug/kg | |
| 101-55-3 | 4-Bromophenyl phenyl ether | ND | 180 | 36 | ug/kg | |
| 85-68-7 | Butyl benzyl phthalate | ND | 360 | 90 | ug/kg | |
| 100-51-6 | Benzyl Alcohol | ND | 180 | 36 | ug/kg | |
| 91-58-7 | 2-Chloronaphthalene | ND | 180 | 36 | ug/kg | |
| 106-47-8 | 4-Chloroaniline | ND | 720 | 270 | ug/kg | |
| 86-74-8 | Carbazole | ND | 180 | 36 | ug/kg | |
| 218-01-9 | Chrysene | ND | 180 | 36 | ug/kg | |
| 111-91-1 | bis(2-Chloroethoxy)methane | ND | 180 | 36 | ug/kg | |
| 111-44-4 | bis(2-Chloroethyl)ether | ND | 180 | 72 | ug/kg | |

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

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

Report of Analysis

| | | | |
|-------------------|-------------------------|-----------------|----------|
| Client Sample ID: | CEF-1848-SS01-01 | Date Sampled: | 05/10/04 |
| Lab Sample ID: | F24092-4 | Date Received: | 05/12/04 |
| Matrix: | SO - Soil | Percent Solids: | 91.0 |
| Method: | SW846 8270C SW846 3550B | | |
| Project: | NAS Cecil Field-CTO 78 | | |

ABN TCL List

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|-----------|-----------------------------|--------|-----|-----|-------|---|
| 108-60-1 | bis(2-Chloroisopropyl)ether | ND | 180 | 36 | ug/kg | |
| 7005-72-3 | 4-Chlorophenyl phenyl ether | ND | 180 | 36 | ug/kg | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 180 | 36 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 180 | 36 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 180 | 36 | ug/kg | |
| 121-14-2 | 2,4-Dinitrotoluene | ND | 180 | 72 | ug/kg | |
| 606-20-2 | 2,6-Dinitrotoluene | ND | 180 | 72 | ug/kg | |
| 91-94-1 | 3,3'-Dichlorobenzidine | ND | 360 | 180 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 180 | 72 | ug/kg | |
| 132-64-9 | Dibenzofuran | ND | 180 | 36 | ug/kg | |
| 84-74-2 | Di-n-butyl phthalate | ND | 360 | 90 | ug/kg | |
| 117-84-0 | Di-n-octyl phthalate | ND | 360 | 180 | ug/kg | |
| 84-66-2 | Diethyl phthalate | ND | 360 | 90 | ug/kg | |
| 131-11-3 | Dimethyl phthalate | ND | 360 | 90 | ug/kg | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | ND | 360 | 180 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 180 | 36 | ug/kg | |
| 86-73-7 | Fluorene | ND | 180 | 36 | ug/kg | |
| 118-74-1 | Hexachlorobenzene | ND | 180 | 36 | ug/kg | |
| 87-68-3 | Hexachlorobutadiene | ND | 180 | 72 | ug/kg | |
| 77-47-4 | Hexachlorocyclopentadiene | ND | 180 | 72 | ug/kg | |
| 67-72-1 | Hexachloroethane | ND | 180 | 72 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 180 | 72 | ug/kg | |
| 78-59-1 | Isophorone | ND | 180 | 36 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 180 | 36 | ug/kg | |
| 88-74-4 | 2-Nitroaniline | ND | 360 | 90 | ug/kg | |
| 99-09-2 | 3-Nitroaniline | ND | 360 | 90 | ug/kg | |
| 100-01-6 | 4-Nitroaniline | ND | 360 | 90 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 180 | 36 | ug/kg | |
| 98-95-3 | Nitrobenzene | ND | 180 | 36 | ug/kg | |
| 621-64-7 | N-Nitroso-di-n-propylamine | ND | 180 | 72 | ug/kg | |
| 86-30-6 | N-Nitrosodiphenylamine | ND | 180 | 36 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 180 | 36 | ug/kg | |
| 129-00-0 | Pyrene | ND | 180 | 72 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 180 | 36 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|-----------|----------------------|--------|--------|---------|
| 367-12-4 | 2-Fluorophenol | 72% | | 45-114% |
| 4165-62-2 | Phenol-d5 | 73% | | 44-124% |
| 118-79-6 | 2,4,6-Tribromophenol | 76% | | 50-128% |

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

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

Report of Analysis

| | |
|---|--------------------------------|
| Client Sample ID: CEF-1848-SS01-01 | |
| Lab Sample ID: F24092-4 | Date Sampled: 05/10/04 |
| Matrix: SO - Soil | Date Received: 05/12/04 |
| Method: SW846 8270C SW846 3550B | Percent Solids: 91.0 |
| Project: NAS Cecil Field-CTO 78 | |

ABN TCL List

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|-----------|----------------------|--------|--------|---------|
| 4165-60-0 | Nitrobenzene-d5 | 70% | | 41-123% |
| 321-60-8 | 2-Fluorobiphenyl | 72% | | 46-122% |
| 1718-51-0 | Terphenyl-d14 | 81% | | 45-135% |

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

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

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