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NAS CECIL FIELD, FL  
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SAMPLING AND ANALYSIS REPORT FOR BUILDING 605 BASE REALIGNMENT AND  
CLOSURE NAS CECIL FIELD FL  
12/3/2002  
TETRA TECH NUS INC

**Sampling and Analysis Report**  
for  
**Building 605**  
**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

December 2002

REVISION 1  
DECEMBER 2002

**SAMPLING AND ANALYSIS REPORT  
FOR  
BUILDING 605  
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**

**DECEMBER 2002**

**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**



The professional opinions rendered in this decision document identified as Sampling and Analysis Report for Building 605, 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: 12/3/02

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: December 3, 2002

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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## ACRONYMS

ABB-ES	ABB Environmental Services, Inc.
BCT	BRAC Cleanup Team
BEI	Bechtel Environmental, Inc.
bgs	Below ground surface
BRAC	Base Realignment and Closure
CH2MHill	CH2MHill Constructors, Inc.
CLEAN	Comprehensive Long-Term Environmental Action Navy
CSR	Confirmatory Sampling Report
CTO	Contract Task Order
EBS	Environmental Baseline Survey
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
GCTL	Groundwater cleanup target level
HLA	Harding Lawson Associates
KAG	Kerosene Analytical Group
NAS	Naval Air Station
OVA	Organic vapor analyzer
SAO	Sampling and Analysis Outline
S&AR	Sampling and Analysis Report
SAR	Site Assessment Report (FDEP Petroleum Tank Regulations)
SCTL	Soil cleanup target level
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
SRR	Source Removal Report
TCL	Target Compound List
TtNUS	Tetra Tech NUS, Inc.
UST	Underground storage tank
VOC	Volatile organic compound

## 1.0 INTRODUCTION

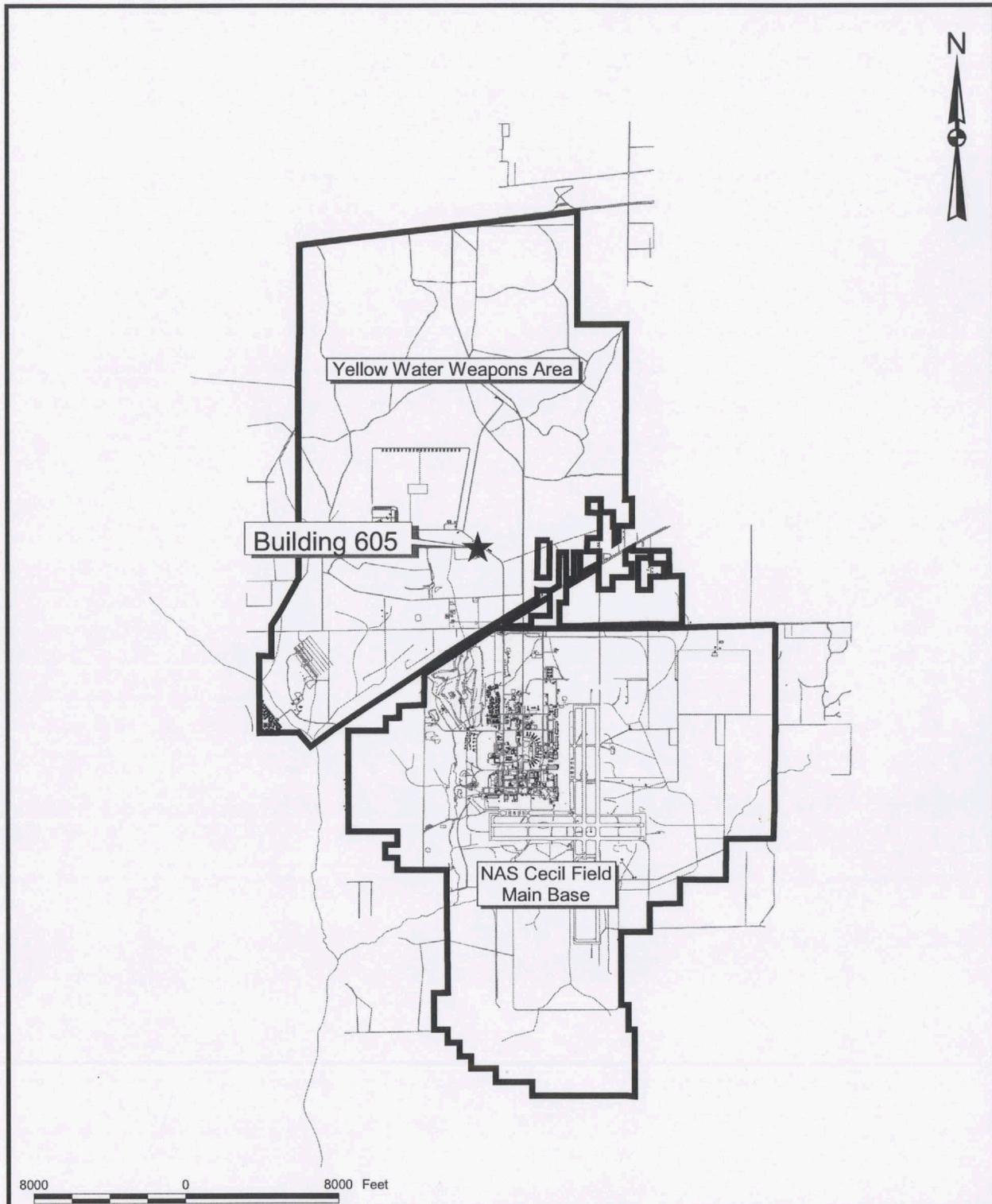
This Sampling and Analysis Report (S&AR) for Building 605 at Naval Air Station (NAS) Cecil Field, Jacksonville, Florida has been prepared by Tetra Tech NUS, Inc. (TtNUS) for the Department of the Navy Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM). This document presents new information and conclusions and supercedes the previous Sampling and Analysis Outline (SAO) (ABB, 1996) prepared for this site. The work was conducted under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, Contract Number N62467-94-D-0888, Contract Task Order (CTO) 0078.

Building 605 is located along the former Main Road in the Yellow Water Weapons Area about 4,500 feet north of Normandy Boulevard, as shown on Figures 1-1 and 1-2. Building 605 was a Marine Barracks (ABB, 1996), and a 3,000-gallon fuel oil underground storage tank (UST), Tank 605, was associated with the building. In the Environmental Baseline Survey (EBS) (ABB, 1994), the building was originally classified as Grey because of the presence of the UST and asbestos-containing materials (ABB, 1994). Building 605 was investigated under the both the Base Realignment and Closure (BRAC) program and the petroleum tank program. These investigations are summarized below.

The SAO (ABB, 1996) recommended that no sampling and analysis was necessary and that the UST was to be investigated under the petroleum tank program. The SAO made no changes in the classification pending resolution of the UST investigation and asbestos-related issues although asbestos-related issues should not have been discussed in the SAO. [Asbestos issues were described in an Asbestos Management Plan (Kemron, 1995). The City of Jacksonville plans to demolish the building and will remove the asbestos prior to demolition. The presence of asbestos does not affect the color classification of a site.]

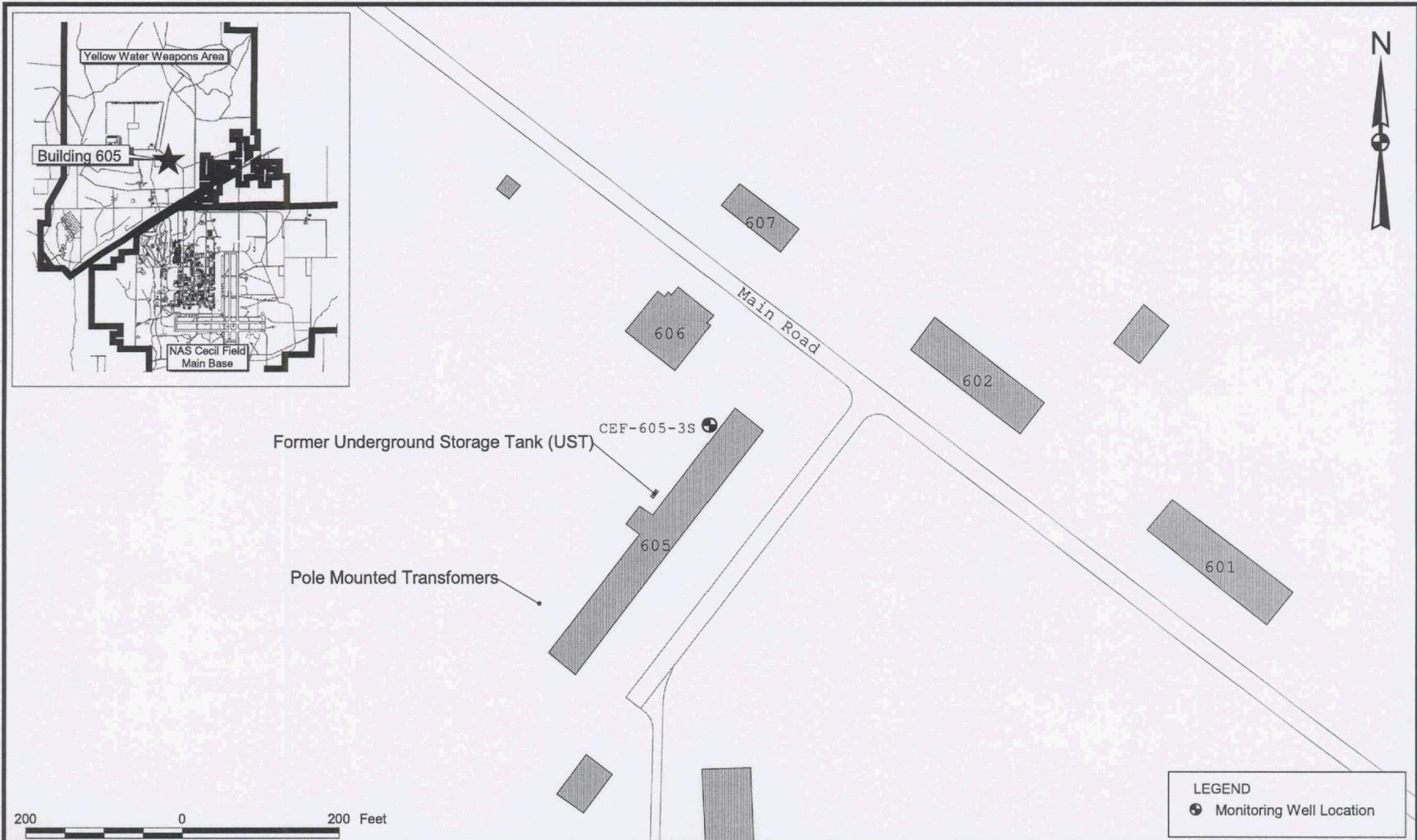
In January 1997, ABB Environmental Services, Inc. (ABB-ES) began a confirmatory sampling investigation of Tank 605 (ABB, 1997). Four soil borings were advanced to the water table, and soil samples were collected and screened in the field with an organic vapor analyzer (OVA). One monitoring well was installed; however, the presence of free product in the well prevented the collection of a groundwater sample for analysis. In April 1997, Tank 605 was removed by Bechtel Environmental, Inc. (BEI), but no contaminated soil was removed. Based on the observations, the Confirmatory Sampling Report (CSR) recommended that a site assessment of Tank 605 be performed to delineate the extent of contaminated soil, free product, and groundwater contamination (ABB, 1997).

In October 1997, Harding Lawson Associates (HLA) (formerly ABB-ES) began the assessment of Tank 605 (HLA, 1998). Fifteen soil borings were advanced to the water table, three shallow and one deep monitoring wells were installed, and three soil samples and four groundwater samples were collected for laboratory



DRAWN BY MJJ DATE 30Sept02			GENERAL LOCATION MAP BUILDING 605 SAMPLING AND ANALYSIS REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0039	
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COST/SCHEDULE-AREA				APPROVED BY	DATE
SCALE AS NOTED				DRAWING NO. FIGURE 1-1	REV 0

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LEGEND	
	Monitoring Well Location

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**SITE LOCATION MAP**  
**BUILDING 605**  
**SAMPLING AND ANALYSIS REPORT**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

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analysis. During soil boring, soil samples were collected and screened in the field with an OVA. Laboratory samples were analyzed for Florida Department of Environmental Protection (FDEP) Kerosene Analytical Group (KAG) parameters. This investigation delineated the extent of contaminated soil based on OVA readings, but no KAG contaminants were detected at concentrations greater than FDEP soil cleanup target levels (SCTLs). Free product was measured in one shallow well, but no KAG contaminants were detected at concentrations greater than FDEP groundwater cleanup target levels (GCTLs). Based on the presence of the free product, the Site Assessment Report (SAR) recommended a source removal (HLA, 1998).

In January 1999, CH2MHill Constructors, Inc. (CH2MHill) excavated and disposed of 874 tons of petroleum-contaminated soil identified by OVA measurements in the SAR. The depth of the excavation was about 7 feet below ground surface (bgs) and about 1 foot below the water table. A gas line that ran through the area of contaminated soil prevented the complete removal of the soil as delineated. Post-excavation laboratory samples confirmed that the contaminated soil was removed. One shallow monitoring well that was abandoned during the source removal was replaced after the excavation was backfilled. No free product was observed during soil excavation activities (CH2MHill, 1999).

Based on the results and conclusions of the Source Removal Report (SRR) (CH2MHill, 1999) and the analytical results in the SAR (HLA, 1998), a revised SAR (SAR Revision 1) submitted by HLA (HLA, 1999) recommended no further action for Tank 605. Based on this recommendation, the color code of Building 605 was changed by the Base Closure Team (BCT) in November 1999 to Blue to denote that this was an area where release, disposal, and/or migration of petroleum products occurred and that remedial actions to protect human health and the environment were taken. The designation was later revised to Blue (Dark Green).

However, in October 2000, the NAS Cecil Field database was queried for groundwater contaminant results greater than GCTLs. Chloroethane was identified in well CEF-605-3S at concentrations of 17 µg/L and 20 µg/L in a duplicate sample, which are greater than the GCTL of 12 µg/L. Chloroethane is not in the FDEP KAG and was not previously reported. However, the compound was analyzed for as part of the volatile organic compounds (VOCs) portion of the KAG and was included in the electronic laboratory data report imported into the database.

Therefore, further investigation of the groundwater was required to determine the extent of chloroethane contamination. The additional investigations are described in the subsequent sections of this S&AR. The results of the additional investigations indicate that no further action is needed at this site.

## 2.0 FIELD ACTIVITIES

Field activities conducted at Building 605 included:

1. Sampling to confirm the newly-identified database results
2. Air sparging
3. Post-sparging monitoring

### 2.1 CONFIRMATION SAMPLING

Based on a BCT decision (BCT Meeting Minutes October 25, 2000, Minute Number 1285), a groundwater sample was collected from CEF-605-3S and analyzed for target compound list (TCL) VOCs in November 2000. The chloroethane concentration was 19 µg/L, which exceeded the GCTL of 12 µg/L and confirmed the 1998 result. No other VOCs were detected. Based on this result, the BCT decided to perform an air sparging treatability test near well CEC-605-3S (BCT Meeting Minutes December 7, 2000, Minute Number 1317).

### 2.2 AIR SPARGING TREATABILITY STUDY AND SAMPLING

In March 2001, an air sparging well, CEF-605-AS01, was installed about 5 feet northeast of CEF-605-3S. Figure 2-1 shows the location of the air sparging well. Air was injected into the well for about 12 hours on April 4, 2001. The sampling program for the air sparging test called for a groundwater sample to be collected from CEF-605-03S prior to sparging, one week after sparging, and one month after sparging. The samples were analyzed for TCL VOCs (TtNUS, 2001).

The chloroethane concentration in the sample collected just before the test was 13.3 µg/L. The chloroethane concentration in the sample collected one week after the test, April 11, 2001, was 1.2 µg/L. But, the chloroethane concentrations in the sample and duplicate collected one month after the test, May 8, 2001, were 29.4 and 30.6 µg/L. No other VOCs were detected.

Based on these results, the BCT decided to collect groundwater samples from two other Building 605 wells in addition to CEF-605-03S to delineate the extent of the chloroethane contamination (BCT Meeting Minutes May 16, 2001, Minute Number 1481).

### 2.3 POST-SPARGING SAMPLING

In July 2001, wells CEF-605-03S, CEF-605-04S, and CEF-605-06S were sampled and analyzed for TCL VOCs. Well CEF-605-04S is about 50 feet southeast (cross-gradient) of CEF-605-03S, and well

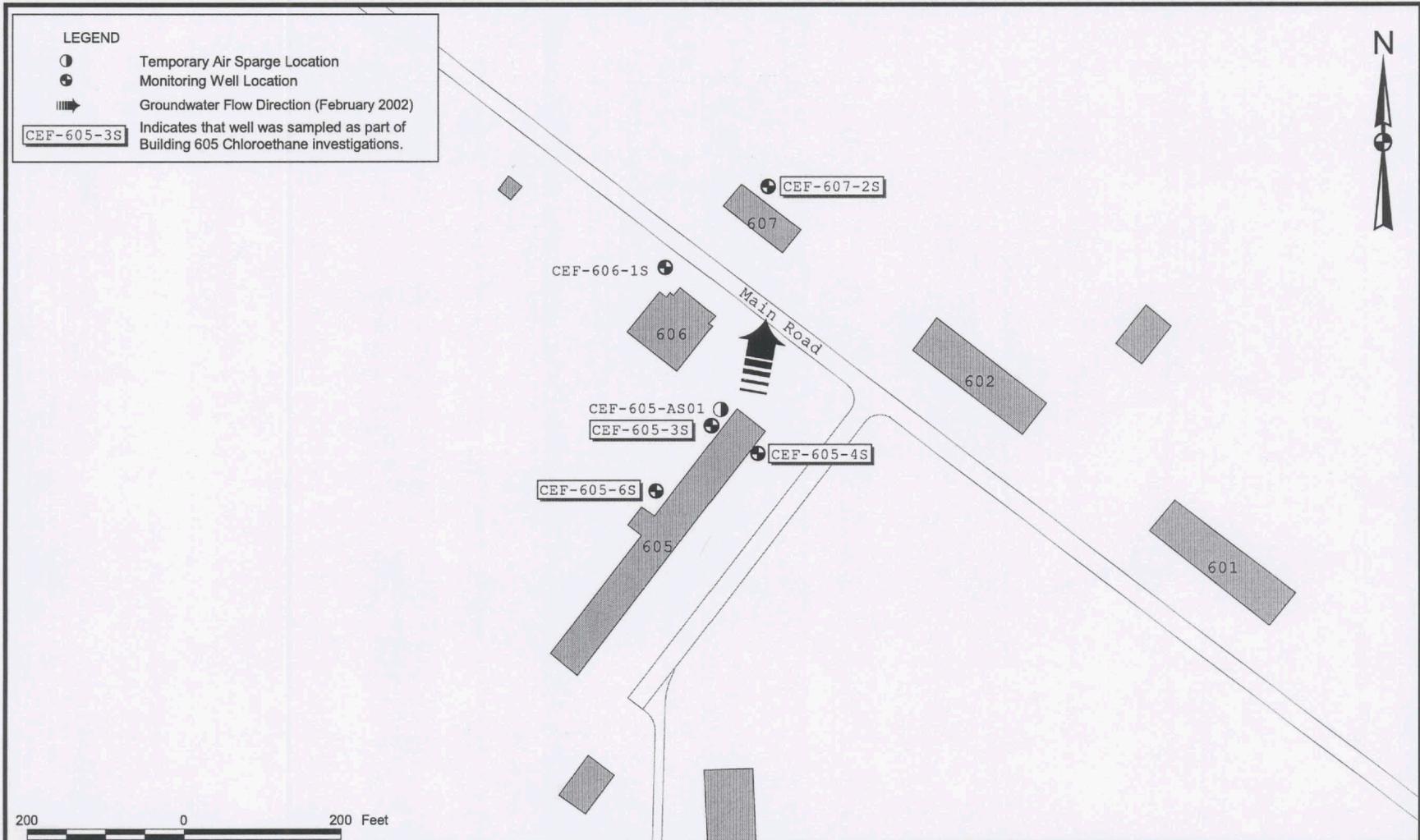
CEF-605-06S is about 100 feet southwest (upgradient) of CEF-605-03S (TtNUS, 2001). Figure 2-1 shows the locations of the wells.

Chloroethane concentrations in the sample and duplicate collected from CEF-605-3S were 19 and 17.6 µg/L, respectively. No VOCs were detected in the samples from CEF-605-04S, and CEF-605-06S.

Based on the presence of the low concentrations of chloroethane over a small area, the BCT decided that natural attenuation through dilution, dispersion, and degradation could be evaluated with a long-term groundwater monitoring program (BCT Meeting Minutes September 10, 2001, Minute Number 1559). A Groundwater Monitoring Work Plan (TtNUS, 2002) prepared for Building 605 identified semi-annual collection of groundwater samples from CEF-605-03S for TCL VOC analysis. The BCT also agreed that if the chloroethane concentration of groundwater samples was less than the GCTL for two consecutive semi-annual events, then no further action would be required at Building 605 (BCT Meeting Minutes December 7, 2000, Minute Number 1317 and BCT Meeting Minutes March 19, 2002, Minute Number 1285).

The chloroethane concentration of the first sample collected under the monitoring program in February 2002 was 8.8 µg/L, which is less than the GCTL, and the chloroethane concentration of the sample collected in July 2002 was 10.8 µg/L. Because these concentrations were less than the GCTL, no further action was recommended. However, FDEP required that one downgradient well be sampled and analyzed for chloroethane (BCT Meeting Minutes March 19, 2002, Minute Number 1649 and Decision Number 564 and BCT Meeting Minutes August 28, 2002, Minute Number 1760). Based on the groundwater flow direction from water table measurements made in February 2002, well CEF-607-02S, which is across the former Main Road and to the north of Building 607, was sampled in September 2002. Figure 2-1 shows the location of CEF-607-02S. No VOCs were detected in the sample from CEF-607-02S.

Laboratory analytical data from the samples collected in 2001 and 2002 are included in Appendix A.



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SAMPLE LOCATION MAP  
BUILDING 605  
SAMPLING AND ANALYSIS REPORT  
NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA

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### 3.0 DATA EVALUATION

Investigations at Building 605 have demonstrated that contaminants are not present at concentrations greater than FDEP SCTLs and GCTLs. Petroleum-contaminated soil and a UST have been removed from the site. Chloroethane concentrations in the groundwater are less than the GCTL and, therefore, do not represent a risk to human health or the environment. Because contaminant concentrations are not greater than SCTLs and GCTLs, no human health or ecological risk evaluations need to be performed.

Groundwater chloroethane concentrations for samples from well CEF-605-03S are summarized on Table 3-1. Historic chloroethane results are also summarized in Figure 3-1.

TABLE 3-1

SUMMARY OF CHLOROETHANE RESULTS IN GROUNDWATER  
BUILDING 605 SAMPLING AND ANALYSIS REPORT  
NAVAL AIR STATION CECIL FIELD  
JACKSONVILLE, FLORIDA

WELL	SAMPLING DATE	CHLOROETHANE (ug/L)	
CEF-605-03S	July-98	Sample	17
		Duplicate	20
	November-00		19
	April-01 <sup>(1)</sup>		13.3
	April-01 <sup>(2)</sup>		1.2 J
	May-01 <sup>(3)</sup>	Sample	29.4
		Duplicate	30.6
	July-01	Sample	19
		Duplicate	17.6
	February-02		8.8
	July-02		10.8
CEF-605-04S	July-01	5 U	
CEF-605-06S	July-01	5 U	
CEF-607-02S	September-02	5 U	
TARGET CLEANUP GOAL *		12	

Notes:

U = Not detected at or above detection limit (associated value).

J = Estimated concentration.

Bolded values exceed detection limit.

Shaded values exceed target cleanup goal.

\* Florida Administrative Code (FAC) 62-777 (FDEP, 1999).

1 - April 4, 2001 Treatability Study Sample. Sample collected before start-up of Air Sparging Treatability Test.

2 - April 11, 2001 Treatability Study Sample. Sample collected one week after Air Sparging Treatability Test.

3 - May 8, 2001 Treatability Study Sample. Sample collected one month after Air Sparging Treatability Test.

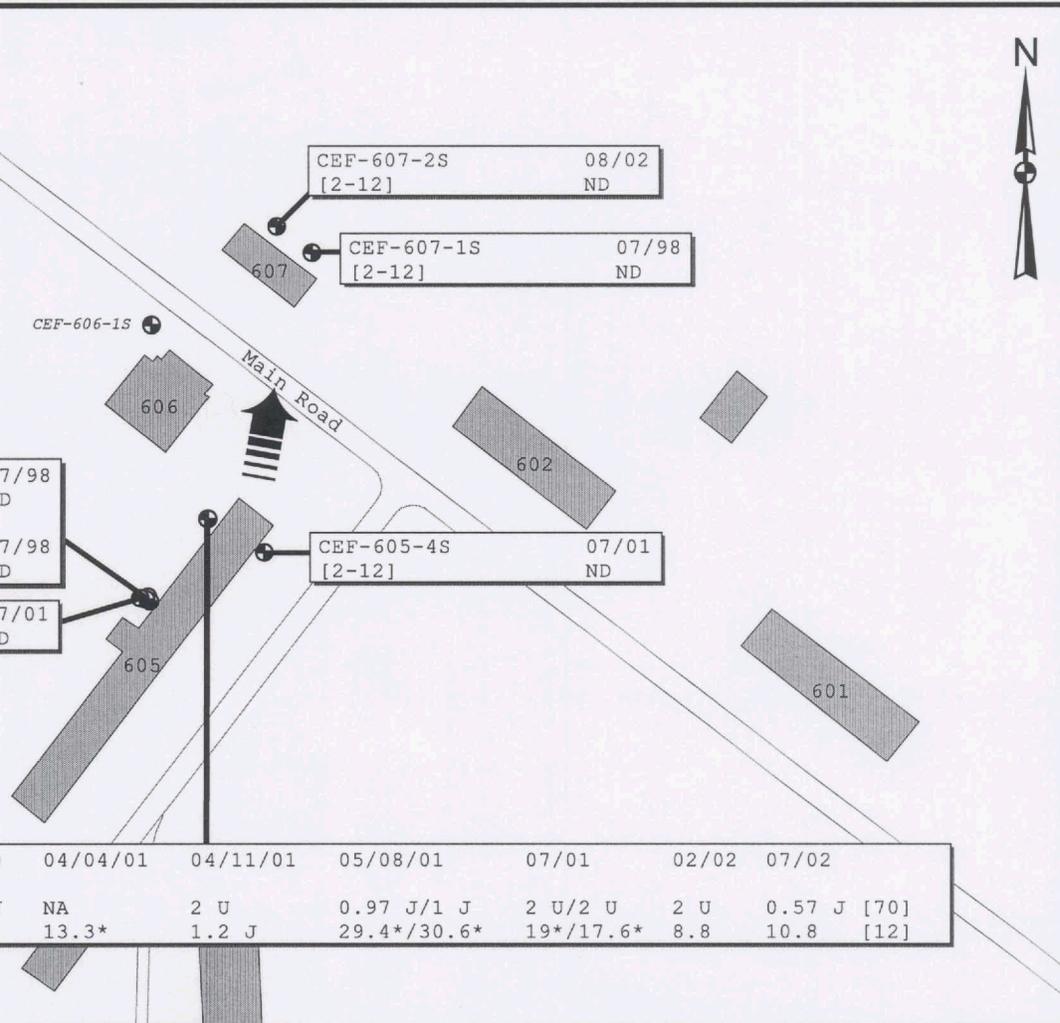


**LEGEND**

- Monitoring Well Location
- ▬ Groundwater Flow Direction (February 2002)

CEF-080-07S	Sample ID
[5-10]	Screen Interval
Inorganics (ug/L)	FDEP GCTL
ALUMINUM 36400 [13100]	Detection Concentration Parameter

- = Concentration exceeds target cleanup goal.
- J = Estimated concentration.
- U = Not detected at or above method detection limit (associated value).
- NA = Not analyzed
- ND = None detected
- [5-15] = Well screen interval in feet below ground surface
- All results in ug/L
- Duplicate sample results reported as sample/duplicate.



CEF-605-2S [2-12]	07/98 ND
CEF-605-5D [25-30]	07/98 ND
CEF-605-6S [2-12]	07/01 ND

CEF-607-2S [2-12]	08/02 ND
CEF-607-1S [2-12]	07/98 ND

CEF-605-3S [2-12]	07/98	11/00	04/04/01	04/11/01	05/08/01	07/01	02/02	07/02
1,1-DICHLOROETHANE	2.9/2.4	1.0 J	NA	2 U	0.97 J/1 J	2 U/2 U	2 U	0.57 J [70]
CHLOROETHANE	17*/20*	19*	13.3*	1.2 J	29.4*/30.6*	19*/17.6*	8.8	10.8 [12]

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SCALE	AS NOTED



**SAMPLING LOCATION AND EXCEEDANCE MAP**  
**BUILDING 605**  
**SAMPLING AND ANALYSIS REPORT**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

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## **4.0 CONCLUSIONS AND RECOMMENDATION**

Investigations at Building 605 have demonstrated that contaminants are not present at concentrations greater than FDEP SCTLs and GCTLs and that the site does not represent a risk to human health or the environment.

Based upon these conclusions, the recommendation for Building 605 is no further action. It is also recommended that the color code for Building 605 be classified to 4/Dark Green to denote that this was an area where release, disposal, and/or migration of hazardous substances occurred and that remedial actions to protect human health and the environment were taken.

## **REFERENCES**

ABB-ES (ABB Environmental Services, Inc.), 1994. Base Realignment and Closure Environmental Baseline Survey Report, Naval Air Station Cecil Field, Jacksonville, Florida, Prepared for SOUTHNAVFACENGCOC, Charleston, SC. November.

ABB-ES, 1996. Sampling and Analysis Outline, Building 605, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVFACENGCOC, Charleston, SC. March.

ABB-ES, 1997. Confirmatory Sampling Report, Building 605, Tank 605, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVFACENGCOC, Charleston, SC. October.

CH2Mhill (CH2Mhill Constructors, Inc.), 1999. Source Removal Report, UST 605, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVFACENGCOC, Charleston, SC. June.

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

HLA (Harding Lawson Associates), 1998. Site Assessment Report, Building 605, Tank 605, Revision 0.0, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVFACENGCOC, Charleston, SC. October.

HLA, 1999. Site Assessment Report, Building 605, Tank 605, Revision 1.0, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVFACENGCOC, Charleston, SC. August.

Kemron (Kemron Environmental Services, Inc.), 1995. Asbestos Management Plan, Building 605, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVFACENGCOC, Charleston, SC. October.

TtNUS (Tetra Tech NUS, Inc.), 2001. Air Sparging Treatability Study Work Plan, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVFACENGCOC, Charleston, SC. March.

TtNUS, 2002. Groundwater Sampling Work Plan, Building 605, Naval Air Station Cecil Field, Jacksonville, Florida. Prepared for SOUTHNAVFACENGCOC, Charleston, SC. January.

**APPENDIX A**

**LABORATORY ANALYTICAL DATA**



MEMO TO: MARK SPERANZA  
DATE: DECEMBER 29, 2000 – PAGE 2

EXECUTIVE SUMMARY

**Laboratory performance:** None.

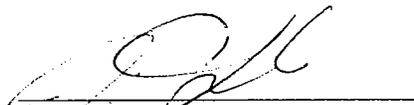
**Other Factors Affecting Data Quality:** None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the NFESC guidelines "Navy IRCDQM" (September 1999). The text of this report has been formulated to address only those problems affecting data quality.

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

  
Justin Orbich

Chemist/Data Validator  
Tetra Tech, NUS

  
Joseph A. Samchuck

Data Validation Quality Assurance Officer  
Tetra Tech, NUS

Attachments:

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

**DATA QUALIFIER DEFINITIONS:**

U - Value is a nondetected result as reported by the laboratory and should not be considered present.

J - Positive result is estimated as a result of a value below the CRQL or a technical noncompliance.

**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 ( $< 2 \times$  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/PCB D% between columns for positive results
  - V = Non-linear calibrations, tuning  $r < 0.995$  (correlation coefficient)
  - W = EMPC result
  - X = Signal to noise response drop
  - Y = % Solid content is less than 30%
-

**APPENDIX A**  
**Qualified Analytical Results**

**CTO078-NAS CECIL FIELD**

**WATER DATA**

Accutest, NJ

SDG: F8096

SAMPLE NUMBER:	CEF-605-3S-01		
SAMPLE DATE:	11/09/00	//	//
LABORATORY ID:	F8096-1		//
QC_TYPE:	NORMAL		
% SOLIDS:	0.0 %	100.0 %	100.0 %
UNITS:	UG/L		
FIELD DUPLICATE OF:			

	RESULT	QUAL	CODE									
<b>VOLATILES</b>												
1,1,1-TRICHLOROETHANE	2	U										
1,1,2,2-TETRACHLOROETHANE	2	U										
1,1,2-TRICHLOROETHANE	2	U										
1,1-DICHLOROETHANE	1	J	P									
1,1-DICHLOROETHENE	2	U										
1,2-DICHLOROETHANE	2	U										
1,2-DICHLOROPROPANE	2	U										
2-HEXANONE	10	U										
4-METHYL-2-PENTANONE	10	U										
ACETONE	50	U										
BENZENE	1	U										
BROMODICHLOROMETHANE	2	U										
BROMOFORM	2	U										
BROMOMETHANE	5	U										
CARBON DISULFIDE	10	U										
CARBON TETRACHLORIDE	2	U										
CHLOROENZENE	2	U										
CHLOROETHANE	19											
CHLOROFORM	2	U										
CHLOROMETHANE	5	U										
CIS-1,2-DICHLOROETHENE	2	U										
CIS-1,3-DICHLOROPROPENE	2	U										
DIBROMOCHLOROMETHANE	2	U										
ETHYLBENZENE	2	U										
METHYL ETHYL KETONE	10	U										
METHYL TERT-BUTYL ETHER	2	U										
METHYLENE CHLORIDE	5	U										
STYRENE	2	U										
TETRACHLOROETHENE	2	U										
TOLUENE	2	U										
TRANS-1,2-DICHLOROETHENE	2	U										
TRANS-1,3-DICHLOROPROPENE	2	U										
TRICHLOROETHENE	2	U										

**CTO078-NAS CECIL FIELD**

**WATER DATA**

**Accutest, NJ**

**SDG: F8096**

SAMPLE NUMBER:	CEF-605-3S-01			
SAMPLE DATE:	11/09/00	//	//	//
LABORATORY ID:	F8096-1			
QC_TYPE:	NORMAL			
% SOLIDS:	0.0 %	100.0 %	100.0 %	100.0 %
UNITS:	UG/L			
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE									
<b>VOLATILES</b>												
VINYL CHLORIDE	1	U										
XYLENES, TOTAL	6	U										

**APPENDIX B**

**Results as Reported by the Laboratory**

<b>Client Sample ID:</b> CEF-605-3S-01	<b>Date Sampled:</b> 11/09/00
<b>Lab Sample ID:</b> F8096-1	<b>Date Received:</b> 11/10/00
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Cecil Field 0039	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B002737.D	1	11/14/00	JG	n/a	n/a	VB93
Run #2							

**VOA TCL List**

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	19.0	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	1.0	2.0	ug/l	J
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	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

<b>Client Sample ID:</b> CEF-605-3S-01	<b>Date Sampled:</b> 11/09/00
<b>Lab Sample ID:</b> F8096-1	<b>Date Received:</b> 11/10/00
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Cecil Field 0039	

**VOA TCL List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	98%		69-128%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	101%		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



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO: M. SPERANZA DATE: APRIL 26, 2001  
FROM: SETH STAFFEN CC: DV FILE  
SUBJECT: ORGANIC DATA VALIDATION – VOA  
CTO 078 – NAS CECIL FIELD  
SDG F9367 / F9419 / F9426

SAMPLES: 4/Aqueous/VOA  
~~SDG F9367 - CEF-007-08S-TS~~ CEF-605-035-TS  
SDG F9419 - CEF-605-GW-3S  
~~SDG F9426 - CEF-007-GW-08S~~

#### OVERVIEW

The sample sets for CTO 078, SDG F9367, F9419, and F9426, Naval Air Station (NAS) Cecil Field; Florida consists of four (4) aqueous environmental samples. The samples in SDGs 9419 and 9426 were analyzed for Target Compound List (TCL) volatile organic compounds. Samples CEF-007-08S-TS and CEF-605-035-TS were analyzed for benzene and chloroethane, respectively. No field duplicate pairs were included in the SDGs.

The samples were collected by Tetra Tech, NUS on April 3-4, 11-12, 2001 and analyzed by Accutest Laboratories. All analyses were performed in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria and analyzed according to SW 846 Method 8260B analytical and reporting protocols. The data in this SDG was validated with regard to the following parameters:

- \* • Data Completeness
- \* • Holding Times
- \* • Initial/continuing calibrations
- \* • Laboratory method/field quality control 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.

The text of this report is formulated to address only gross noncompliances resulting in the rejection of data and the elimination of false positives.

VOA FRACTION

SDG F9367 - All quality control parameters were met for this fraction.

SDG F9419 - The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries (%Rs) were greater than the upper quality control limit for tetrachloroethene. No qualifiers were assigned on this basis.

The initial calibration on 04/18/01 contained a percent relative standard deviation (%RSD) that exceeded the 25% quality control limit but was less than 50%. No qualifiers were assigned on this basis.

SDG F9426 - The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries (%Rs) were greater than the upper quality control limit for tetrachloroethene. No qualifiers were assigned on this basis.

The initial calibration on 04/18/01 contained a percent relative standard deviation (%RSD) that exceeded the 25% quality control limit but was less than 50%. No qualifiers were assigned on this basis.

ADDITIONAL COMMENTS

Positive results below the reporting limit were qualified as estimated (J), due to uncertainty near the detection limit.

The presence of acetone in sample CEF-605-GW-3S is suspected to be a laboratory contaminant despite the absence of the aforementioned compound in the associated method blank. No validation action was taken.

EXECUTIVE SUMMARY

**Laboratory performance:** None

**Other Factors Affecting Data Quality:** None

MEMO TO: M. SPERANZA  
DATE: 04/26/2001- PAGE 3

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the NFESC guidelines "Navy IRCDQM" (September 1999). The text of this report has been formulated to address only those problems affecting data quality.

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

  
Seth Staffen

Environmental Scientist/Data Validator  
Tetra Tech, NUS

  
Joseph A. Samchuck

Data Validation Quality Assurance Officer  
Tetra Tech, NUS

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 (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 ( $< 2 \times$  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
- Y = Percent solids  $< 30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity

**CTO078-NAS CECIL FIELD**  
**WATER DATA**  
 Accutest, NJ  
 SDG: F9367

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

CEF-007-08S-TS  
 04/03/01  
 F9367-1  
 NORMAL  
 0.0 %  
 UG/L

CEF-605-03S-TS  
 04/04/01  
 F9367-2  
 NORMAL  
 0.0 %  
 UG/L

//  
 100.0 %

//  
 100.0 %

	RESULT	QUAL	CODE									
VOLATILES												
BENZENE	2.2											
CHLOROETHANE				13.3								

**CTO078-NAS CECIL FIELD**

**WATER DATA**

**Accutest, NJ**

**SDG: F9419**

SAMPLE NUMBER: CEF-605-GW-3S  
 SAMPLE DATE: 04/11/01  
 LABORATORY ID: F9419-1  
 QC\_TYPE: NORMAL  
 % SOLIDS: 0.0 %  
 UNITS: UG/L  
 FIELD DUPLICATE OF:

//

//

//

100.0 %

100.0 %

100.0 %

	RESULT	QUAL	CODE									
<b>VOLATILES</b>												
1,1,1-TRICHLOROETHANE	2	U										
1,1,2,2-TETRACHLOROETHANE	2	U										
1,1,2-TRICHLOROETHANE	2	U										
1,1-DICHLOROETHANE	2	U										
1,1-DICHLOROETHENE	2	U										
1,2-DICHLOROETHANE	2	U										
1,2-DICHLOROPROPANE	2	U										
2-BUTANONE	10	U										
2-HEXANONE	10	U										
4-METHYL-2-PENTANONE	10	U										
ACETONE	48.7	J	P									
BENZENE	1	U										
BROMODICHLOROMETHANE	2	U										
BROMOFORM	2	U										
BROMOMETHANE	5	U										
CARBON DISULFIDE	10	U										
CARBON TETRACHLORIDE	2	U										
CHLOROENZENE	2	U										
CHLORODIBROMOMETHANE	2	U										
CHLOROETHANE	1.2	J	P									
CHLOROFORM	2	U										
CHLOROMETHANE	5	U										
CIS-1,2-DICHLOROETHENE	2	U										
CIS-1,3-DICHLOROPROPENE	2	U										
ETHYLBENZENE	2	U										
METHYLENE CHLORIDE	5	U										
STYRENE	2	U										
TETRACHLOROETHENE	2	U										
TOLUENE	2	U										
TOTAL XYLENES	6	U										
TRANS-1,2-DICHLOROETHENE	2	U										
TRANS-1,3-DICHLOROPROPENE	2	U										

**CTO078-NAS CECIL FIELD**  
**WATER DATA**  
**Accutest, NJ**  
**SDG: F9419**

SAMPLE NUMBER:	CEF-605-GW-3S			
SAMPLE DATE:	04/11/01	//	//	//
LABORATORY ID:	F9419-1			
QC_TYPE:	NORMAL			
% SOLIDS:	0.0 %	100.0 %	100.0 %	100.0 %
UNITS:	UG/L			
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE									
<b>VOLATILES</b>												
TRICHLOROETHENE	2	U										
VINYL CHLORIDE	1	U										

**APPENDIX B**  
**Results as reported by the Laboratory**

# Report of Analysis

<b>Client Sample ID:</b> CEF-605-03S-TS		<b>Date Sampled:</b> 04/04/01
<b>Lab Sample ID:</b> F9367-2		<b>Date Received:</b> 04/05/01
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B		
<b>Project:</b> NAS Cecil Field 0039		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B004566.D	1	04/09/01	JG	n/a	n/a	VB179
Run #2							

**VOA TCL List**

CAS No.	Compound	Result	RL	Units Q
75-00-3	Chloroethane	13.3	5.0	ug/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	108%		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-605-GW-3S		
Lab Sample ID: F9419-1		Date Sampled: 04/11/01
Matrix: AQ - Ground Water		Date Received: 04/12/01
Method: SW846 8260B		Percent Solids: n/a
Project: NAS Cecil Field 0039		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0003332.D	1	04/17/01	JG	n/a	n/a	VC157
Run #2							

### VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	48.7	50	ug/l	J
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	1.2	5.0	ug/l	J
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	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

<b>Client Sample ID:</b> CEF-605-GW-3S	<b>Date Sampled:</b> 04/11/01
<b>Lab Sample ID:</b> F9419-1	<b>Date Received:</b> 04/12/01
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Cecil Field 0039	

## VOA TCL List

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



Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO: MR. M. SPERANZA DATE: JUNE 14, 2001  
FROM: SETH STAFFEN CC: DV FILE  
SUBJECT: ORGANIC DATA VALIDATION – VOA  
CTO 078 – NAS CECIL FIELD  
SDG F9648  
SAMPLES: 2/Aqueous/VOA  
CEF-605-GW-3S CEF-605-GW-DUP1

### OVERVIEW

The sample sets for CTO 078, SDG F9648 Naval Air Station (NAS) Cecil Field; Florida consisted of two (2) aqueous environmental samples. The samples were analyzed for Target Compound List (TCL) volatile organic compounds. One field duplicate pair was included: CEF-605-GW-3S / CEF-605-GW-DUP1.

The samples were collected by Tetra Tech, NUS on May 8<sup>th</sup>, 2001 and analyzed by Accutest Laboratories. All analyses were performed in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria and analyzed according to SW 846 Method 8260B analytical and reporting protocol. The data in this SDG was validated with regard to the following parameters:

- \* • Data Completeness
- \* • Holding Times
- Initial/continuing calibrations
- \* • Laboratory method/field quality control 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.

The text of this report is formulated to address only gross noncompliances resulting in the rejection of data and the elimination of false positives.

### VOA FRACTION

The initial calibration on 05/09/01 contained RRFs that were less than the 0.05 quality control limit for bromomethane. The aforementioned compound was qualified as rejected, UR, in both samples.

MEMO TO: MR. M SPERANZA  
DATE: 06/14/01- PAGE 2

The continuing calibration on 05/10/01 at 1033 contained a RRF that was less than the 0.05 quality control limit for bromomethane. The aforementioned compound was qualified as rejected, UR, in both samples.

The continuing calibration on 05/10/01 at 1033 contained percent differences (%Ds) that were greater than the 20% quality control limit for styrene and bromoform. No qualifiers were assigned since the reported results were nondetects.

#### ADDITIONAL COMMENTS

Positive results below the reporting limit were qualified as estimated (J), due to uncertainty near the detection limit.

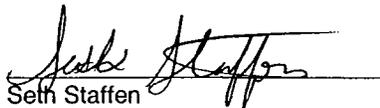
#### EXECUTIVE SUMMARY

**Laboratory performance:** Several compounds exceeded the initial and/or continuing calibration criteria.

**Other Factors Affecting Data Quality:** None

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the NFESC guidelines "Navy IRCDQM" (September 1999). The text of this report has been formulated to address only those problems affecting data quality.

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

  
Seth Staffen

Environmental Scientist/Data Validator  
Tetra Tech, NUS

  
Joseph A. Samchuck

Data Validation Quality Assurance Officer  
Tetra Tech, NUS

#### 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 (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 ( $< 2 \times$  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
- Y = Percent solids  $< 30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity

**CTO078-NAS CECIL FIELD**

**WATER DATA**

Accutest, NJ

SDG: F9648

SAMPLE NUMBER:	CEF-605-GW-3S	CEF-605-GW-DUP1		
SAMPLE DATE:	05/08/01	05/08/01	//	//
LABORATORY ID:	F9648-2	F9648-1		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
UNITS:	UG/L	UG/L		
FIELD DUPLICATE OF:		CEF-605-GW-3S		

	RESULT	QUAL	CODE									
<b>VOLATILES</b>												
1,1,1-TRICHLOROETHANE	2	U		2	U							
1,1,2,2-TETRACHLOROETHANE	2	U		2	U							
1,1,2-TRICHLOROETHANE	2	U		2	U							
1,1-DICHLOROETHANE	0.97	J	P	1	J	P						
1,1-DICHLOROETHENE	2	U		2	U							
1,2-DICHLOROETHANE	2	U		2	U							
1,2-DICHLOROPROPANE	2	U		2	U							
2-BUTANONE	10	U		10	U							
2-HEXANONE	10	U		10	U							
4-METHYL-2-PENTANONE	10	U		10	U							
ACETONE	50	U		50	U							
BENZENE	1	U		1	U							
BROMODICHLOROMETHANE	2	U		2	U							
BROMOFORM	2	U		2	U							
BROMOMETHANE	5	UR	C	5	UR	C						
CARBON DISULFIDE	10	U		10	U							
CARBON TETRACHLORIDE	2	U		2	U							
CHLOROBENZENE	2	U		2	U							
CHLORODIBROMOMETHANE	2	U		2	U							
CHLOROETHANE	29.4			30.6								
CHLOROFORM	2	U		2	U							
CHLOROMETHANE	5	U		5	U							
CIS-1,2-DICHLOROETHENE	2	U		2	U							
CIS-1,3-DICHLOROPROPENE	2	U		2	U							
ETHYLBENZENE	2	U		2	U							
METHYLENE CHLORIDE	5	U		5	U							
STYRENE	2	U		2	U							
TETRACHLOROETHENE	2	U		2	U							
TOLUENE	2	U		2	U							
TOTAL XYLENES	6	U		6	U							
TRANS-1,2-DICHLOROETHENE	2	U		2	U							
TRANS-1,3-DICHLOROPROPENE	2	U		2	U							

**CTO078-NAS CECIL FIELD**

**WATER DATA**

Accutest, NJ

SDG: F9648

SAMPLE NUMBER:	CEF-605-GW-3S	CEF-605-GW-DUP1		
SAMPLE DATE:	05/08/01	05/08/01	//	//
LABORATORY ID:	F9648-2	F9648-1		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
UNITS:	UG/L	UG/L		
FIELD DUPLICATE OF:		CEF-605-GW-3S		

	RESULT	QUAL	CODE									
<b>VOLATILES</b>												
TRICHLOROETHENE	2	U		2	U							
VINYL CHLORIDE	1	U		1	U							

**APPENDIX B**

**RESULTS AS REPORTED BY THE LABORATORY**

# Report of Analysis

Client Sample ID: CEF-605-GW-3S		Date Sampled: 05/08/01
Lab Sample ID: F9648-2		Date Received: 05/09/01
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: NAS Cecil Field 0039		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0003701.D	1	05/10/01	RAW	n/a	n/a	VC174
Run #2							

**VOA TCL List**

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	29.4	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	0.97	2.0	ug/l	J
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	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

<b>Client Sample ID:</b> CEF-605-GW-3S	
<b>Lab Sample ID:</b> F9648-2	<b>Date Sampled:</b> 05/08/01
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 05/09/01
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> n/a
<b>Project:</b> NAS Cecil Field 0039	

## VOA TCL List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	107%		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-605-GW-DUP1	Date Sampled:	05/08/01
Lab Sample ID:	F9648-1	Date Received:	05/09/01
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	NAS Cecil Field 0039		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0003702.D	1	05/10/01	RAW	n/a	n/a	VC174
Run #2							

**VOA TCL List**

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	30.6	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	1.0	2.0	ug/l	J
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	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

<b>Client Sample ID:</b> CEF-605-GW-DUP1	
<b>Lab Sample ID:</b> F9648-1	<b>Date Sampled:</b> 05/08/01
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 05/09/01
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> n/a
<b>Project:</b> NAS Cecil Field 0039	

## VOA TCL List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	109%		80-120%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	106%		80-120%

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

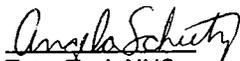
J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound



TO: M. SPERANZA – PAGE 2  
DATE: AUGUST 20, 2001

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

Angela Scheetz  
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**

**CTO078-NAS CECIL FIELD**

**WATER DATA**

**Accutest, NJ**

**SDG: F10383**

SAMPLE NUMBER:	CEF-605-GW-3S-02	CEF-605-GW-4S-02	CEF-605-GW-6S-02	CEF-605-GW-DUP1-02
SAMPLE DATE:	07/20/01	07/20/01	07/20/01	07/20/01
LABORATORY ID:	F10383-2	F10383-4	F10383-3	F10383-1
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				CEF-605-GW-3S-02

	RESULT	QUAL	CODE									
<b>VOLATILES</b>												
1,1,1-TRICHLOROETHANE	2	U		2	U		2	U		2	U	
1,1,2,2-TETRACHLOROETHANE	2	U		2	U		2	U		2	U	
1,1,2-TRICHLOROETHANE	2	U		2	U		2	U		2	U	
1,1-DICHLOROETHANE	2	U		2	U		2	U		2	U	
1,1-DICHLOROETHENE	2	U		2	U		2	U		2	U	
1,2-DICHLOROETHANE	2	U		2	U		2	U		2	U	
1,2-DICHLOROPROPANE	2	U		2	U		2	U		2	U	
2-BUTANONE	10	U										
2-HEXANONE	10	U										
4-METHYL-2-PENTANONE	10	U										
ACETONE	50	U										
BENZENE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	2	U		2	U		2	U		2	U	
BROMOFORM	2	U		2	U		2	U		2	U	
BROMOMETHANE	5	U		5	U		5	U		5	U	
CARBON DISULFIDE	10	U										
CARBON TETRACHLORIDE	2	U		2	U		2	U		2	U	
CHLOROBENZENE	2	U		2	U		2	U		2	U	
CHLORODIBROMOMETHANE	2	U		2	U		2	U		2	U	
CHLOROETHANE	19			5	U		5	U		17.6		
CHLOROFORM	2	U		2	U		2	U		2	U	
CHLOROMETHANE	5	U		5	U		5	U		5	U	
CIS-1,2-DICHLOROETHENE	2	U		2	U		2	U		2	U	
CIS-1,3-DICHLOROPROPENE	2	U		2	U		2	U		2	U	
ETHYLBENZENE	2	U		2	U		2	U		2	U	
METHYLENE CHLORIDE	5	U		5	U		5	U		5	U	
STYRENE	2	U		2	U		2	U		2	U	
TETRACHLOROETHENE	2	U		2	U		2	U		2	U	
TOLUENE	2	U		2	U		2	U		2	U	
TOTAL XYLENES	6	U		6	U		6	U		6	U	
TRANS-1,2-DICHLOROETHENE	2	U		2	U		2	U		2	U	
TRANS-1,3-DICHLOROPROPENE	2	U		2	U		2	U		2	U	

**CTO078-NAS CECIL FIELD**

**WATER DATA**

**Accutest, NJ**

**SDG: F10383**

SAMPLE NUMBER:	CEF-605-GW-3S-02	CEF-605-GW-4S-02	CEF-605-GW-6S-02	CEF-605-GW-DUP1-02
SAMPLE DATE:	07/20/01	07/20/01	07/20/01	07/20/01
LABORATORY ID:	F10383-2	F10383-4	F10383-3	F10383-1
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				CEF-605-GW-3S-02

	RESULT	QUAL	CODE									
<b>VOLATILES</b>												
TRICHLOROETHENE	2	U		2	U		2	U		2	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	

**APPENDIX B**

**RESULTS AS REPORTED BY THE LABORATORY**

## Report of Analysis

<b>Client Sample ID:</b> CEF-605-GW-3S-02	<b>Date Sampled:</b> 07/20/01
<b>Lab Sample ID:</b> F10383-2	<b>Date Received:</b> 07/21/01
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Cecil Field 0039	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0004933.D	1	08/01/01	JG	n/a	n/a	VC232
Run #2							

## VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	19.0	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	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

<b>Client Sample ID:</b> CEF-605-GW-3S-02		<b>Date Sampled:</b> 07/20/01
<b>Lab Sample ID:</b> F10383-2		<b>Date Received:</b> 07/21/01
<b>Matrix:</b> AQ - Ground Water		<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B		
<b>Project:</b> NAS Cecil Field 0039		

**VOA TCL List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	90%		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

<b>Client Sample ID:</b> CEF-605-GW-4S-02	
<b>Lab Sample ID:</b> F10383-4	<b>Date Sampled:</b> 07/20/01
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/21/01
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> n/a
<b>Project:</b> NAS Cecil Field 0039	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0004935.D	1	08/01/01	JG	n/a	n/a	VC232
Run #2							

## VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	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

<b>Client Sample ID:</b> CEF-605-GW-4S-02	<b>Date Sampled:</b> 07/20/01
<b>Lab Sample ID:</b> F10383-4	<b>Date Received:</b> 07/21/01
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Cecil Field 0039	

**VOA TCL List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	91%		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

<b>Client Sample ID:</b> CEF-605-GW-6S-02	<b>Date Sampled:</b> 07/20/01
<b>Lab Sample ID:</b> F10383-3	<b>Date Received:</b> 07/21/01
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Cecil Field 0039	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0004934.D	1	08/01/01	JG	n/a	n/a	VC232
Run #2							

## VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	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

<b>Client Sample ID:</b> CEF-605-GW-6S-02	
<b>Lab Sample ID:</b> F10383-3	<b>Date Sampled:</b> 07/20/01
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/21/01
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> n/a
<b>Project:</b> NAS Cecil Field 0039	

**VOA TCL List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	92%		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

<b>Client Sample ID:</b>	CEF-605-GW-DUP1-02		<b>Date Sampled:</b>	07/20/01
<b>Lab Sample ID:</b>	F10383-1		<b>Date Received:</b>	07/21/01
<b>Matrix:</b>	AQ - Ground Water		<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8260B			
<b>Project:</b>	NAS Cecil Field 0039			

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0004932.D	1	08/01/01	JG	n/a	n/a	VC232
Run #2							

## VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	17.6	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	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

<b>Client Sample ID:</b> CEF-605-GW-DUP1-02	
<b>Lab Sample ID:</b> F10383-1	<b>Date Sampled:</b> 07/20/01
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 07/21/01
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> n/a
<b>Project:</b> NAS Cecil Field 0039	

**VOA TCL List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	92%		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



**TO: M. SPERANZA -- PAGE 2**  
**DATE: APRIL 17, 2002**

"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

Bernard F Spada III  
Chemist/Data Validator



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**

**CTO226-NAS CECIL FIELD**

**WATER DATA**

**Accutest, NJ**

**SDG: F12288**

SAMPLE NUMBER:

CEF-605-3S-03

SAMPLE DATE:

02/11/02

LABORATORY ID:

F12288-1

QC\_TYPE:

NORMAL

% SOLIDS:

0.0 %

UNITS:

UG/L

FIELD DUPLICATE OF:

//

//

//

100.0 %

100.0 %

100.0 %

	RESULT	QUAL	CODE									
<b>VOLATILES</b>												
1,1,1-TRICHLOROETHANE	2	U										
1,1,2,2-TETRACHLOROETHANE	2	U										
1,1,2-TRICHLOROETHANE	2	U										
1,1-DICHLOROETHANE	2	U										
1,1-DICHLOROETHENE	2	U										
1,2-DICHLOROETHANE	2	U										
1,2-DICHLOROPROPANE	2	U										
CARBON TETRACHLORIDE	2	U										
CHLOROENZENE	2	U										
CHLOROETHANE	8.8											
CHLOROFORM	2	U										
CHLOROMETHANE	5	U										
CIS-1,2-DICHLOROETHENE	2	U										
CIS-1,3-DICHLOROPROPENE	2	U										
METHYLENE CHLORIDE	5	U										
TETRACHLOROETHENE	2	U										
TRANS-1,2-DICHLOROETHENE	2	U										
TRANS-1,3-DICHLOROPROPENE	2	U										
TRICHLOROETHENE	2	U										
VINYL CHLORIDE	1	U										

**APPENDIX B**

**RESULTS AS REPORTED BY THE LABORATORY**

## Report of Analysis

<b>Client Sample ID:</b> CEF-605-3S-03	<b>Date Sampled:</b> 02/11/02
<b>Lab Sample ID:</b> F12288-1	<b>Date Received:</b> 02/12/02
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Cecil Field-Building 605	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H015539.D	1	02/21/02	NAF	n/a	n/a	VH509
Run #2							

## TCL Chlorinated VOCs

CAS No.	Compound	Result	RL	Units	Q
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	8.8	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	91%		80-120%
460-00-4	4-Bromofluorobenzene	100%		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 compound

000014



**TO: M. SPERANZA – PAGE 2**  
**DATE: AUGUST 13, 2002**

"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  
Bernard F Spada III  
Chemist/Data Validator



Tetra Tech NUS  
Joseph A. Samchuck  
Data Validation Quality Assurance Officer

Attachments:

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**APPENDIX A**

**QUALIFIED ANALYTICAL RESULTS**

**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
- N01 = Internal Standard 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)
- 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
- Y = Percent solids  $< 30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ\_NO: 4187

SDG: F13881 MEDIA: WATER DATA FRACTION: OV

nsample CEF-605-3S-04  
samp\_date 7/17/2002  
lab\_id F13881-1  
qc\_type NM  
units UG/L  
Pct\_Solids 0  
DUP\_OF:

Parameter	Result	ValQual	QualCode
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1-DICHLOROETHANE	0.57	J	P
1,1-DICHLOROETHENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLOROETHANE	10.8		
CHLOROFORM	1	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
METHYLENE CHLORIDE	5	U	
TETRACHLOROETHENE	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPEN	1	U	
TRICHLOROETHENE	1	U	
VINYL CHLORIDE	1	U	

**APPENDIX B**

**RESULTS AS REPORTED BY THE LABORATORY**

## Report of Analysis

<b>Client Sample ID:</b> CEF-605-3S-04	<b>Date Sampled:</b> 07/17/02
<b>Lab Sample ID:</b> F13881-1	<b>Date Received:</b> 07/18/02
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Cecil Field-Building 605	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0010737.D	1	07/26/02	JG	n/a	n/a	VC484
Run #2							

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

## TCL Chlorinated VOCs

CAS No.	Compound	Result	RL	Units	Q
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	10.8	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	0.57	1.0	ug/l	J
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	
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	
74-87-3	Methyl chloride	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	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	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	97%		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



**TO: M. SPERANZA – PAGE 2**  
**DATE: SEPTEMBER 24, 2002**

"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  
Bernard F Spada III  
Chemist/Data Validator



Tetra Tech NUS  
Joseph A. Samchuck  
Data Validation Quality Assurance Officer

**Attachments:**

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- 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
- N01 = Internal Standard 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)
- 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
- Y = Percent solids  $< 30\%$
- Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ\_NO: 4187

SDG: F14443 MEDIA: WATER DATA FRACTION: OV

nsample CEF-607-GW-02S-01  
samp\_date 9/4/2002  
lab\_id F14443-1  
qc\_type NM  
units UG/L  
Pct\_Solids 0  
DUP\_OF:

Parameter	Result	ValQual	QualCode
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROENZENE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
METHYLENE CHLORIDE	5	U	
TETRACHLOROETHENE	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPEN	1	U	
TRICHLOROETHENE	1	U	
VINYL CHLORIDE	1	U	

**APPENDIX B**

**RESULTS AS REPORTED BY THE LABORATORY**

## Report of Analysis

<b>Client Sample ID:</b> CEF-607-GW-02S-01	<b>Date Sampled:</b> 09/04/02
<b>Lab Sample ID:</b> F14443-1	<b>Date Received:</b> 09/05/02
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8260B	
<b>Project:</b> NAS Cecil Field-Building 605	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0011622.D	1	09/11/02	JG	n/a	n/a	VC517
Run #2							

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

## TCL Chlorinated VOCs

CAS No.	Compound	Result	RL	MDL	Units	Q
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	1.0	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.50	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.50	ug/l	
74-87-3	Methyl chloride	ND	1.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		86-115%
17060-07-0	1,2-Dichloroethane-D4	105%		78-125%
2037-26-5	Toluene-D8	103%		87-113%
460-00-4	4-Bromofluorobenzene	93%		84-117%

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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