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NAS CECIL FIELD, FL
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"THIRD QUARTER SECOND YEAR GROUNDWATER MONITORING LETTER REPORT FOR
BUILDING 81 TANKS 81 A, B AND C NAS CECIL FIELD FL"
2/7/2008
TETRA TECH NUS INC

Document Tracking Number 08JAX0008

February 7, 2008

Project Number 00746

Mr. David Grabka
Remedial Project Manager
Technical Review/Federal Facilities
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Reference: CLEAN IV Contract Number N62467-04-D-0055
Contract Task Order 0076

Subject: Groundwater Monitoring Report, 3rd Quarter, 2nd Year (September 2007)
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TiNUS) is pleased to submit this Quarterly Groundwater Monitoring Report for the referenced Contract Task Order for Building 81, Tanks 81 A, B, and C. This Groundwater Monitoring Report was prepared for Naval Facilities Engineering Command Southeast (NAVFAC SE) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) IV Contract Number N62467-04-D-0055.

The primary objective of current activities at this site is to conduct quarterly monitoring of groundwater associated with the shallow and intermediate zones of the surficial aquifer. The sampling program was accomplished in general accordance with the revised Natural Attenuation Monitoring Plan (NAMP) submitted to the Florida Department of Environmental Protection (FDEP) on November 21, 2007, based on Chapter 62-770.690, Florida Administrative Code. The parameters of the NAMP were discussed and agreed upon during the September 2007 Base Realignment and Closure Cleanup Team meeting and were implemented during this sampling event. This report summarizes the field operations and analytical results for the subject site for the sampling event conducted during the week of September 19, 2007. The work was performed in general accordance with FDEP Standard Operating Procedures (SOPs) under DEP-SOP-001/01.

FIELD OPERATIONS

Groundwater samples were collected from existing wells CEF-081-04I, CEF-081-08SR, CEF-081-09S, CEF-081-14S, CEF-081-15S, CEF-081-16S, CEF-081-17S, CEF-081-18I, CEF-081-19I, CEF-081-21I, and CEF-081-22I from September 19 through 21, 2007. The Monitoring Well Location Map is presented as Figure 1. The samples were placed on ice and subsequently delivered via Federal Express under chain of custody to Accutest Laboratories in Orlando, Florida, for analysis. The laboratory analyzed the samples for isopropyl benzene using United States Environmental Protection Agency Method SW-846 8260B.

Prior to obtaining groundwater samples, synoptic water levels and total well depths were measured and recorded on a site-specific groundwater measurement sheet. On September 19, 2007, the depth to water ranged from 6.19 feet below top of casing (btoc) (CEF-081-13S) to 9.40 feet btoc (CEF-081-21I). Depth to water measurements, top of casing elevations, and groundwater elevations are presented in Table 1. General sampling protocols were in accordance with FDEP SOPs and TtNUS SOP SA-1.1.

RESULTS

The groundwater elevation data and flow direction for the shallow zone are shown on Figure 2. Based on the data, shallow groundwater flow is generally to the north and west. Groundwater elevation data and flow direction for the intermediate zone are shown on Figure 3. Based on the data, intermediate groundwater flow is generally to the north and northwest.

The only constituent of concern (COC) listed in the recently submitted NAMP (see Attachment A) is isopropyl benzene. COC concentrations reported by the laboratory for the groundwater samples collected for this sampling event were compared to FDEP Groundwater Cleanup Target Levels (GCTLs) and Natural Attenuation Default Source Concentrations. The data and standards are presented in Table 2, and the results are presented on Figure 4. The laboratory data (see Attachment B) indicate that isopropyl benzene was detected at 2.3 micrograms per liter ($\mu\text{g/L}$) in CEF-081-04I, 1.3 $\mu\text{g/L}$ in CEF-081-09S, 1.0 $\mu\text{g/L}$ in CEF-081-15S, 1.5 $\mu\text{g/L}$ in CEF-081-18I, and 2.8 $\mu\text{g/L}$ in CEF-081-19I. These concentrations exceed the GCTL of 0.8 $\mu\text{g/L}$. All other target analytes were either not detected or were detected at estimated concentrations less than their respective GCTLs.

CONCLUSIONS AND RECOMMENDATIONS

The shallow groundwater flow direction is consistent with previous sampling events. Intermediate zone groundwater flow was generally to the north and northwest during the September 2007 sampling event, which is consistent with other sampling events for the intermediate zone groundwater flow. However, in June 2007, the intermediate groundwater flow was determined to be to the southeast and northwest.

September 2007 concentrations of isopropyl benzene in groundwater exceeded the GCTL in monitoring wells CEF-081-04I, CEF-081-09S, CEF-081-15S, CEF-081-18I, and CEF-081-19I. The isopropyl benzene concentration increased in CEF-081-04I since its last sampling event in February 2005. The isopropyl benzene concentration in CEF-081-08SR decreased to less than the GCTL since the last sampling event (June 2007). A stable decreasing trend of isopropyl benzene concentrations is apparent in the remaining wells with GCTL exceedances.

Based on the results of the September 2007 groundwater sampling event, TtNUS recommends that quarterly sampling continue. The next quarterly sampling event is scheduled for December 2007.

If you have any questions regarding this submittal, please feel free to contact Kara Wimble at (904) 730-4669, extension 214, or via e-mail at Kara.Wimble@tetrattech.com.

Sincerely,



Robert Simcik, P.E.
Task Order Manager
P.E. Number 61263

Kara F. Wimble
Project Scientist

Enclosures (8)

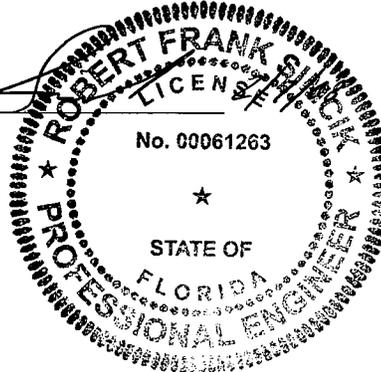
- c: B.Nwokike, NAVFAC SE (CD only)
S. Naik, CH2M Hill (CD only)
M. Perry, TtNUS (unbound and CD)
D. Humbert, TtNUS (letter only)
M. Speranza, TtNUS (letter only)
M. Jonnet, TtNUS (Cecil DMS) (CD)
J. Logan, TtNUS
R. Simcik, TtNUS (Bookcase File)
J. Johnson, TtNUS (Information Repository) (CD)
CTO 0076 Project File

CERTIFICATION

The information contained herein is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned engineer should be notified to evaluate the effects of any additional information on the information described in this report. This Groundwater Monitoring Report, 3rd Quarter, 2nd Year (September 2007) is for Building 81, Tanks 81 A, B, and C at Former Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.



February 7, 2008
Robert Simcik, P.E.
P.E. License Number 61263



TABLES

**Table 1
Groundwater Elevation Data**

Quarterly Groundwater Monitoring Report
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida
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Monitoring Well Identification	Well Depth (ft btoc)	TOC Elevation (ft above msl)	January 5, 2007		February 5, 2007		June 6, 2007		June 21, 2007		September 19, 2007	
			Depth to Water (ft btoc)	Water-Level Elevation (ft above msl)	Depth to Water (ft btoc)	Water-Level Elevation (ft above msl)	Depth to Water (ft btoc)	Water-Level Elevation (ft above msl)	Depth to Water (ft btoc)	Water-Level Elevation (ft above msl)	Depth to Water (ft btoc)	Water-Level Elevation (ft above msl)
CEF-80-3S	15.12	77.68	NM	NM								
CEF-80-13S	14.90	78.17	NM	NM								
CEF-81-2S	15.00	78.41	9.84	68.57	NM	NM	NM	NM	NM	NM	8.84	69.57
CEF-81-8SR	12.94	77.61	8.97	68.64	8.44	69.17	9.66	67.95	8.07	69.54	7.94	69.67
CEF-81-9S	12.74	77.72	9.15	68.57	8.70	69.02	9.66	68.06	8.35	69.37	8.15	69.57
CEF-81-10S	12.99	78.46	9.83	68.63	NM	NM	NM	NM	9.32	69.14	8.79	69.67
CEF-81-11S	12.88	78.47	9.81	68.66	NM	NM	NM	NM	NM	NM	8.79	69.68
CEF-81-12S	11.68	77.37	9.65	67.72	6.77	70.60	NM	NM	6.31	71.06	7.68	69.69
CEF-81-13S	12.14	77.91	7.34	70.57	6.65	71.26	9.68	68.23	8.66	69.25	6.19	71.72
CEF-81-14S	13.00	78.30	9.79	68.51	9.44	68.86	9.65	68.65	9.12	69.18	8.81	69.49
CEF-81-1I	29.25	77.73	9.19	68.54	8.86	68.87	9.66	68.07	8.58	69.15	8.23	69.50
CEF-P25-1S	12.00	77.57	9.03	68.54	8.69	68.88	NM	NM	NM	NM	8.05	69.52
CEF-81-2I	30.00	77.42	8.94	68.48	8.62	68.80	NM	NM	8.32	69.10	7.97	69.45
CEF-81-3I	30.00	77.78	9.34	68.44	9.05	68.73	NM	NM	NM	NM	8.40	69.38
CEF-81-4I	30.00	77.54	9.09	68.45	8.77	68.77	NM	NM	NM	NM	8.12	69.42
CEF-81-5I	30.00	77.84	9.33	68.51	9.01	68.83	NM	NM	8.73	69.11	8.37	69.47
CEF-81-1D	55.00	77.77	NM	NM	8.97	68.80	NM	NM	NM	NM	NM	NM
CEF-81-15S	15.00	78.03	9.51	68.52	9.15	68.88	9.18	68.85	NM	NM	8.51	69.52
CEF-81-16S	15.00	78.53	10.05	68.48	9.73	68.80	9.67	68.86	9.45	69.08	9.09	69.44
CEF-81-17S	15.00	78.35	9.82	68.53	9.48	68.87	9.61	68.74	9.20	69.15	8.87	69.48
CEF-81-18I	35.00	78.33	9.79	68.54	9.50	68.83	9.62	68.71	9.20	69.13	8.85	69.48
CEF-81-19I	35.00	78.15	9.61	68.54	9.31	68.84	9.58	68.57	9.02	69.13	8.65	69.50
CEF-81-20I	35.00	77.63	9.09	68.54	8.77	68.86	9.21	68.42	8.50	69.13	8.11	69.52
CEF-81-21I	35.00	78.78	NI	NI	NI	NI	10.15	68.63	9.73	69.05	9.40	69.38
CEF-81-22I	35.00	78.35	NI	NI	NI	NI	9.78	68.57	9.31	69.04	8.90	69.45

TOC - Top of Casing
ft = Feet or foot
msl = Mean sea level

NI = Not installed
MN = Not measured

**Table 2
Groundwater Analytical Data**

Quarterly Groundwater Monitoring Report
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida
Page 1 of 3

Parameter	GCTL	NADSC	CEF-081-											
			01I			04I		08SR				09S		
			02/18/05	02/05/07	06/06/07	02/18/05	09/19/07	02/18/05	02/05/07	06/07/07	09/20/07	02/18/05	02/05/07	06/08/07

VOCs (µg/L)

Ethylbenzene	30	300	0.5 U	0.3 U	0.30 U	1.5	NA	0.5 U	0.3 U	0.20 U	NA	0.6 J	0.3 U	0.30 U	NA
Isopropylbenzene	0.8	8	0.69 J	0.36 J	0.10 U	1.7	2.3	0.5 U	0.1 U	2.1	0.21 U	2.8	2.29	0.10 U	1.3
Toluene	40	400	0.5 U	0.2 U	0.20 U	0.50 U	NA	0.5 U	0.2 U	0.29 J	NA	0.5 U	0.2 U	0.25 J	NA
Benzene	1	10	0.5 U	0.2 U	0.20 U	0.50 U	NA	0.5 U	0.2 U	0.20 U	NA	0.5 U	0.2 U	0.20 U	NA
MTBE	20	200	NA	0.2 U	0.20 U	NS	NA	NA	0.2 U	0.20 U	NA	NA	0.2 U	0.20 U	NA

PAHs (µg/L)

1-Methylnaphthalene	28	280	0.49 U	0.02 U	0.02 U	NS	NA	0.49 U	0.02 U	12.4	NA	9.2	0.47	0.02 U	NA
2-Methylnaphthalene	28	280	0.49 U	0.02 U	0.02 U	NS	NA	0.49 U	0.02 U	4.58	NA	5.7	0.07 J	0.02 U	NA
Acenaphthene	20	200	0.98 U	0.24	0.02 U	1.0 U	NA	0.98 U	0.02 U	0.38	NA	0.99 U	0.07 J	0.02 U	NA
Fluorene	280	2800	0.98 U	0.51	0.05 U	1.1	NA	0.98 U	0.02 U	0.94	NA	0.99 U	0.1	0.05 U	NA
Naphthalene	14	140	0.98 U	0.22	0.05 U	2.2	NA	0.98 U	0.02 U	0.95	NA	4.2	0.16	0.05 U	NA
Phenanthrene	210	2100	0.98 U	0.02 U	0.04 U	1.0 U	NA	0.98 U	0.02 U	0.13	NA	0.99 U	0.02 U	0.04 U	NA
Pyrene	210	2100	0.49 U	0.02 U	0.03 U	0.50 U	NA	0.49 U	0.02 U	0.03 U	NA	0.5 U	0.02 U	0.03 U	NA

Parameter	GCTL	NADSC	CEF-081-											
			13S			14S				15S			16S	
			02/21/05	02/06/07	06/08/07		02/18/05	02/06/07	06/07/07	09/20/07	11/21/06	02/06/07	06/07/07	09/19/07
Sample	Duplicate													

VOCs (µg/L)

Ethylbenzene	30	300	0.5 U	0.3 U	0.30 U	0.30 U	0.5 U	0.3 U	0.30 U	NA	0.3 U	0.3 U	0.30 U	NA	0.3 U
Isopropylbenzene	0.8	8	0.5 U	0.1 U	0.10 U	0.10 U	3.3	0.95 J	0.21 J	0.21 U	0.1 U	0.1 U	1.3	1.0	0.1 U
Toluene	40	400	0.5 U	0.24 J	0.20 U	0.52 J	0.5 U	0.2 U	0.22 J	NA	0.2 U	0.21 J	0.33 J	NA	0.2 U
Benzene	1	10	0.5 U	0.2 U	0.20 U	0.20 U	0.5 U	0.2 U	0.20 U	NA	0.2 U	0.2 U	0.20 U	NA	0.2 U
MTBE	20	200	NA	0.2 U	0.20 U	0.20 U	NA	0.2 U	0.20 U	NA	0.2 U	0.2 U	0.20 U	NA	0.2 U

PAHs (µg/L)

1-Methylnaphthalene	28	280	0.48 U	0.02 U	0.02 U	0.02 U	9.9	0.02 U	0.02 U	NA	0.02 U	0.02 U	0.02 U	NA	0.02 U
2-Methylnaphthalene	28	280	0.48 U	0.02 U	0.02 U	0.02 U	6.2	0.02 U	0.02 U	NA	0.02 U	0.02 U	0.02 U	NA	0.02 U
Acenaphthene	20	200	0.96 U	0.02 U	0.02 U	0.02 U	0.97 U	0.02 U	0.02 U	NA	0.02 U	0.02 U	0.02 U	NA	0.02 U
Fluorene	280	2800	0.96 U	0.02 U	0.05 U	0.05 U	0.97 U	0.02 U	0.05 U	NA	0.02 U	0.02 U	0.05 U	NA	0.02 U
Naphthalene	14	140	0.96 U	0.02 U	0.05 U	0.05 U	7.8	0.16	0.05 U	NA	0.55	0.06 J	0.05 U	NA	0.02 U
Phenanthrene	210	2100	0.96 U	0.02 U	0.04 U	0.04 U	0.97 U	0.02 U	0.04 U	NA	0.02 U	0.02 U	0.04 U	NA	0.02 U
Pyrene	210	2100	0.48 U	0.02 U	0.03 U	0.03 U	0.49 U	0.02 U	0.03 U	NA	0.02 U	0.02 U	0.03 U	NA	0.02 U

Table 2
Groundwater Analytical Data

Quarterly Groundwater Monitoring Report
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida
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Parameter	GCTL	NADSC	CEF-081-											
			16S			17S				18I				
			02/06/07	06/07/07	09/20/07	11/21/06	02/06/07	06/07/07	09/20/07	11/22/06 Sample	11/22/06 Duplicate	02/05/07 Sample Duplicate		6/7/2007

VOCs (µg/L)

Ethylbenzene	30	300	0.3 U	0.30 U	NA	0.3 U	0.3 U	0.30 U	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.30 U	NA
Isopropylbenzene	0.8	8	0.1 U	0.10 U	0.21 U	0.1 U	0.1 U	0.10 U	0.21 U	1	1.2	1.26	1.19	1.8	1.5
Toluene	40	400	0.2 U	0.20 U	NA	0.2 U	0.2 U	0.20 U	NA	0.5 J	0.2 U	0.23 J	0.2 U	0.20 U	NA
Benzene	1	10	0.2 U	0.20 U	NA	0.2 U	0.2 U	0.20 U	NA	0.2 U	0.5 U	0.2 U	0.20 U	0.2 U	NA
MTBE	20	200	0.2 U	0.20 U	NA	0.2 U	0.2 U	0.20 U	NA	0.2 U	NA	0.2 U	0.20 U	0.2 U	NA

PAHs (µg/L)

1-Methylnaphthalene	28	280	0.02 U	0.02 U	NA	0.02 U	0.02 U	0.02 U	NA	0.09 J	0.08 J	0.02 U	0.02 U	0.02 U	NA
2-Methylnaphthalene	28	280	0.02 U	0.02 U	NA	0.02 U	0.02 U	0.02 U	NA	0.02 U	NA				
Acenaphthene	20	200	0.02 U	0.02 U	NA	0.02 U	0.02 U	0.24	NA	0.16	0.18	0.16	0.14	0.24	NA
Fluorene	280	2800	0.02 U	0.05 U	NA	0.02 U	0.02 U	0.43	NA	0.23	0.27	0.23	0.2	0.43	NA
Naphthalene	14	140	0.02 U	0.05 U	NA	0.02 U	0.02 U	0.31	NA	0.26	0.29	0.31	0.2	0.39	NA
Phenanthrene	210	2100	0.02 U	0.04 U	NA	0.02 U	0.02 U	0.04 U	NA	0.02 U	0.02 U	0.02 U	0.02 U	0.04 U	NA
Pyrene	210	2100	0.02 U	0.03 U	NA	0.02 U	0.02 U	0.03 U	NA	0.02 U	0.02 U	0.06 J	0.02 U	0.03 U	NA

Parameter	GCTL	NADSC	CEF-081-											
			19I			20I			21I		22I			
			11/22/06	02/06/07	06/08/07	09/20/07 Sample Duplicate		11/22/06	02/06/07	06/08/07	06/07/07	09/21/07	06/07/07	09/21/07

VOCs (µg/L)

Ethylbenzene	30	300	0.7 J	1.18	1.3	NS	NA	0.3 U	0.3 U	0.30 U	0.30 U	NA	0.93 J	NA
Isopropylbenzene	0.8	8	2.8	5.32	4.2	2.8	2.8	0.2 J	0.1 U	0.10 U	0.10 U	0.21 U	0.52 J	0.43 J
Toluene	40	400	0.2 U	0.2 U	0.20 U	NA	NA	0.3 J	0.37 J	0.20 U	0.53 J	NA	0.43 J	NA
Benzene	1	10	0.2 U	0.20 U	0.2 U	NA	NA	0.2 U	0.20 U	0.2 U	0.20 U	NA	0.28 J	NA
MTBE	20	200	0.2 U	0.20 U	0.2 U	NA	NA	0.2 U	0.20 U	0.2 U	0.20 U	NA	1.8	NA

PAHs (µg/L)

1-Methylnaphthalene	28	280	6.5	11.6	0.02 U	NA	NA	0.02 U	0.03 U	0.02 U	0.02 U	NA	0.02 U	NA
2-Methylnaphthalene	28	280	4.31	8.43	0.02 U	NA	NA	0.02 U	0.03 U	0.02 U	0.02 U	NA	0.02 U	NA
Acenaphthene	20	200	0.28	0.27	0.05 J	NA	NA	0.08 J	0.03 U	0.08 J	0.02 U	NA	0.22	NA
Fluorene	280	2800	0.65	0.64	0.09 J	NA	NA	0.15	0.06 J	0.05 U	0.05 U	NA	0.54	NA
Naphthalene	14	140	1.01	1.29	0.05 U	NA	NA	0.07 J	0.03 U	0.05 J	0.05 U	NA	0.17	NA
Phenanthrene	210	2100	0.1	0.09 J	0.04 U	NA	NA	0.02 U	0.03 U	0.04 U	0.04 U	NA	0.04 U	NA
Pyrene	210	2100	0.02 U	0.02 U	0.03 U	NA	NA	0.02 U	0.02 U	0.03 U	0.03 U	NA	0.03 U	NA

Table 2
Groundwater Analytical Data

Quarterly Groundwater Monitoring Report
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida
Page 3 of 3

GCTL = Groundwater Cleanup Target Level

NADSC = Natural Attenuation Default Source Concentration

VOCs = Volatile organic compounds

µg/L = Micrograms per liter

MTBE = Methyl tertiary butyl ether

PAHs = Polynuclear aromatic hydrocarbons

U = Not detected at detection limit shown

J = Estimated concentration

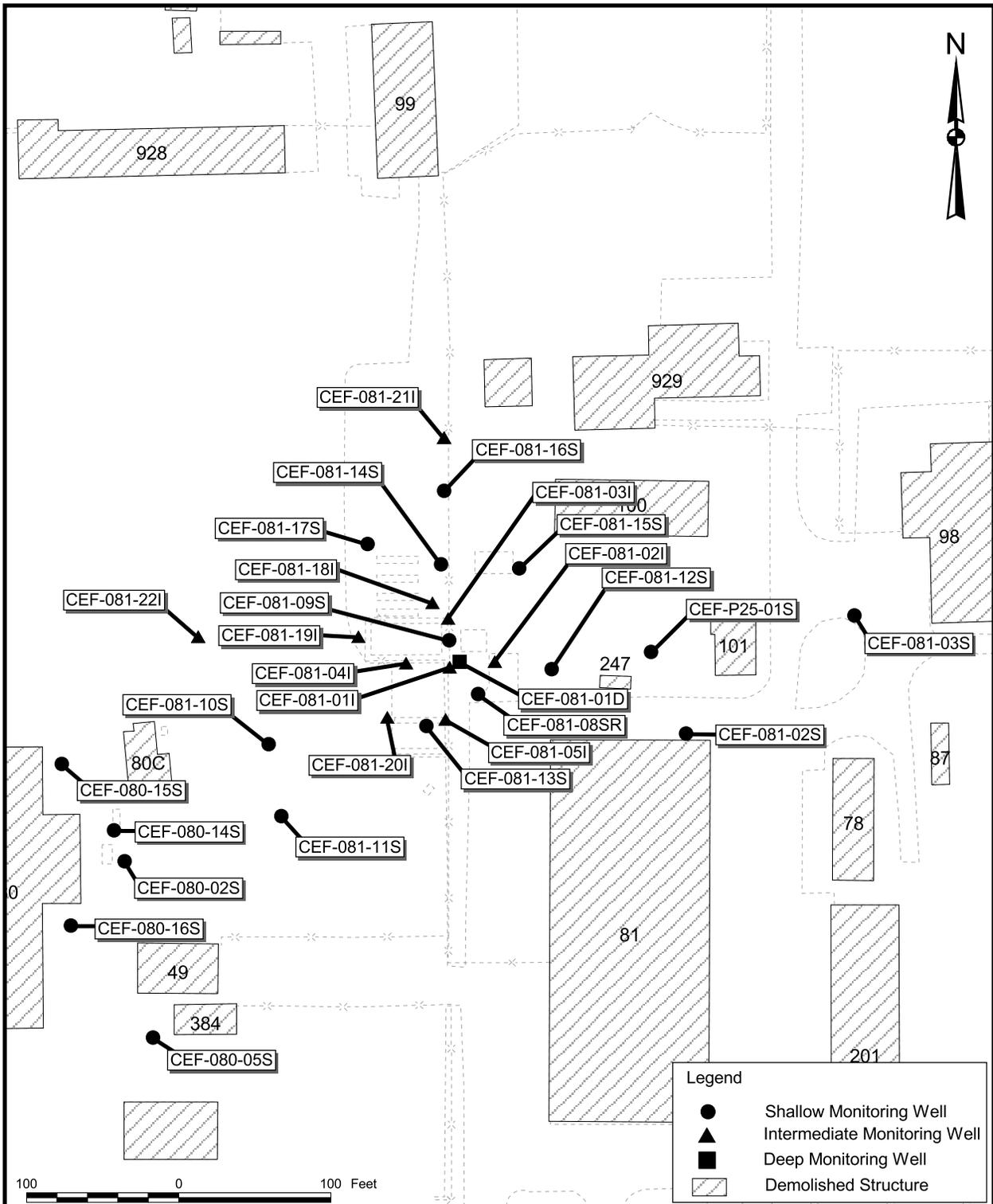
White Bold indicates concentration greater than FDEP criterion.

FDEP GCTLs from Chapter 62-777, Florida Administrative Code (F.A.C.)

NADSC from Chapter 62-777, F.A.C.

NA = Not analyzed

FIGURES

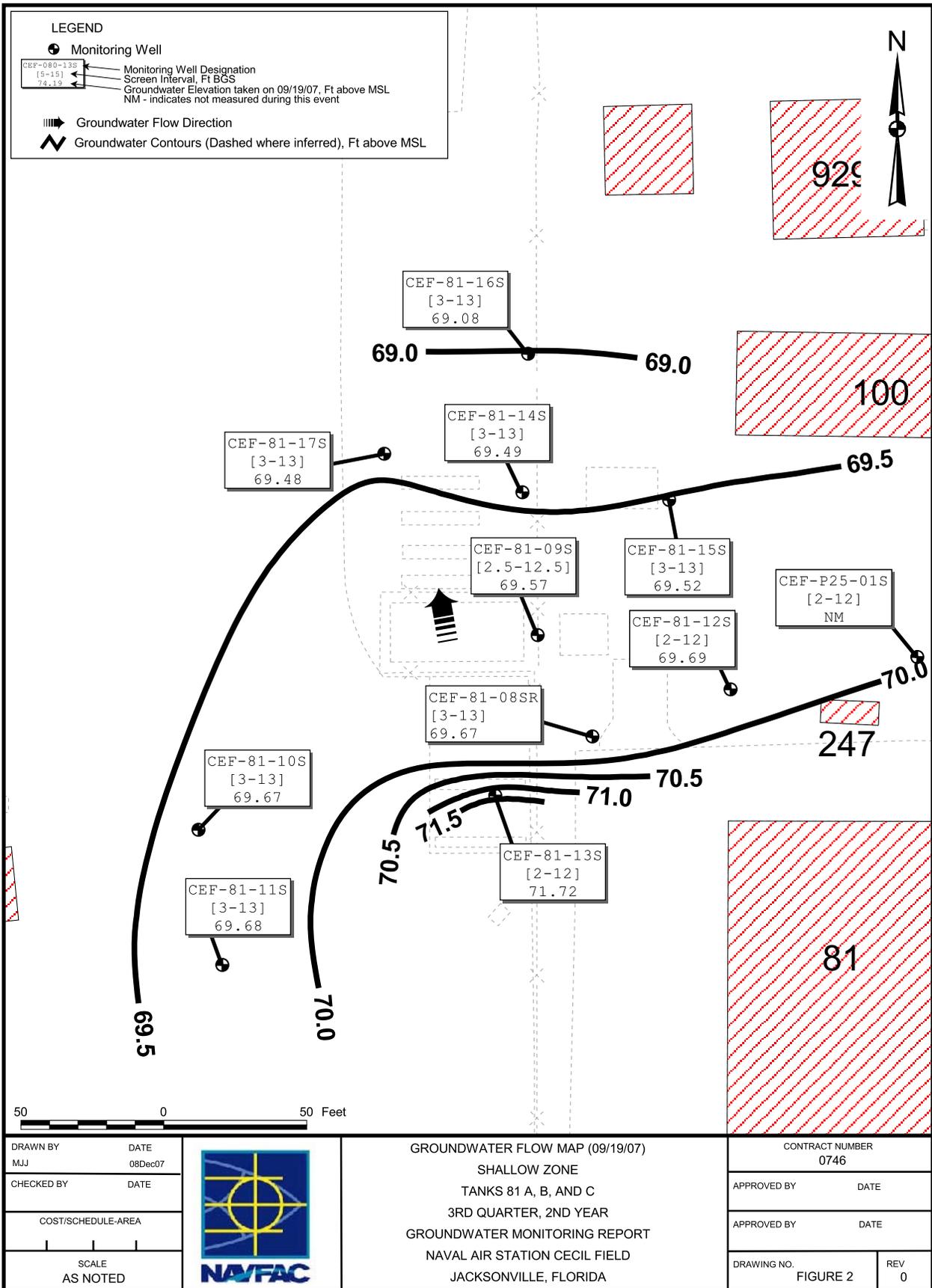


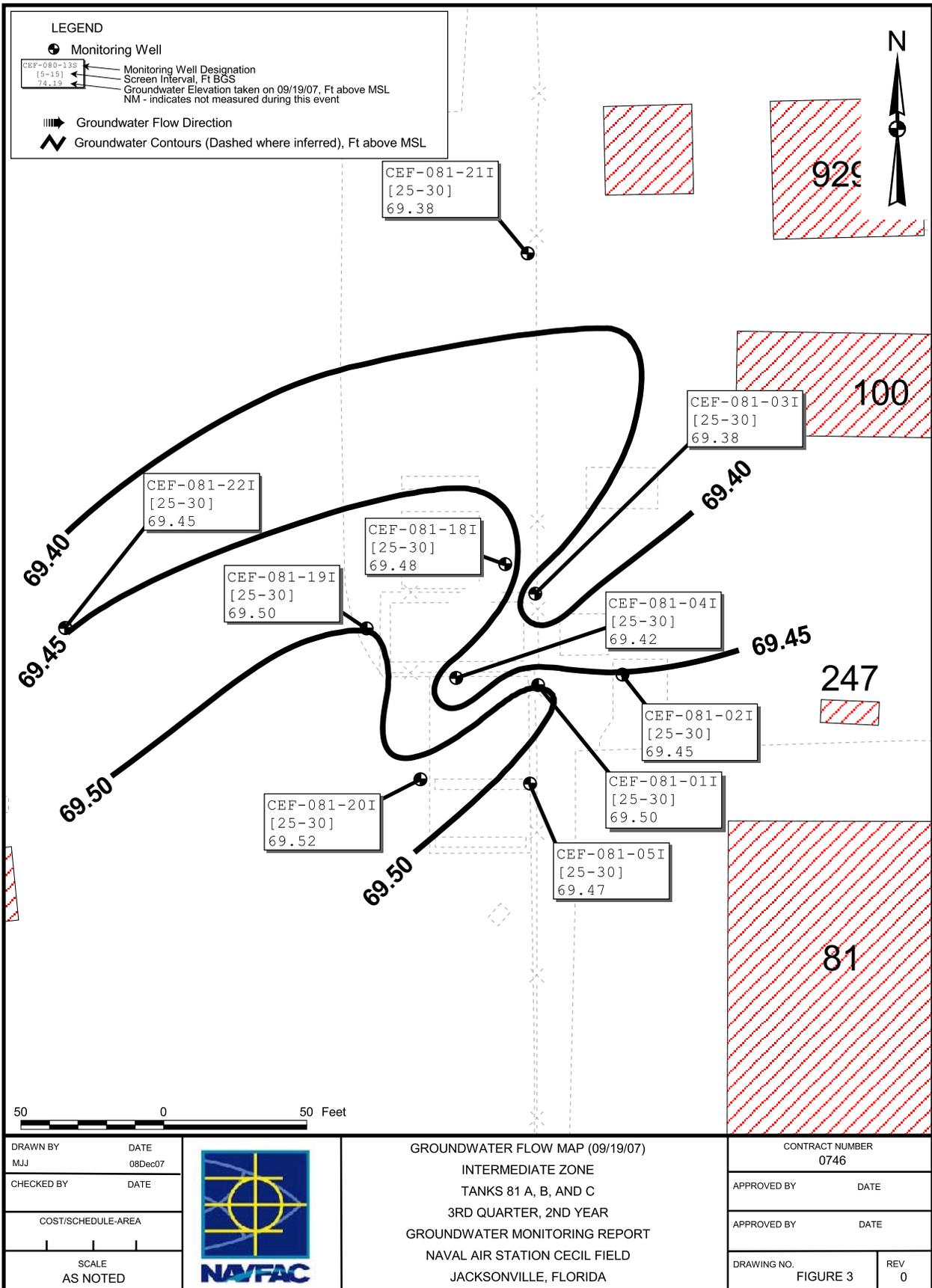
DRAWN BY MJJ	DATE 30Aug07
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	

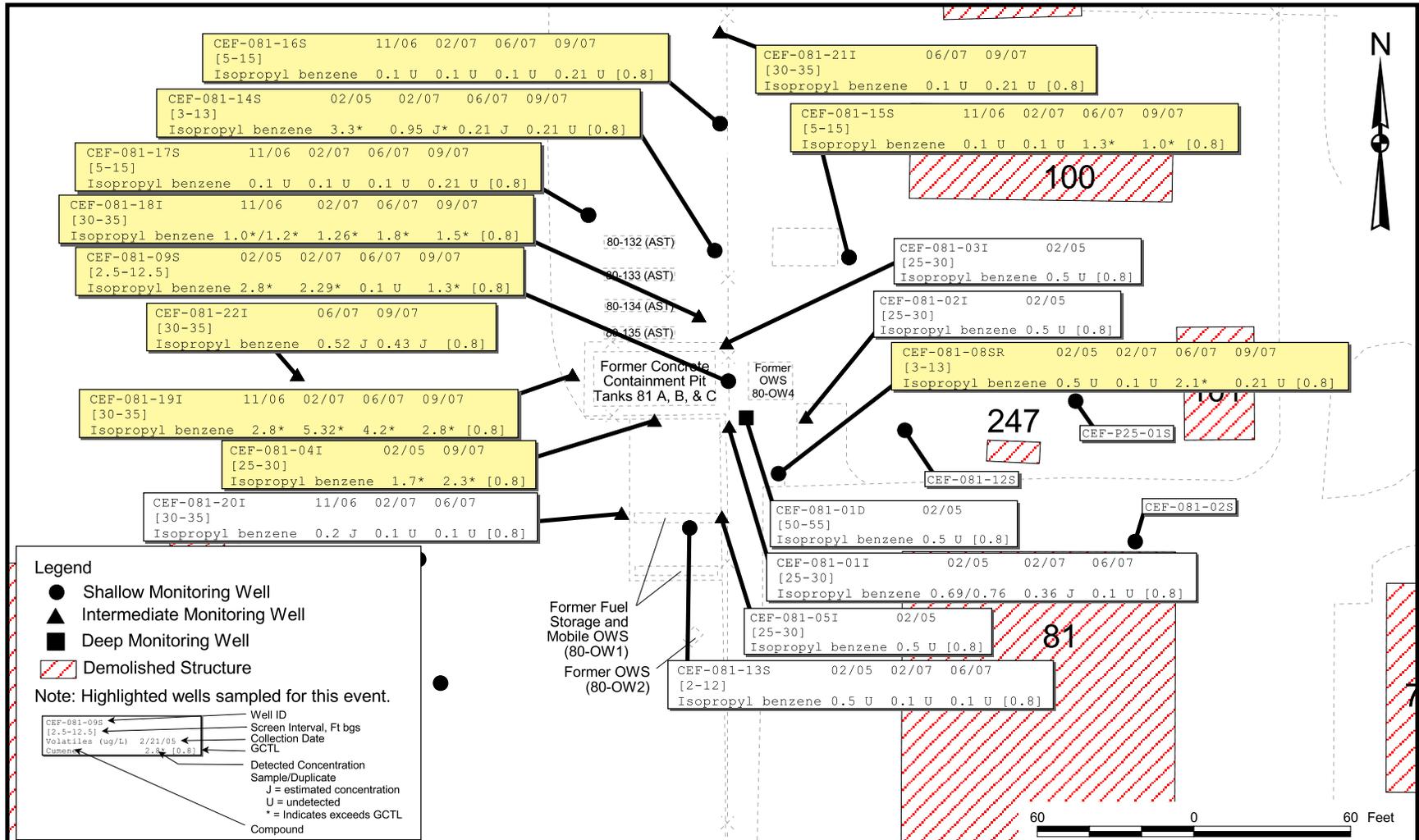


MONITORING WELL LOCATION MAP
 TANKS 81A, B, & C
 3RD QUARTER, 2ND YEAR
 GROUNDWATER MONITORING REPORT
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0746	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0







DATE	08Dec07
CHECKED BY	MJJ
COST/SCHEDULE-AREA	
SCALE	AS NOTED



ANALYTICAL RESULTS
TANKS 81 A, B, AND C
3RD QUARTER, 2ND YEAR
GROUNDWATER MONITORING REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

DRAWN BY	CONTRACT NUMBER	0746
APPROVED BY	DATE	
APPROVED BY	DATE	
DRAWING NO.	FIGURE 4	REV 0

ATTACHMENT A

REVISED NAMP



TETRA TECH NUS, INC.

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Document Tracking Number 07JAX0135

November 21, 2007

Project Number 112G00746

Mr. David Grabka
Florida Department of Environmental Protection
Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Reference: CLEAN IV Contract Number N62467-04-D-0055
Contract Task Order Number 0076

Subject: Natural Attenuation Monitoring Plan
Building 81, Tanks 81 A, B, and C
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Natural Attenuation Monitoring Plan (NAMP) for Building 81, Tanks 81 A, B, and C. This document was prepared for the United States Department of the Navy, Naval Facilities Engineering Command Southeast (NAVFAC SE) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract Number N62467-04-D-0055, Contract Task Order 0076.

INTRODUCTION

This Natural Attenuation Monitoring Plan (NAMP) addresses the proposed groundwater monitoring activities for Tanks 81 A, B, and C at Former Naval Air Station (NAS) Cecil Field, Jacksonville, Florida. This NAMP was drafted to set and meet the milestone objectives in accordance with Chapter 62-770.690, Florida Administrative Code (FAC) and ultimately to meet the applicable No Further Action criteria of Rule 62-770.680, FAC at Tanks 81 A, B, and C.

PURPOSE

This monitoring plan for Tanks 81 A, B, and C is an integral component of the remedial action taken at this site under the Navy's Base Realignment and Closure (BRAC) Program at Former NAS Cecil Field. It is also the purpose of this plan to establish a reasonable exit strategy that will define when a satisfactory level of clean up has been achieved. The following sections describe the site background, objective of the monitoring plan, the specific monitoring plan components, and the exit strategy.

SITE BACKGROUND

The majority of NAS Cecil Field is located in southwestern Duval County, and the southernmost portion is located in Clay County. The base was operated by the Navy from approximately 1943 to 1999. Building 81, Tanks 81 A, B, and C were located in the Main Base area of NAS Cecil Field west of the Alpha runway at NAS Cecil Field. Figure 1 provides a location map for the site.

Former Tanks 81 A, B, and C consisted of three aboveground storage tanks (ASTs) located northwest of Building 81. No structures are currently located on the site. The location of the former Tanks 81 A, B,

and C is a relatively flat area with a mix of an asphalt parking lot and a grassy vacant lot. A topographic map of the area surrounding the site is presented in Figure 2.

According to the Environmental Baseline Survey for NAS Cecil Field, this site was on the eastern edge of an area called the Transportation and Fuel Management (TFM) compound (TtNUS, 2002). The TFM compound consisted of seven buildings (Buildings 49, 80, 80C, 178, 180, 384, and 584). Figure 3 shows the location of three of those buildings to the southwest of the site. Automotive maintenance for the base was managed from the TFM compound. Immediately east of the TFM compound, a series of buildings existed that housed the operations of a Navy subcontractor hired to handle plumbing, carpentry, general painting, and welding, electrical and light machine work related to general maintenance on base. This area was known as the Public Works Maintenance Area (PWMA). The central building of the PWMA was Building 81. Support buildings to the north and east of Building 81, shown on Figure 3, included Buildings 78, 98, 100, 101, 201, 247 and 929. Although the site's identification (Building 81, Tanks 81 A, B, and C) indicates a relationship to the PWMA, this information appears to establish a closer relationship between this site and the TFM compound.

Tanks 81 A, B, and C were contained in a secondary concrete containment pit that was approximately 2 feet deep. There is limited available information about the construction or possible contents of the three ASTs kept in this pit. (TtNUS, 2002).

TtNUS personnel conducted a Site Assessment and prepared a Site Assessment Report (SAR) for Building 81, Tanks 81 A, B, and C on July 18, 2002. The conclusions and recommendations from the SAR were as follows:

- Soil contamination was adequately addressed and removed by previous source removal actions.
- Groundwater contamination was delineated to the water table.
- There was no free product and contamination did not appear to extend deeper than the water table.
- Monitoring of contaminated groundwater in five water table wells (CEF-81-8SR, CEF-81-9S, CEF-81-12S, CEF-81-13S, and CEF-81-14S) for the four constituents of concern (COCs) [isopropylbenzene, naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB] for 5 years is recommended.
- Institutional controls were recommended to prevent use of groundwater as a potable water source.

The Florida Department of Environmental Protection (FDEP) generally accepted the recommendations from the SAR in the Monitoring Only Plan Approval Order dated October 1, 2002, with the exception of altering the recommended monitoring well list. The monitoring well list specified in the order was as follows: CEF-81-08SR, CEF-81-13S, CEF-81-14S, and CEF-81-011.

The first quarterly monitoring event, conducted in January 2003, indicated that concentrations of COCs in intermediate well CEF-81-011 exceeded GCTLs. The associated report (TtNUS, 2003) recommended that the monitoring program be discontinued and that a supplemental site assessment be conducted. The FDEP approved the recommendation for a supplemental investigation in a letter dated February 5, 2004.

In response to these exceedances of COCs in CEF-81-011 during quarterly monitoring events in 2003, FDEP approved TtNUS's recommendation for a supplemental investigation on February 5, 2004. Additional monitoring wells were installed at the site for analysis as part of the supplemental site assessment. Four intermediate monitoring wells (CEF-81-02I, CEF-81-03I, CEF-81-04I, and CEF-81-05I) and one deep monitoring well (CEF-81-01D) were installed and developed in February 2005. The newly installed wells along with the original five Monitoring Only Plan wells were sampled for the COCs during the February 2005 groundwater sampling event.

The Supplemental Site Assessment Letter Report dated August 3, 2005, indicated that isopropyl benzene was migrating downgradient in the shallow and intermediate zones of the surficial aquifer; however, the deep zone had been delineated. FDEP approved an additional recommendation to further delineate the shallow and intermediate zones of the surficial aquifer in December 2005. In response, three shallow monitoring wells (CEF-081-15S, CEF-081-16S, and CEF-081-17S) and three intermediate monitoring wells (CEF-081-18I, CEF-081-19I, and CEF-081-20I) were installed and sampled in November 2006.

The laboratory analytical results from the November 2006 sampling event indicate that concentrations of isopropyl benzene in groundwater exceeded its GCTL in monitoring wells CEF-81-18I and CEF-18-19I. No GCTLs were exceeded for the other four newly installed wells (CEF-81-15S, CEF-81-16S, CEF-81-17S, and CEF-81-20I) during this sampling event (TtNUS, 2007).

The laboratory analytical results from the February 2007 sampling events indicate that concentrations of isopropyl benzene in groundwater exceed the GCTL in monitoring wells CEF-81-09S, CEF-81-14S, CEF-81-18I, and CEF-81-19I. No other COCs exceeded their respective GCTLs.

During the May 2007 BRAC Team (BCT) meeting, the installation of additional wells to further delineate contamination in the intermediate zone of the aquifer was discussed and the BCT agreed that adding two intermediate wells was the best course of action, and that the shallow zone was delineated.

In June 2007, two additional wells, CEF-081-21I and CEF-081-22I, were installed, developed, and sampled. The laboratory analytical results from the June 2007 sampling events indicated that concentrations of isopropyl benzene in groundwater exceeded the GCTL in monitoring wells CEF-81-08SR, CEF-81-15S, CEF-81-18I, and CEF-81-19I. The isopropyl benzene concentrations have decreased to below the GCTLs since the last sampling event (February 2007) in monitoring wells CEF-081-09S and CEF-081-14S. However, isopropyl benzene was first detected in monitoring wells CEF-081-08SR and CEF-081-15S during this June 2007 sampling event. No other COCs exceeded their respective GCTLs. Analytical results for the June 2007 sampling event are presented on Figure 4.

Based on the results of the June 2007 groundwater sampling event, TtNUS recommends that a revised NAMP be prepared and implemented for the site. Chapter 62-770.690(7)(a), FAC requires a minimum of two wells for the NAMP to monitor the area of maximum concentration of contaminants and the downgradient edge of the plume. TtNUS also recommended that quarterly sampling continue.

OBJECTIVES

The objective of this NAMP is to ensure that UST requirements are acceptable to meet the goals of protecting human health and the environment by satisfying the following objectives:

- Assure the public, the regulators, and the scientific community that the selected monitoring plan is working as expected and continues to be protective of human health and the environment.
- Collect sufficient groundwater quality data to enable reliable assessment of data trends and projections of time to reach remedial goals defined by the milestones and FDEP GCTLs for groundwater.
- Make timely decisions for the need to implement contingent actions and/or modify the NAMP.
- Assess the progress for the cleanup against the exit strategy.

NAMP COMPONENTS AND SUMMARY

This NAMP provides groundwater sample collection and analysis methodology for the monitoring effort at Tanks 81 A, B, and C. The following sections provide the components of the plan for Tanks 81 A, B, and C.

Components of the Plan – TANKS 81 A, B, AND C

Groundwater will be monitored for the COC isopropyl benzene to assess the effectiveness of natural attenuation as a treatment for the surficial aquifer at Tanks 81 A, B, and C. Six shallow monitoring wells and five intermediate monitoring wells located throughout the groundwater plume at Tanks 81 A, B, and C will be sampled to monitor groundwater plume size, chemical concentrations, and movement of the plume. The monitoring program will begin with quarterly sampling for years one and two and semi-annual sampling in years three, four, and five. Groundwater monitoring will continue until the FDEP GCTL is attained or unless, during an annual review, site conditions suggest that a different cleanup method should be considered. Figure 5 presents the location of the groundwater monitoring wells that will be sampled as part of this monitoring plan.

Groundwater Measurements and Sampling

During each sampling event, synoptic groundwater level measurements will be obtained from each monitoring well at the site. Because the aquifer is very flat, groundwater levels will be collected from all of the wells in the vicinity of the plume as listed below:

Shallow Aquifer

- CEF-P25-01S
- CEF-081-02S
- CEF-081-08SR
- CEF-081-09S
- CEF-081-10S
- CEF-081-11S
- CEF-081-12S
- CEF-081-13S
- CEF-081-14S
- CEF-081-15S
- CEF-081-16S
- CEF-081-17S

Intermediate Aquifer

- CEF-081-01I
- CEF-081-02I
- CEF-081-03I
- CEF-081-04I
- CEF-081-05I
- CEF-081-18I
- CEF-081-19I
- CEF-081-20I
- CEF-081-21I
- CEF-081-22I

Measurements will be collected with a water interface probe (or equivalent) using the marked location on the top of the well casing as the reference point. Groundwater level measurements will be recorded to the nearest 0.01 foot.

Groundwater samples will be obtained from 11 monitoring wells during each sampling event and submitted for fixed-base laboratory analysis (Figure 5). The following wells will be sampled and analyzed for isopropyl benzene only:

- CEF-081-04I
- CEF-081-17S
- CEF-081-08SR
- CEF-081-09S
- CEF-081-14S
- CEF-081-15S
- CEF-081-16S
- CEF-081-18I
- CEF-081-19I
- CEF-081-21I
- CEF-081-22I

Teflon[®] and surgical-grade silicon tubing will be used for sample collection. Groundwater samples will be collected using the “straw” method for volatile organic compounds (VOCs) and will be discharged into the appropriate sample bottles for analysis. Samples requiring preservation will be collected in pre-preserved bottles provided by the laboratory.

Procedures will be in accordance with TtNUS SOPs and FDEP SOPs. Since the site is in Florida, the FDEP SOPs will take precedence if there is a conflict between the two guidance documents unless otherwise directed.

Monitoring Parameters

During this monitoring period, data evaluation will be conducted after each sampling event. The results of the data evaluation will be used to make recommendations for continued monitoring and/or modifications in approach or methodology to ensure adequate and appropriate data collection to achieve the purposes of this NAMP. In anticipation of natural attenuation in 5 years, recommended milestone objectives for annual evaluation of remediation progress will also be provided in accordance with Chapter 62-770.690(7)(g), FAC.

The recommended COC for this NAMP is isopropyl benzene and is the only parameter to be analyzed for groundwater samples collected at Tanks 81 A, B, and C under United States Environmental Protection Agency Method SW-846 8620B (VOCs). In addition to regular calibration of field equipment and appropriate documentation, quality control samples will be collected during the field monitoring activities.

During sampling activities, one trip blank, consisting of one vial, shall be placed in each cooler that contains environmental samples destined for VOC analysis. One field duplicate will also be collected during each sampling event.

In anticipation of natural attenuation in 5 years for the extent of the plume, the following recommended milestone objectives for annual evaluation of remediation progress is provided in accordance with Chapter 62-770.690(7)(g), FAC:

Timeline	Isopropyl benzene
End of Year 1	4 micrograms per liter (µg/L)
End of Year 2	3 µg/L
End of Year 3	2 µg/L
End of Year 4	0.8 µg/L
End of Year 5	<0.8 µg/L

DATA ASSESSMENT AND REPORTING

The recommended frequency of monitoring events will be quarterly for the first 2 years and semi-annually for the last 3 years. Upon completion of each monitoring event, plume concentrations will be documented in a groundwater monitoring report. Monitoring reports will be prepared and submitted to NAVFAC SE and the FDEP. The monitoring report will contain the following information:

- Introduction describing site location and brief discussion of site history.
- Description of groundwater activities.
- Groundwater analytical results.
- Groundwater flow conditions.
- Any other pertinent data or site changes that might affect analytical results.
- Recommendations that would assist in reaching milestones of this NAMP.

EXIT STRATEGIES

Natural Attenuation Exit Strategy

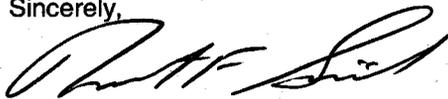
Natural attenuation monitoring is required to measure the progress of achieving the milestones at Tanks 81 A, B, and C. To prevent overly long periods of monitoring that are not cost-effectively remediating the site, various exit strategy components are included in this section. The following components of the Tanks 81 A, B, and C exit strategy should be considered during the natural attenuation monitoring program.

- **Achievement of GCTLs and Milestones:** This exit point is clear and will lead to discontinuing of the monitoring program. Once the concentration of the COC (isopropyl benzene) is less than its GCTL in all wells being monitored for two successive sampling events, then monitoring will cease and the site will be closed.
- **No Continued Reduction in COC:** An evaluation of the progress of natural attenuation at Tanks 81 A, B, and C will be performed after each natural attenuation event to evaluate potential natural attenuation pathways and to identify direct evidence of COC degradation. If at any time the Navy deems the process ineffective, they may opt to change the remediation strategy to a more active technology. The concentrations in the wells should be compared to the milestones regularly. If at any point progress toward the milestones is not being achieved, the Navy may consider exiting the natural attenuation process and opting for an active remediation alternative.

In addition to the exit from the natural attenuation program, individual wells may be removed from the program if the Navy, with agreement from FDEP, decides that continued monitoring no longer provides pertinent information. The party that is performing the sampling and reporting will provide recommendations regarding the sampling program.

Please provide any comments or direct any questions to Kara Wimble at 904-730-4669, extension 214, or myself at 412-921-8163.

Sincerely,



Robert F. Simcik, P.E.
Task Order Manager

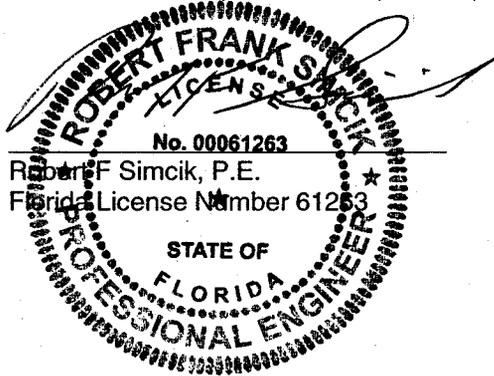
RS/kw

Enclosure

- c:
- Barbara Nwokike (1 copy)
 - Mike Hail, CH2M Hill (electronic only)
 - Rob Simcik, TtNUS (Bookcase File)
 - Mark Speranza, TtNUS (cover letter only)
 - Mark Jonnet, TtNUS (Cecil DMS)
 - Mark Perry, TtNUS (unbound)
 - Debra Humbert, TtNUS (cover letter only)
 - Project File CTO 0076 (1 copy)

CERTIFICATION

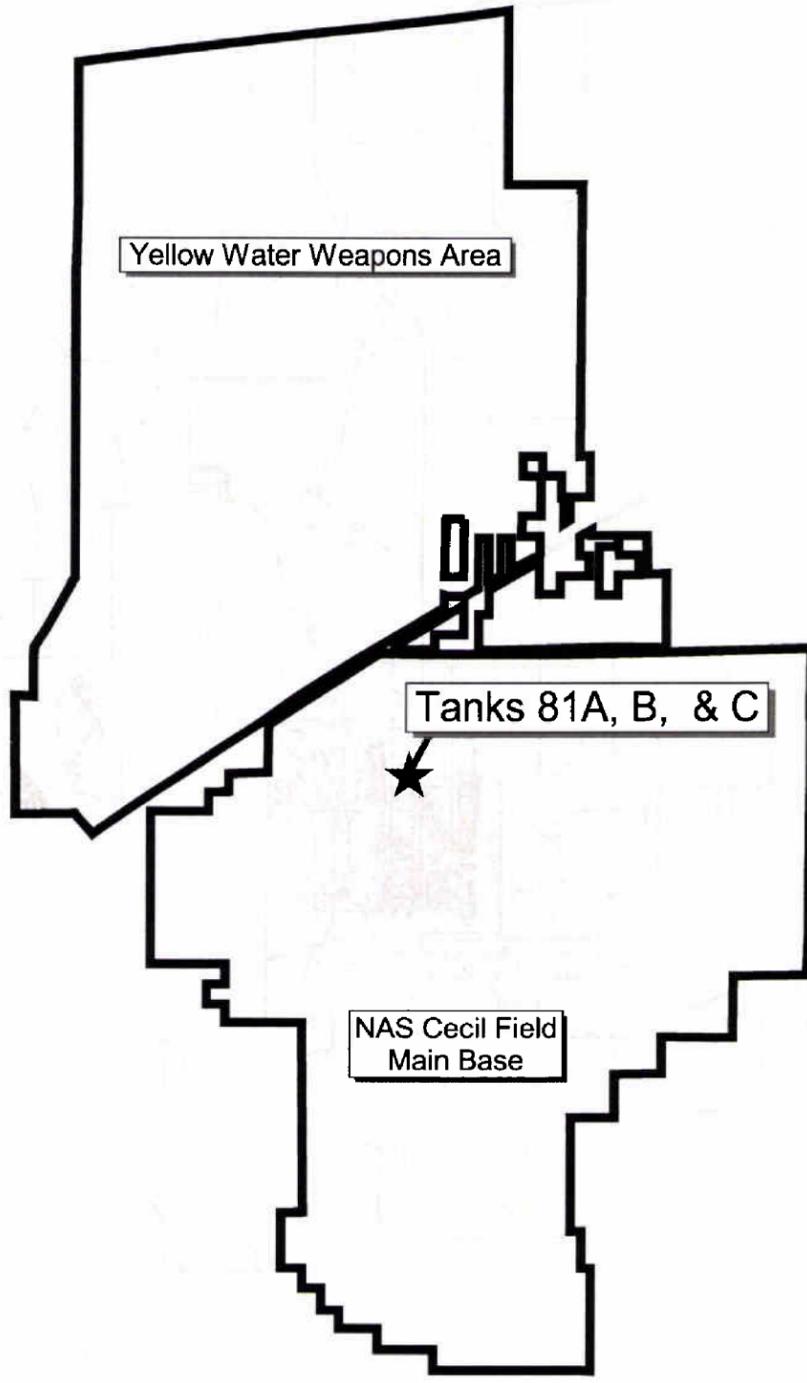
The information contained in this report is based on the investigation and associated information detailed in the text, appended to this report, and supporting documents referenced in this report. If conditions are determined to exist that differ from those described, the undersigned professional engineer should be notified to evaluate the effects of any additional information on the information described in this report. This Natural Attenuation Monitoring Plan was developed for Tanks 81 A, B, and C at Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.



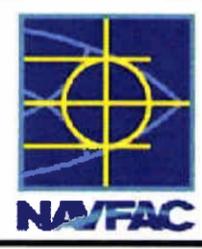
11/21/07

Date

FIGURES

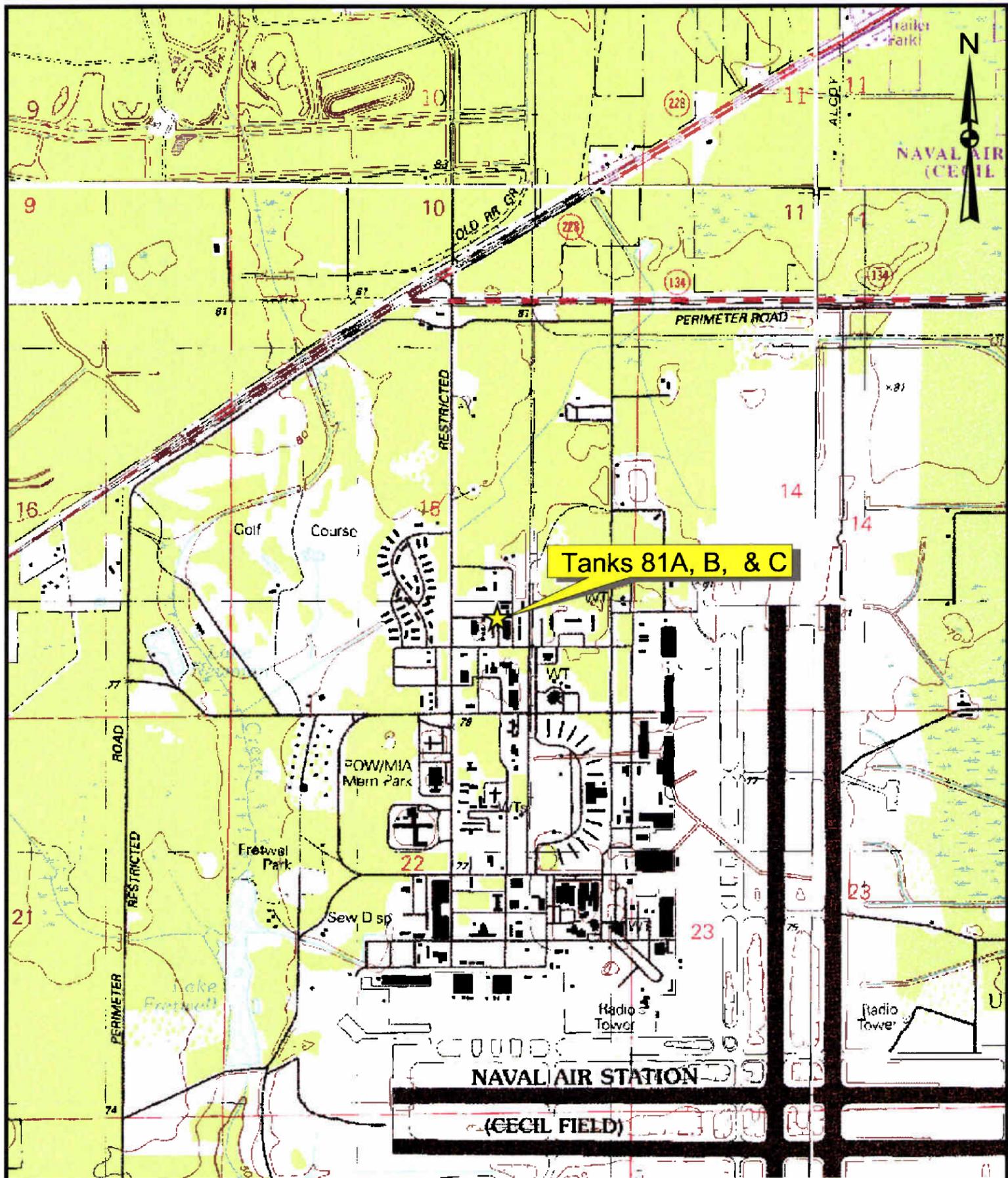


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COST/SCHEDULE AREA	
SCALE AS NOTED	



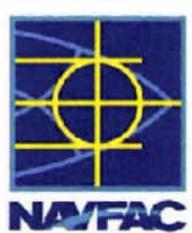
GENERAL LOCATION MAP
TANKS 81A, B, & C
NATURAL ATTENUATION MONITORING PLAN
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0746	
APPROVED BY	DATE
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DRAWING NO. FIGURE 1	REV 0



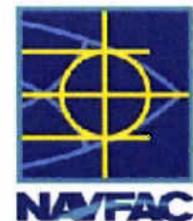
2000 0 2000 Feet

Source: USGS Fiftone Florida 7.5-Minute Topographic Quadrangle, 1993.

DRAWN BY MJJ	DATE 30Aug07		TOPOGRAPHIC MAP TANKS 81A, B, & C NATURAL ATTENUATION MONITORING PLAN NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA		CONTRACT NUMBER 0746
CHECKED BY	DATE		APPROVED BY	DATE	
COST/SCHEDULE-AREA			APPROVED BY	DATE	
SCALE AS NOTED			DRAWING NO. FIGURE 2	REV 0	

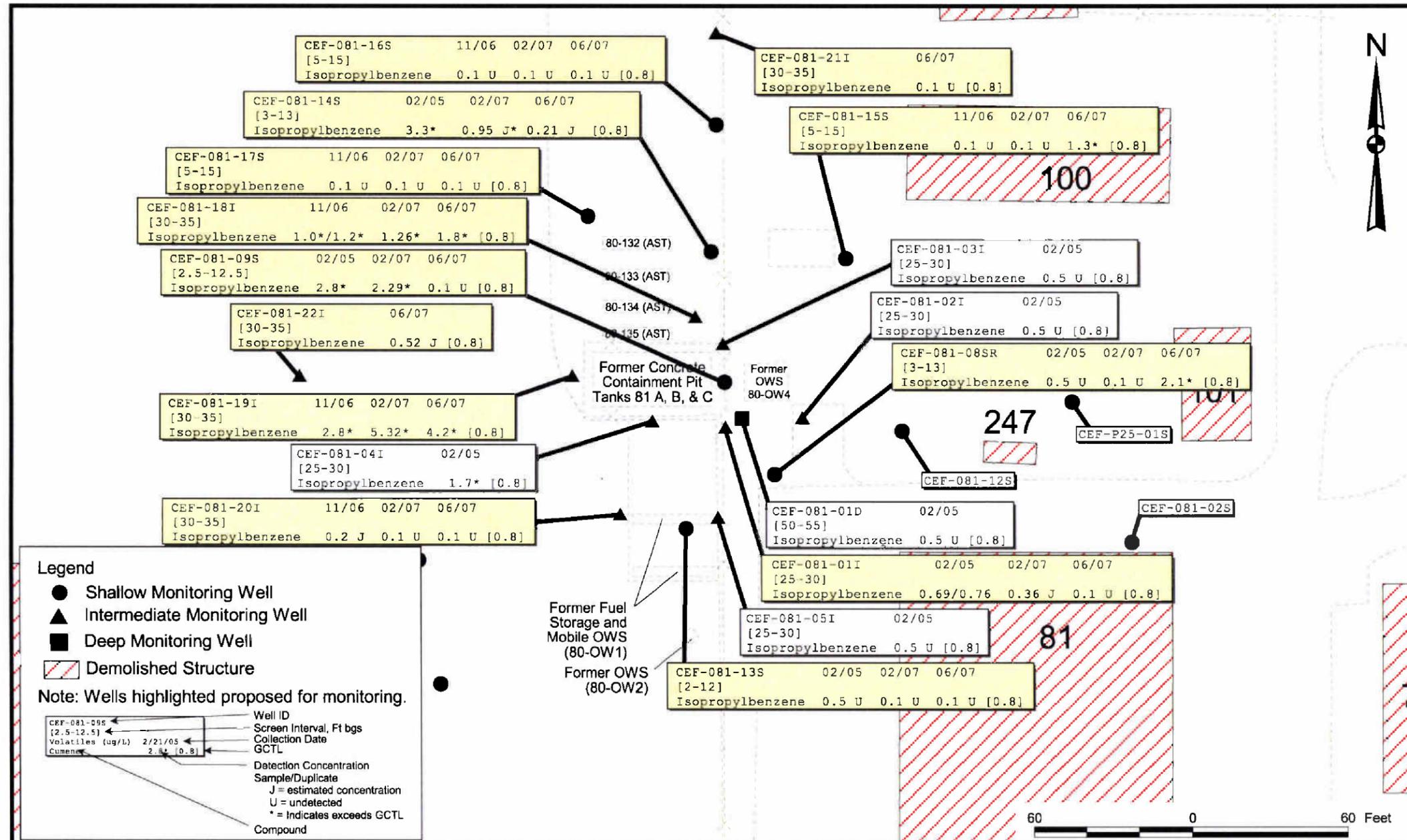


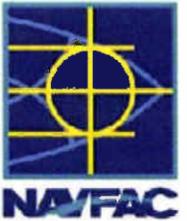
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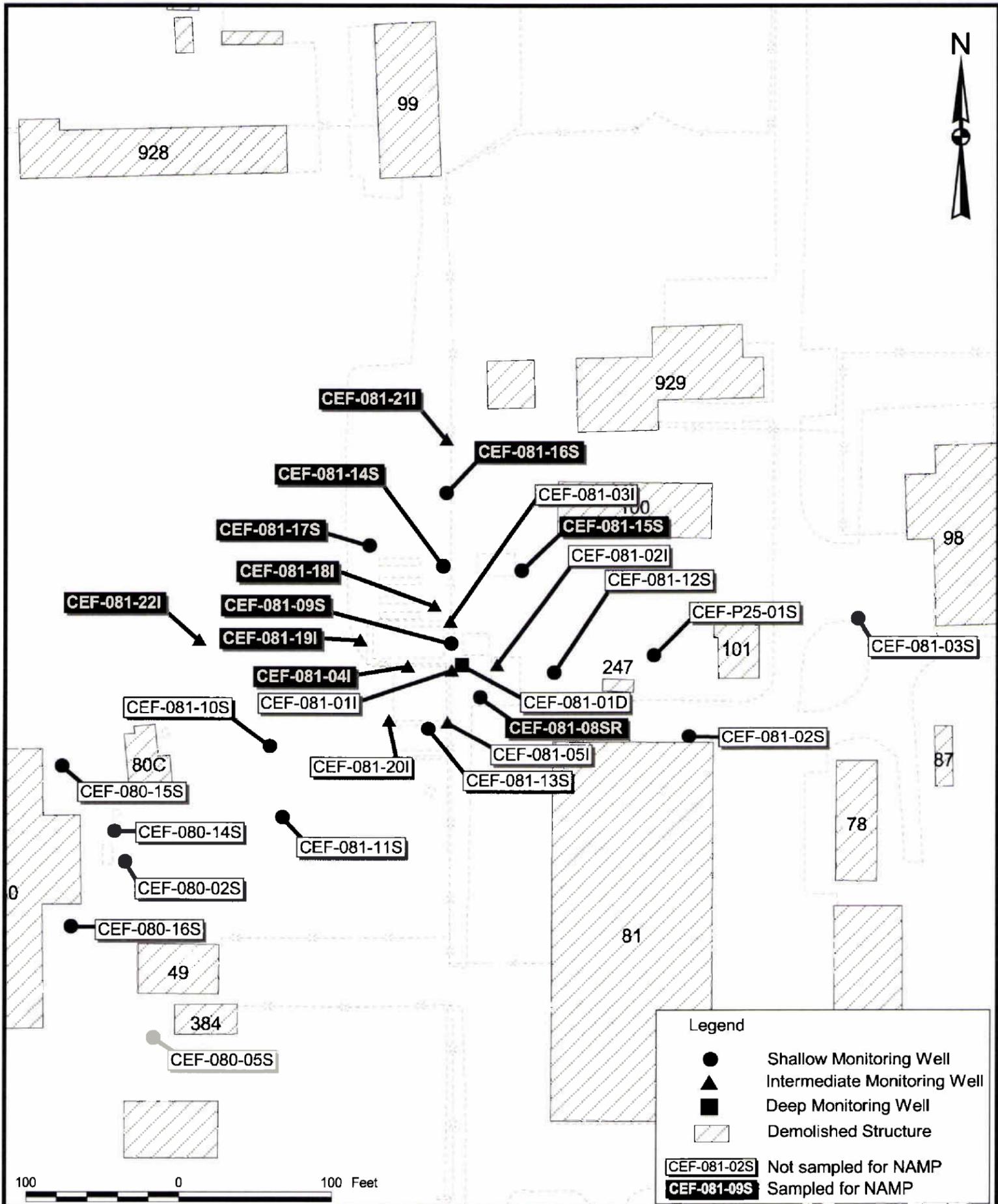


LAND USE MAP
TANKS 81A, B, & C
NATURAL ATTENUATION MONITORING PLAN
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

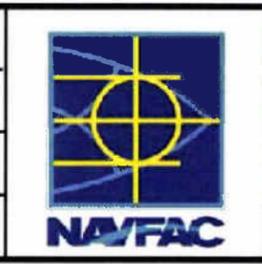
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MJJ	DATE	29Dec06		ANALYTICAL RESULTS TANKS 81 A, B, AND C NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	DRAWN BY	CONTRACT NUMBER	0746
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COST/SCHEDULE-AREA	
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MONITORING WELL LOCATION MAP
 TANKS 81A, B, & C
 NATURAL ATTENUATION MONITORING PLAN
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

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ATTACHMENT B
GROUNDWATER ANALYTICAL REPORT
SEPTEMBER 2007

Report of Analysis

Client Sample ID:	CEF-081-22I-20070919	Date Sampled:	09/19/07
Lab Sample ID:	F52752-1	Date Received:	09/22/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Tanks 81ABC N3996-WR03		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0022536.D	1	10/02/07	MM	n/a	n/a	VM923
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	0.43	1.0	0.21	ug/l	I

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		87-116%
17060-07-0	1,2-Dichloroethane-D4	102%		76-127%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

U = Not detected MDL - Method Detection Limit
 RL = Reporting Limit = PQL
 L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
 V = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CEF-081-04I-20070919	
Lab Sample ID: F52752-2	Date Sampled: 09/19/07
Matrix: AQ - Ground Water	Date Received: 09/22/07
Method: SW846 8260B	Percent Solids: n/a
Project: Tanks 81ABC N3996-WR03	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0022537.D	1	10/02/07	MM	n/a	n/a	VM923
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	2.3	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		87-116%
17060-07-0	1,2-Dichloroethane-D4	102%		76-127%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	103%		84-120%

<p>U = Not detected MDL - Method Detection Limit</p> <p>RL = Reporting Limit = PQL</p> <p>L = Indicates value exceeds calibration range</p>	<p>I = Result > = MDL but < RL J = Estimated value</p> <p>V = Indicates analyte found in associated method blank</p> <p>N = Indicates presumptive evidence of a compound</p>
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Report of Analysis

Client Sample ID:	CEF-081-09I-20070919	Date Sampled:	09/19/07
Lab Sample ID:	F52752-3	Date Received:	09/22/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Tanks 81ABC N3996-WR03		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	M0022539.D	1	10/02/07	MM	n/a	n/a	VM923
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	1.3	1.0	0.21	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
1868-53-7	Dibromofluoromethane	105%		87-116%		
17060-07-0	1,2-Dichloroethane-D4	104%		76-127%		
2037-26-5	Toluene-D8	100%		86-112%		
460-00-4	4-Bromofluorobenzene	101%		84-120%		

(a) Sample was treated with an anti-foaming agent.

U = Not detected MDL - Method Detection Limit
 RL = Reporting Limit = PQL
 L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
 V = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CEF-081-15S-20070919	
Lab Sample ID: F52752-4	Date Sampled: 09/19/07
Matrix: AQ - Ground Water	Date Received: 09/22/07
Method: SW846 8260B	Percent Solids: n/a
Project: Tanks 81ABC N3996-WR03	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0022538.D	1	10/02/07	MM	n/a	n/a	VM923
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	1.0	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		87-116%
17060-07-0	1,2-Dichloroethane-D4	104%		76-127%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	100%		84-120%

<p>U = Not detected MDL - Method Detection Limit</p> <p>RL = Reporting Limit = PQL</p> <p>L = Indicates value exceeds calibration range</p>	<p>I = Result > = MDL but < RL J = Estimated value</p> <p>V = Indicates analyte found in associated method blank</p> <p>N = Indicates presumptive evidence of a compound</p>
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Report of Analysis

Client Sample ID: CEF-081-181-20070920	
Lab Sample ID: F52752-5	Date Sampled: 09/20/07
Matrix: AQ - Ground Water	Date Received: 09/22/07
Method: SW846 8260B	Percent Solids: n/a
Project: Tanks 81ABC N3996-WR03	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0051275.D	1	10/02/07	LD	n/a	n/a	VC2077
Run #2	B048894.D	1	10/04/07	LD	n/a	n/a	VB2053

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	1.5	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%	104%	87-116%
17060-07-0	1,2-Dichloroethane-D4	98%	102%	76-127%
2037-26-5	Toluene-D8	97%	95%	86-112%
460-00-4	4-Bromofluorobenzene	100%	101%	84-120%

<p>U = Not detected MDL - Method Detection Limit</p> <p>RL = Reporting Limit = PQL</p> <p>L = Indicates value exceeds calibration range</p>	<p>I = Result > = MDL but < RL J = Estimated value</p> <p>V = Indicates analyte found in associated method blank</p> <p>N = Indicates presumptive evidence of a compound</p>
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Report of Analysis

Client Sample ID:	CEF-081-17S-20070920	Date Sampled:	09/20/07
Lab Sample ID:	F52752-6	Date Received:	09/22/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Tanks 81ABC N3996-WR03		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0051276.D	1	10/02/07	LD	n/a	n/a	VC2077
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	0.21 U	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		87-116%
17060-07-0	1,2-Dichloroethane-D4	99%		76-127%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	101%		84-120%

U = Not detected MDL - Method Detection Limit
 RL = Reporting Limit = PQL
 L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
 V = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-081-14S-20070920	Date Sampled:	09/20/07
Lab Sample ID:	F52752-7	Date Received:	09/22/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Tanks 81ABC N3996-WR03		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B048871.D	1	10/03/07	LD	n/a	n/a	VB2052
Run #2	C0051314.D	1	10/04/07	LD	n/a	n/a	VC2079

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	0.21 U	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%	106%	87-116%
17060-07-0	1,2-Dichloroethane-D4	100%	101%	76-127%
2037-26-5	Toluene-D8	96%	96%	86-112%
460-00-4	4-Bromofluorobenzene	100%	102%	84-120%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
 RL = Reporting Limit = PQL V = Indicates analyte found in associated method blank
 L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-081-08SR-20070920	
Lab Sample ID:	F52752-8	Date Sampled: 09/20/07
Matrix:	AQ - Ground Water	Date Received: 09/22/07
Method:	SW846 8260B	Percent Solids: n/a
Project:	Tanks 81ABC N3996-WR03	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0051262.D	1	10/02/07	LD	n/a	n/a	VC2077
Run #2	B048877.D	1	10/03/07	LD	n/a	n/a	VB2052

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	0.21 U	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%	103%	87-116%
17060-07-0	1,2-Dichloroethane-D4	105%	104%	76-127%
2037-26-5	Toluene-D8	99%	99%	86-112%
460-00-4	4-Bromofluorobenzene	104%	103%	84-120%

U = Not detected MDL - Method Detection Limit
 RL = Reporting Limit = PQL
 L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
 V = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-081-19I-20070920	Date Sampled:	09/20/07
Lab Sample ID:	F52752-9	Date Received:	09/22/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Tanks 81ABC N3996-WR03		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0051256.D	1	10/02/07	LD	n/a	n/a	VC2077
Run #2	B048878.D	1	10/03/07	LD	n/a	n/a	VB2052

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	2.8	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%	103%	87-116%
17060-07-0	1,2-Dichloroethane-D4	105%	102%	76-127%
2037-26-5	Toluene-D8	103%	98%	86-112%
460-00-4	4-Bromofluorobenzene	104%	99%	84-120%

U = Not detected MDL - Method Detection Limit
 RL = Reporting Limit = PQL
 L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
 V = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-081-16S-20070920	Date Sampled:	09/20/07
Lab Sample ID:	F52752-10	Date Received:	09/22/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Tanks 81ABC N3996-WR03		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0051257.D	1	10/02/07	LD	n/a	n/a	VC2077
Run #2	B048890.D	1	10/04/07	LD	n/a	n/a	VB2053

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	0.21 U	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	103%	87-116%
17060-07-0	1,2-Dichloroethane-D4	103%	99%	76-127%
2037-26-5	Toluene-D8	99%	98%	86-112%
460-00-4	4-Bromofluorobenzene	103%	103%	84-120%

U = Not detected MDL - Method Detection Limit
 RL = Reporting Limit = PQL
 L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
 V = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-081-DUP01-20070920	Date Sampled:	09/20/07
Lab Sample ID:	F52752-11	Date Received:	09/22/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Tanks 81ABC N3996-WR03		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0051258.D	1	10/02/07	LD	n/a	n/a	VC2077
Run #2	B048891.D	1	10/04/07	LD	n/a	n/a	VB2053

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	2.8	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	104%	87-116%
17060-07-0	1,2-Dichloroethane-D4	104%	99%	76-127%
2037-26-5	Toluene-D8	98%	97%	86-112%
460-00-4	4-Bromofluorobenzene	103%	99%	84-120%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
 RL = Reporting Limit = PQL V = Indicates analyte found in associated method blank
 L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-081-211-20070921	Date Sampled:	09/21/07
Lab Sample ID:	F52752-12	Date Received:	09/22/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Tanks 81ABC N3996-WR03		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0051259.D	1	10/02/07	LD	n/a	n/a	VC2077
Run #2	B048892.D	1	10/04/07	LD	n/a	n/a	VB2053

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

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	0.21 U	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%	103%	87-116%
17060-07-0	1,2-Dichloroethane-D4	102%	104%	76-127%
2037-26-5	Toluene-D8	95%	101%	86-112%
460-00-4	4-Bromofluorobenzene	101%	103%	84-120%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
 RL = Reporting Limit = PQL V = Indicates analyte found in associated method blank
 L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound