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NAS PENSACOLA
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TETRA TECH NUS, INC.
3360 Capital Circle N.E. ▪ Suite B ▪ Tallahassee, Florida 32308
(850) 385-9899 ▪ FAX (850) 385-9860 ▪ www.tetratech.com

TtNUS/TAL-08-003/0704-5.1

February 7, 2008

Project Number N00704

SOUTHNAVFACENGCOM
ATTN: Patty Marajh-Whittemore
Remedial Project Manager
NAS Jacksonville Building 103
Jacksonville, FL 32212

Reference: CLEAN Contract Number N62467-04-D-0055
Contract Task Order Number 0071

Subject: Quarterly Groundwater Monitoring Letter Report for Underground Storage Tank (UST) Site 14, Tanks 681 and 682, Naval Air Station (NAS) Pensacola, Pensacola, Florida

Dear Mrs. Marajh-Whittemore:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Quarterly Groundwater Monitoring Letter Report for UST Site 14, NAS Pensacola. This report was prepared for the United States Navy (Navy) Naval Facilities Engineering Command Southeast (NAVFACSE) for the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-04-D-0055. This letter report provides the results of the groundwater sampling event conducted in October 2007 for UST Site 14 and summarizes the groundwater sampling results to date.

Site Summary

NAS Pensacola is located in southeastern Escambia County, approximately five miles southwest of the city limits of Pensacola, Florida. The installation encompasses 5,800 acres. NAS Pensacola occupies a peninsula bordered by Bayou Grande to the north, Pensacola Bay to the east and south and Big Lagoon to the south.

UST Site 14 consists of USTs 681 and 682 located at the former NAS Pensacola petroleum storage facility (Figure 2). The area surrounding the former USTs is fenced and contains the pump house buildings for the UST system, another small building, and a shed as shown in Figure 2. The cut and cover tanks were installed in December 1943, and each tank had a storage capacity of approximately 1.1 million gallons. The site is currently inactive, and the two USTs were taken out of service and closed in place in April 1995. At the time the UST system was closed, the tanks were used to store diesel fuel marine (DFM). In addition to the DFM storage, the USTs have historically been used to store various vehicle fuels. Information regarding site geology, hydrogeology, physical setting, etc. is presented in the original contamination assessment report (CAR) completed by EnSafe/Allen & Hoshall in 1996 and is not repeated in this document.

Site Assessment History

A Site Assessment Report (SAR) was completed for the site in January 2000, followed by three SAR Addendas (SARAs) completed in January 2001, October 2001 and April 2002, respectively. In 2002, the final recommendation of natural attenuation monitoring was approved by the Florida Department of Environmental Protection (FDEP). In the Monitoring Only Plan (MOP) Approval Order dated July 2, 2002, the FDEP established site-specific action levels for monitoring wells TW-04, MW-01S, MW-02S, and MW-04S. These action levels were part of the 5-year Natural Attenuation Monitoring Plan. However, in April 2005 FDEP adopted new natural attenuation default criteria for sites within the state. In view of the updated standards, TtNUS has compared the analytical results reported in this document to the current risk-based standards.

Quarterly natural attenuation monitoring reports documenting the first and second groundwater monitoring events were submitted on December 13, 2002 and on February 18, 2003, respectively. Based on the quarterly groundwater monitoring results, it was concluded that natural attenuation alone had not been effective in reducing site contaminant concentrations.

A Treatability Study for Oxygen Release Compound® (ORC®) injection to enhance biodegradation at UST Site 14 was conducted in 2003 and 2004. The ORC® injection event took place from July 8-10, 2003. ORC® injection locations are shown in Figure 3. Groundwater monitoring was performed from September 2003 through June 2004. In October 2004, TtNUS submitted the Final Treatability Study Report, including data from the four quarters of groundwater monitoring, for UST Site 14. The data collected during the Treatability Study did not indicate a conclusive decrease in concentrations of site contaminants.

Following the treatability study, supplemental assessment of site soils and groundwater, including installation of additional monitoring wells, were conducted in June and July, 2005. Accordingly, the listed compounds were added to the analyte list for groundwater monitoring:

- benzene, toluene, ethylbenzene and xylenes (BTEX),
- methyl tertiary-butyl ether (MTBE), and
- total recoverable petroleum hydrocarbons (TRPH).

The site-specific natural attenuation action level criteria utilized at the inception of the monitoring plan have been replaced by the current FDEP natural attenuation default criteria adopted in April 2005. Results of the 2005 assessment indicate that concentrations of petroleum hydrocarbons in groundwater were overall decreasing and that geochemical trends indicated some increase in oxidizing conditions.

Following four quarters of monitoring concluding in January 2006, it was determined that additional monitored natural attenuation was warranted. This supplemental quarterly monitoring was initiated at Site 14 in April 2007. The third quarterly monitoring event was conducted in October 2007 and is summarized in this letter report. Quarterly natural attenuation monitoring will continue for a total of four quarters or until concentrations of all COCs are less than Florida GCTLs for two consecutive quarters.

Based on a TtNUS response to FDEP comments and the final quarterly monitoring report submitted on May 4, 2006, two key changes to the monitoring plan were implemented. These changes include that volatiles and TRPH analysis were discontinued and that only six wells (MW-01S, MW-02S, TW-04, MW-10S, MW-11S and MW-12S) were included as part of the future sampling plan.

Contaminant Source

The groundwater contaminant plume at Site 14 appears to be fuel related and is located in the area of monitoring wells MW-02S and TW-04, with the groundwater contamination probably originating at the former Tank 681 location. Groundwater data were not previously available from the area directly north

and northwest of TW-04. Therefore, seven new wells were installed in June 2005. One year of quarterly sampling revealed no exceedances in these previously unsampled areas. Monitoring well MW-12S is an upgradient well and has not shown any evidence of impact from other off-site facility operations.

Groundwater Sampling Activities

TtNUS personnel conducted this quarterly groundwater monitoring event on October 24-25, 2007. The quarterly groundwater monitoring event included:

- measurement of static water levels to determine groundwater elevation and flow direction,
- collection of groundwater samples for laboratory contaminant analysis, and
- field and laboratory analyses for natural attenuation parameters.

Groundwater samples for field and laboratory analysis were collected from monitoring wells MW-01S, MW-02S, MW-10S, MW-11S, MW-12S and TW-04. The groundwater samples were collected in accordance with current FDEP Standard Operating Procedures (SOPs). Depth-to-water was measured, and the wells were purged prior to sample collection. Purging was accomplished with a peristaltic pump using the low flow purge technique. During purging, field parameters [pH, conductivity, temperature, dissolved oxygen (DO), and oxidation-reduction potential (ORP)] were measured at approximately 3 to 5 minute intervals using a YSI® 556MPS multiparameter water quality instrument equipped with a flow-through cell. Sample turbidity was monitored using a LaMotte Model 2020 Turbidimeter. The instruments were calibrated according to the manufacturer's specifications at the beginning of each day.

Following the well purging activities, groundwater from each well was analyzed in the field for natural attenuation parameters; DO, carbon dioxide, hydrogen sulfide, alkalinity and ferrous iron. Groundwater Sample Log Sheets compiled during purging and sampling at each location are provided in Appendix A.

After collection, groundwater samples were placed on ice and shipped overnight via Federal Express to ENCO Laboratories, Inc., located in Jacksonville, Florida and Microseeps Laboratories located in Pittsburgh, Pennsylvania.

Laboratory Analysis

The six groundwater samples were analyzed for the following:

- Polynuclear Aromatic Hydrocarbons (PAHs) by USEPA Method SW-846 8270C
- Dissolved iron by USEPA Method SW-846 6010B
- Total Organic Carbon (TOC) by USEPA Method 415.1
- Dissolved gasses; methane, ethane, and ethene by AM20GAX
- Total alkalinity by USEPA Method 310.2
- chloride, nitrite, nitrate and sulfate by USEPA Method 300.0
- Phosphorus by USEPA Method 365.4
- Orthophosphate as phosphorus by USEPA Method 365.1
- Carbon dioxide and hydrogen by AM20GAX
- Sulfide by USEPA Method 376.1
- Ammonia as nitrogen by USEPA Method 350.1
- Total Kjehldahl Nitrogen (TKN)) by USEPA Method 351.2

The groundwater analytical reports for the third quarter received a cursory data validation and are included in Attachment B.

Groundwater Elevation and Flow Direction

The water level data collected on October 24, 2007, are provided in Attachment A. The groundwater elevations for this sampling event are summarized in Table 1. The top-of-casing elevations for all monitoring wells at UST Site 14 were surveyed by TtNUS. Static water levels were used to estimate groundwater elevation and flow direction at the site (Figure 4). Free product was not detected in any of the on-site monitoring wells.

Groundwater elevations recorded during the second quarterly monitoring event indicate that groundwater in the UST Site 14 area flows southeast. This flow direction is consistent with previous observations.

Groundwater Analytical Results and Discussion

The analytical results for the groundwater samples collected between June 2003 and October 2007 are summarized in Table 2 and presented in Figure 5. Figures 6 and 7 depict the concentration trends for selected PAHs that have historically been detected in groundwater samples from monitoring wells TW-04 and MW-02S, respectively.

The laboratory analytical results were compared to the groundwater cleanup target levels specified in 62-777 F.A.C. Note that in April 2005, the GCTL for naphthalene decreased from 20 µg/L to 14 µg/L, and the GCTL for 1-methylnaphthalene and 2-methylnaphthalene increased from 20 µg/L to 28 µg/L.

PAHs

No PAHs were reported in groundwater samples at concentrations exceeding the FDEP GCTLs during the October 24-25 2007 third quarter sampling event. PAHs were not detected above laboratory method detection limits in aqueous samples from MW-01S and MW-12S. The PAH compound naphthalene was detected in MW-02S, TW-04 and MW-11S at concentrations as high as 6.5 µg/L. Furthermore, 1-methylnapthalene was reported in monitoring wells MW-02S, TW-04, MW-10S and MW-11S at concentrations ranging from 0.03 µg/L (estimated) to 19 µg/L. 2-methynapthalene was detected in the monitoring wells MW-02S, TW-04 and MW-11S at concentrations ranging from 0.11 µg/L to 12 µg/L. Similarly, fluorene and phenanthrene were detected in the same three wells at levels below their respective GCTLs. Acenaphthene, which has a FDEP GCTL of 200 µg/L, was detected in MW-02S and MW-11S at a concentration of 2.6 µg/L and 0.24 µg/L, respectively. However, as indicated above, all detected concentrations of the PAH compounds were less than the Florida GCTLs.

Natural Attenuation Parameter Results and Discussion

The field measurements for natural attenuation parameters are summarized in Table 3. Measurements recorded during the baseline monitoring event provide benchmark concentrations for the purpose of evaluating natural attenuation trends throughout the monitoring period. The baseline monitoring event was the last monitoring event prior to ORC® injection. Results for the laboratory analyzed natural attenuation sampling recommended by the Site Assessment Report (SAR) are listed in Table 4. Preferred ranges, set forth in the SAR, are included in both tables.

Indicators of natural attenuation and the likely aerobic biodegradation of contaminants are directly related to changes in groundwater chemistry. Indicators include the biological consumption of oxygen, nitrate, and sulfate as well as the generation of byproducts such as dissolved iron, manganese, and methane; moreover, increases in total alkalinity and carbon dioxide are found. These geochemical indicators can be used to estimate the site-specific potential for the biodegradation of contaminants within the aquifer.

Dissolved oxygen (DO) acts as a primary substrate or co-substrate during aerobic metabolism and is the single most efficient electron acceptor responsible for the biodegradation of natural or anthropogenic organic carbon. DO concentrations were determined in the field using CHEMets® kits. During the third monitoring event of the Treatability Study, measured DO concentrations ranged from 1.0 mg/L in MW-02S to 3.0 mg/L in TW-04 and MW-12S. None of the monitoring wells sampled at Site 14 had reported DO concentrations within the preferred range (>5mg/L). MW-01S is the only well in the study area to have had a DO concentration equal to 5 mg/L. This concentration was recorded only once during sampling history in July 2005.

Carbon dioxide levels are monitored as an indicator of microbial activity. Carbon dioxide is the carbon product of biodegradation for respiration processes other than methanogenesis. In the field, carbon dioxide is measured in groundwater using Chemetrics Titrets®. Field testing revealed the concentration of carbon dioxide in groundwater ranged from 16 mg/L in MW-01S to 200 mg/L in MW-11S. Reports from groundwater samples analyzed at the off-site laboratory for carbon dioxide exhibited similar results.

Alkalinity is the amount of dissolved minerals in the groundwater. The greatest contributing factor to alkalinity levels is the reaction between carbon dioxide in the groundwater and minerals in the surrounding soil. Groundwater was analyzed in the field for alkalinity using Chemetrics Titrets®. The resulting alkalinity concentrations ranged from 30 mg/L in MW-10S to 110mg/L in MW-01S. Groundwater samples analyzed in the laboratory had marginally lower alkalinity levels than samples analyzed in the field,

Ferrous iron (Fe^{2+}) is the soluble end product of the reduction of ferric iron (Fe^{3+}). The absence of, or decrease of ferrous iron may indicate that aerobic conditions exist. Conversely, the presence of or increase in ferrous iron would indicate anaerobic or reducing conditions. Microorganisms will use ferric iron as electron acceptors under anaerobic conditions after DO and nitrate have been depleted. Ferrous iron was analyzed in the field using HACH kits. During the third quarter sampling event, the concentration of ferrous iron ranged from 0.0mg/L or non-detect in MW-11S to 2.0 mg/L in MW-02S. The concentrations of ferrous iron in groundwater reported from the laboratory ranged from below method detection limits in MW-12S to 2.5 mg/L detected in MW-02S.

Sulfate can be used as an electron acceptor after DO, nitrate, and ferric iron are consumed. Under these conditions sulfate is reduced to sulfide or sulfide compounds (such as H_2S or HS^-). The presence of sulfate may be indicative of oxidizing conditions, the oxidation of reduced sulfides to sulfates is occurring, and conditions for aerobic biodegradation are favorable. Field analysis of sulfate was not conducted. Sulfate analysis was conducted in the laboratory only. The lowest concentration of sulfate was 3.4 mg/L and was detected in TW-04S. The highest concentration of sulfate was 73 mg/L and was detected in MW-10S.

All groundwater samples were analyzed in the laboratory for sulfide. Field test kits were not utilized or required. Results from the laboratory reveal sulfide concentrations below detection limits in all wells except MW-02S. The concentration of sulfide encountered at the aforementioned location was 0.75 mg/L (estimated).

Field analyses for hydrogen sulfide were conducted using kits supplied by HACH. Field testing conducted during sampling revealed concentrations of hydrogen sulfide as high as 1.5 mg/L from MW-02S. Hydrogen sulfide was not detected in groundwater samples from MW-01S and MW-12S.

According to FDEP SOPs, certain groundwater parameters; including temperature, pH and specific conductance, must be monitored during well purging. These measurements were recorded in the groundwater sample log sheets located in Attachment A. Additionally, the final values for select parameters at the time of sampling are included in table 3. Three of the parameters are discussed below.

Microbial activity and presence can be affected by the pH of the groundwater. Petroleum metabolizing microorganisms generally prefer pH values between 5 and 9 standard units. Reported pH values from wells sampled ranged from 5.46 to 8.00 and were within the preferred pH range. pH values were determined using the YSI 556 water quality monitor.

Groundwater temperatures ranged from 23.28 degrees Celsius (°C) to 25.81 °C, with all groundwater temperatures in the optimal range of greater than 20°C for biodegradation to occur. Groundwater temperatures were recorded from the YSI 556 water quality monitor during sampling.

The ORP of groundwater is indicative of the redox state that may be present based on the relative tendency of the groundwater to accept or transfer electrons. ORP values recorded during the October 2007 sampling event ranged from -8.0 to 61.0 millivolts (mV) which indicates that potential groundwater conditions are slightly reducing to slightly oxidizing. ORP values were recorded from the YSI 556 water quality monitor during sampling.

Light Gases Results

Monitoring of light gases (methane, ethane, ethene, carbon dioxide and hydrogen) was conducted as part of the overall monitoring plan. The analytical results for groundwater sampled during the study period are listed in Table 5.

Conclusions/Recommendations

Analysis results indicate that the primary contaminants of concern at Site 14, PAHs, are still present in the groundwater at UST Site 14. However, after seven quarters of Monitored Natural Attenuation sampling following the previous Treatability Study, two consecutive quarters of sampling have not detected any exceedances of FDEP GCTLs. Therefore, TtNUS recommends that the site be granted a Site Rehabilitation Completion Order (SRCO) for No Further Action (NFA) without controls. Following FDEP approval of the SRCO for NFA, all monitoring wells at the site should be properly abandoned.

If you have any questions with regard to this submittal, please contact me by calling (850) 385-9899 or via e-mail at gerry.walker@ttnus.com.

Sincerely,

Gerald Walker

Gerald Walker PG
Florida License No. PG-0001180
Task Order Manager

GW/co

Attachments (2)
c: Ms. T. Bolanos, FDEP
Mr. G. Campbell, NAS Pensacola
Ms. D. Humbert, TtNUS (cover letter only)
Mr. M. Perry/File, TtNUS (unbound copy)
Project File/Tallahassee

TABLES

TABLE 1

GROUNDWATER ELEVATION SUMMARY - SITE 14
October 24, 2007
QUARTERLY MONITORING LETTER REPORT
NAVAL AIR STATION PENSACOLA
PENSACOLA, FLORIDA

Well Designation	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet BTOC)	Depth to Water (feet BTOC)	Thickness of Free Product (feet)	Groundwater Elevation (feet)*
MW-01S	10/24/2007	1600	18.75	23.02	16.83	NA	1.92
MS-02S	10/24/2007	1357	20.46	23.22	18.16	NA	2.30
MW-03S	10/24/2007	1354	18.56	23.58	16.07	NA	2.49
MW-04S	10/24/2007	1328	24.29	22.91	18.96	NA	5.33
TW-04	10/24/2007	1343	25.21	28.24	22.95	NA	2.26
MW-05S	10/24/2007	1330	20.79	22.89	15.71	NA	5.08
MW-06S	10/24/2007	1333	24.20	24.75	19.45	NA	4.75
MW-07S	10/24/2007	1335	22.55	24.54	18.51	NA	4.04
MW-08S	10/24/2007	1338	21.95	24.63	18.05	NA	3.90
MW-09S	10/24/2007	1350	20.28	24.65	17.43	NA	2.85
MW-10S	10/24/2007	1345	24.46	29.70	22.49	NA	1.97
MW-11S	10/24/2007	1347	25.66	29.53	23.46	NA	2.20
MW-12S	10/24/2007	1340	26.03	29.65	22.43	NA	3.60
MW-100	10/24/2007	1352	25.46	28.41	23.07	NA	2.39

Notes:
* = Elevation based on the known casing elevation of 18.56 feet above mean sea level at monitoring well MW-03S
BTOC = Below Top Of Casing
NA = Not Applicable

TABLE 2
SUMMARY OF LABORATORY DETECTED ANALYTES IN GROUNDWATER
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	GCTL[1]	NADC[2]	NASP-681/682											
WELL ID			MW01S											
SAMPLING EVENT			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
COLLECTION DATE			06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	07/20/05	10/24/05	01/25/06	04/19/06	04/18/07	07/24/07	10/25/07
VOLATILES (ug/L)														
BENZENE	1	10	NA	NA	NA	NA	NA	1 U	0.3 U	NS	1 U	NA	NA	NA
ETHYLBENZENE	30	300	NA	NA	NA	NA	NA	1 U	0.2 U	NS	1 U	NA	NA	NA
METHYL TERT-BUTYL ETHER	20	200	NA	NA	NA	NA	NA	2 U	0.8 U	NS	1 U	NA	NA	NA
TOLUENE	40	400	NA	NA	NA	NA	NA	0.34 J	0.2 U	NS	1 U	NA	NA	NA
TOTAL XYLENES	20	200	NA	NA	NA	NA	NA	3 U	0.8 U	NS	1 U	NA	NA	NA
Semivolatile Organics (ug/L)														
1-METHYLNAPHTHALENE	28	280	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.09 U	NS	0.052 U	0.24 U	14	0.02 U
2-METHYLNAPHTHALENE	28	280	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.06 U	NS	0.052 U	0.24 U	3.8	0.02 U
ACENAPHTHENE	20	200	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.08 U	NS	0.052 U	0.49 U	2.2	0.02 U
ANTHRACENE	2100	21000	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.07 U	NS	0.052 U	0.49 U	0.049 U	0.02 U
BENZO(B)FLUORANTHENE	0.05	0.5	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.08 U	NS	0.052 U	0.049 U	0.049 U	0.02 U
DIBENZO(A,H)ANTHRACENE	0.005	0.05	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	NS	0.052 U	0.049 U	0.049 U	0.02 U
INDENO(1,2,3-CD)PYRENE	0.05	0.5	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.07 U	NS	0.052 U	0.049 U	0.049 U	0.02 U
FLUORENE	280	2800	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.06 U	NS	0.052 U	0.24 U	4.4	0.05 U
NAPHTHALENE	14	140	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.05 U	NS	0.024 J	0.24 U	2.7	0.05 U
PHENANTHRENE	210	2100	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.08 U	NS	0.052 U	0.49 U	2.2	0.04 U
PETROLEUM HYDROCARBONS (mg/L)														
TOTAL PETROLEUM HYDROCARBONS	5	50	NA	NA	NA	NA	NA	1.7 U	0.21 U	NS	0.22	NA	NA	NA
Miscellaneous Parameters (mg/L)														
SULFATE	250	2500	12	14	16	14	11	28	21 J	NS	15.2	23.3	16.7	23.0
TOTAL ORGANIC CARBON	NC	NC	4.2	4.9	3	4	3.7	1.93 J	1.7	NS	3.2	2.5	2.4	5.1

Notes:

440 - **GCTL exceedance**

440 - **NADC exceedance**

[1] Groundwater Cleanup Target Level as provided in Chapter 62-777, FAC.

[2] Natural Attenuation Default Concentrations as provided in Chapter 62-770, FAC.

U = Analyte not detected above laboratory method detection limits

J = Estimated concentration

µg/L = micrograms per liter

mg/L = milligrams per liter

NC = No Criteria

FAC = Florida Administrative Code

NA = Not analyzed for this parameter

NS = Not sampled

TABLE 2
SUMMARY OF LABORATORY DETECTED ANALYTES IN GROUNDWATER
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	GCTL[1]	NADC[2]	NASP-681/682												
WELL ID			MW02S												
SAMPLING EVENT			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	1Q*	2Q	3Q
COLLECTION DATE			06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	07/20/05	10/24/05	01/26/06	04/19/06	04/18/07	04/18/07	07/24/07	10/25/07
VOLATILES (ug/L)															
BENZENE	1	10	NA	NA	NA	NA	NA	0.45 J	1 J	1 U	1 U	NA	NA	NA	NA
ETHYLBENZENE	30	300	NA	NA	NA	NA	NA	5.2	7	0.68 J	1 U	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	20	200	NA	NA	NA	NA	NA	2 U	0.8 U	1 U	1 U	NA	NA	NA	NA
TOLUENE	40	400	NA	NA	NA	NA	NA	0.57 J	0.7 J	1 U	1 U	NA	NA	NA	NA
TOTAL XYLENES	20	200	NA	NA	NA	NA	NA	3 U	2 J	1.7	0.99 J	NA	NA	NA	NA
Semivolatile Organics (ug/L)															
1-METHYLNAPHTHALENE	28	280	21	38	46	36	27	23	24	38	33	20.5	20.5	0.049 U	19
2-METHYLNAPHTHALENE	28	280	13	39	40	18	9.4	7.4	8	20	24	9.8	9.8	0.049 U	12
ACENAPHTHENE	20	200	2.3 J	7.8 U	3 J	2.9	2.8	2.9	4	2.2	2.8	2.9	2.3	0.049 U	2.6
ANTHRACENE	2100	21000	3.8 U	7.8 U	4.7 U	0.21 U	0.2 J	0.14 J	0.2	0.5 U	0.052 U	0.49 U	0.5 U	0.049 U	0.09 J
BENZO(B)FLUORANTHENE	0.05	0.5	3.8 U	7.8 U	4.7 U	0.21 U	.2 U	0.2 U	0.08 U	0.2 U	0.052 U	0.049 U	0.5 U	0.049 U	0.02 U
DIBENZO(A,H)ANTHRACENE	0.005	0.05	3.8 U	7.8 U	4.7 U	0.21 U	.2 U	0.2 U	0.1 U	0.2 U	0.052 U	0.049 U	0.5 U	0.049 U	0.02 U
INDENO(1,2,3-CD)PYRENE	0.05	0.5	3.8 U	7.8 U	4.7 U	0.21 U	.2 U	0.2 U	0.07 U	0.2 U	0.052 U	0.049 U	0.5 U	0.049 U	0.02 U
FLUORENE	280	2800	4.7	6.4 J	7.3	5.4	4.9	4.9	5	4.4	5.6	5.7	6	0.049 U	4.6
NAPHTHALENE	14	140	3.3 J	25	22	4.3	2.5	5.4	9	5.6	6.5	12	11.1	0.049 U	3.2
PHENANTHRENE	210	2100	3.8 U	7.8 U	2.8 J	2	2.3	2.7	3	3.7	5.4	2.9	3	0.049 U	2.0
PETROLEUM HYDROCARBONS (mg/L)															
TOTAL PETROLEUM HYDROCARBONS	5	50	NA	NA	NA	NA	NA	4.4 U	2.4 J	4	3.8	NA	NA	NA	NA
Miscellaneous Parameters (mg/L)															
SULFATE	250	2500	7.2	1 U	9.5	26	14	4.2	1 U, J	1.0 U	3.1 J	10.5	10.7	1.9	12
TOTAL ORGANIC CARBON	NC	NC	27	14	12	9.4	12	4.25	8.4	8.2	11.8	13.5	13.3	16.1	13

Notes:

440 - **GCTL exceedance**

440 - **NADC exceedance**

[1] Groundwater Cleanup Target Level as provided in Chapter 62-777, FAC.

[2] Natural Attenuation Default Concentrations as provided in Chapter 62-770, FAC.

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J = Estimated concentration

µg/L = micrograms per liter

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NC = No Criteria

FAC = Florida Administrative Code

NA = Not analyzed for this parameter

* = Duplicate sample

TABLE 2
SUMMARY OF LABORATORY DETECTED ANALYTES IN GROUNDWATER
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	GCTL[1]	NADC[2]	NASP-681/682															
WELL ID			TW04															
SAMPLING EVENT			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	3Q*	4Q	4Q*	1Q	2Q	2Q*	3Q	3Q*
COLLECTION DATE			06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	07/19/05	10/24/05	01/25/06	01/25/06	04/19/06	04/19/06	04/18/07	07/23/07	07/23/07	10/25/07	10/25/07
VOLATILES (ug/L)																		
BENZENE	1	10	NA	NA	NA	NA	NA	1.1	2	0.61 J	0.74 J	0.5 J	0.31 J	NA	NA	NA	NA	NA
ETHYLBENZENE	30	300	NA	NA	NA	NA	NA	7.7	11	5.8	5.5	3.2 J	2.3 J	NA	NA	NA	NA	NA
METHYL TERT-BUTYL ETHER	20	200	NA	NA	NA	NA	NA	2 U	0.8 U	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA
TOLUENE	40	400	NA	NA	NA	NA	NA	0.96 J	1	0.28 J	0.25 J	0.4 J	0.35 J	NA	NA	NA	NA	NA
TOTAL XYLENES	20	200	NA	NA	NA	NA	NA	3.6	2 J	2.8	2.3	1.4	1.6	NA	NA	NA	NA	NA
Semivolatile Organics (ug/L)																		
1-METHYLNAPHTHALENE	28	280	0.2 U	42	89	42	64	1.2	32	20	28	30 J	22 J	13.1	8.2	8.4	0.12	0.13
2-METHYLNAPHTHALENE	28	280	0.2 U	47	79	45	69	0.99	26	15	21	19 J	14	8.6	6.8	7.4	0.11	0.10
ACENAPHTHENE	20	200	0.2 U	7.5 U	5.6 J	1.4	7.8 U	0.2 U	3	1.6	2.2	1.8	1.9	0.97	1.1	1.1	0.04 J	0.02 U
ANTHRACENE	2100	21000	0.2 U	7.5 U	7.5 U	0.2 U	0.27	0.2 U	0.1 J	0.52 U	0.5 U	0.052 U	0.052 U	0.48 U	0.050 U	0.050 U	0.02 U	0.02 U
BENZO(B)FLUORANTHENE	0.05	0.5	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U	0.2 U	0.08 U	0.21 U	0.2 U	0.052 U	0.052 U	0.048 U	0.050 U	0.050 U	0.02 U	0.02 U
DIBENZO(A,H)ANTHRACENE	0.005	0.05	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U	0.2 U	0.1 U	0.21 U	0.2 U	0.052 U	0.052 U	0.048 U	0.050 U	0.050 U	0.02 U	0.02 U
INDENO(1,2,3-CD)PYRENE	0.05	0.5	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U	0.2 U	0.07 U	0.21 U	0.2 U	0.052 U	0.052 U	0.048 U	0.050 U	0.050 U	0.02 U	0.02 U
FLUORENE	280	2800	0.2 U	7.5 U	8.1	2.2	6.6 J	0.2 U	4	3.4	4.4	4.2	5	2.8	2.5	2.6	0.08 J	0.08 J
NAPHTHALENE	14	140	0.2 U	29	58	19	41	4.8	19	7	12	10	9.2	14.6	8.3	7.4	0.14	0.09 J
PHENANTHRENE	210	2100	0.2 U	7.5 U	6.1 J	0.74	6.0 J	0.2 U	2	3.4	3.2	4.7	4.8	2.8	2.7	2.4	0.05 J	0.09 J
PETROLEUM HYDROCARBONS (mg/L)																		
TOTAL PETROLEUM HYDROCARBONS	5	50	NA	NA	NA	NA	NA	2.4	3.1	4.7 J	3 J	5.8	6.0	NA	NA	NA	NA	NA
Miscellaneous Parameters (mg/L)																		
SULFATE	250	2500	3.2	1 U	1 U	6.1	7.0	2.5	1.6 J	5 U	1.2 J	1.0 J	1.0 J	11.6	1.4	0.5 U	3.6	3.4
TOTAL ORGANIC CARBON	NC	NC	2 U	15	16	14	20	3.2	9	8	8.2	13.8	13.6	13.4	15.7	15.6	7	4.9

Notes:

440 - **GCTL exceedance**

440 - **NADC exceedance**

[1] Groundwater Cleanup Target Level as provided in Chapter 62-777, FAC.

[2] Natural Attenuation Default Concentrations as provided in Chapter 62-770, FAC.

U = Analyte not detected above laboratory method detection limits

J = Estimated concentration

µg/L = micrograms per liter

mg/L = milligrams per liter

NC = No Criteria

FAC = Florida Administrative Code

NA = Not analyzed for this parameter

* = Duplicate sample

TABLE 2
SUMMARY OF LABORATORY DETECTED ANALYTES IN GROUNDWATER
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	GCTL[1]	NADC[2]	NASP-681/682											
WELL ID			MW-10S											
SAMPLING EVENT			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
COLLECTION DATE			NS	NS	NS	NS	NS	07/19/05	10/24/05	01/25/06	04/19/06	04/17/07	07/23/07	10/25/07
VOLATILES (ug/L)														
BENZENE	1	10	NA	NA	NA	NA	NA	1 U	0.3 U	0.25 U	1 U	NA	NA	NA
ETHYLBENZENE	30	300	NA	NA	NA	NA	NA	1.5	4	3.9	2	NA	NA	NA
METHYL TERT-BUTYL ETHER	20	200	NA	NA	NA	NA	NA	2 U	0.8 U	1 U	1 U	NA	NA	NA
TOLUENE	40	400	NA	NA	NA	NA	NA	1 U	0.2 U	1 U	1 U	NA	NA	NA
TOTAL XYLENES	20	200	NA	NA	NA	NA	NA	3 U	0.8 U	1 U	1 U	NA	NA	NA
Semivolatile Organics (ug/L)														
1-METHYLNAPHTHALENE	28	280	NA	NA	NA	NA	NA	3.1	13	9.7	11	22.5	6.6	0.03 J
2-METHYLNAPHTHALENE	28	280	NA	NA	NA	NA	NA	0.87	8	9.5	10	18.3	5.8	0.02 U
ACENAPHTHENE	20	200	NA	NA	NA	NA	NA	0.43	1	1.1 J	1.1	1.9	0.68	0.02 U
ANTHRACENE	2100	21000	NA	NA	NA	NA	NA	0.2 U	0.2 J	0.57 U	0.056 U	0.49 U	0.050 U	0.02 U
BENZO(B)FLUORANTHENE	0.05	0.5	NA	NA	NA	NA	NA	0.2 U	0.08 U	0.23 U	0.056 U	0.049 U	0.050 U	0.02 U
DIBENZO(A,H)ANTHRACENE	0.005	0.05	NA	NA	NA	NA	NA	0.2 U	0.1 U	0.23 U	0.056 U	0.049 U	0.050 U	0.02 U
INDENO(1,2,3-CD)PYRENE	0.05	0.5	NA	NA	NA	NA	NA	0.2 U	0.07 U	0.23 U	0.056 U	0.049 U	0.050 U	0.02 U
FLUORENE	280	2800	NA	NA	NA	NA	NA	0.69	2	2.3	1.9	3.3	1.3	0.05 U
NAPHTHALENE	14	140	NA	NA	NA	NA	NA	2.1	5	6.5	4.7	7.1	2.0	0.05 U
PHENANTHRENE	210	2100	NA	NA	NA	NA	NA	0.062 J	1	1.5	1.4	1.6	0.66	0.04 U
PETROLEUM HYDROCARBONS (mg/L)														
TOTAL PETROLEUM HYDROCARBONS	5	50	NA	NA	NA	NA	NA	3.3	0.77 U	2.3	1.6	NA	NA	NA
Miscellaneous Parameters (mg/L)														
SULFATE	250	2500	NA	NA	NA	NA	NA	6.2	16 J	16.6	16.1	13.4	8.2	73
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	5.32	3	5	5.8	3.1	2.8	37

Notes:

440 **- GCTL exceedance**

440 **- NADC exceedance**

[1] Groundwater Cleanup Target Level as provided in Chapter 62-777, FAC.

[2] Natural Attenuation Default Concentrations as provided in Chapter 62-770, FAC.

U = Analyte not detected above laboratory method detection limits

J = Estimated concentration

µg/L = micrograms per liter

mg/L = milligrams per liter

NC = No Criteria

FAC = Florida Administrative Code

NA = Not analyzed for this parameter

NS = Not sampled

TABLE 2
SUMMARY OF LABORATORY DETECTED ANALYTES IN GROUNDWATER
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	GCTL[1]	NADC[2]	NASP-681/682											
WELL ID			MW11S											
SAMPLING EVENT			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
COLLECTION DATE			NS	NS	NS	NS	NS	07/19/05	10/24/05	01/25/06	04/19/06	04/17/07	07/23/07	10/25/07
VOLATILES (ug/L)														
BENZENE	1	10	NA	NA	NA	NA	NA	0.51 J	0.3 U	0.2 J	0.18 J	NA	NA	NA
ETHYLBENZENE	30	300	NA	NA	NA	NA	NA	4.2	3	1.7	2.5	NA	NA	NA
METHYL TERT-BUTYL ETHER	20	200	NA	NA	NA	NA	NA	2 U	0.8 U	1 U	1 U	NA	NA	NA
TOLUENE	40	400	NA	NA	NA	NA	NA	1 U	0.2 U	1 U	1 U	NA	NA	NA
TOTAL XYLENES	20	200	NA	NA	NA	NA	NA	3 U	0.8 U	1 U	1 U	NA	NA	NA
Semivolatile Organics (ug/L)														
1-METHYLNAPHTHALENE	28	280	NA	NA	NA	NA	NA	6.4	6	3.8	6.7	5.2	6.6	4.1
2-METHYLNAPHTHALENE	28	280	NA	NA	NA	NA	NA	7	6	3.4	5.7	3.8	6.7	4.1
ACENAPHTHENE	20	200	NA	NA	NA	NA	NA	0.33	0.4	0.43 J	0.68	0.49 U	0.38	0.24
ANTHRACENE	2100	21000	NA	NA	NA	NA	NA	0.2 U	0.07 U	0.54 U	0.053 U	0.49 U	0.049 U	0.02 U
BENZO(B)FLUORANTHENE	0.05	0.5	NA	NA	NA	NA	NA	0.2 U	0.08 U	0.22 U	0.053 U	0.049 U	0.049 U	0.02 U
DIBENZO(A,H)ANTHRACENE	0.005	0.05	NA	NA	NA	NA	NA	0.2 U	0.1 U	0.22 U	0.053 U	0.049 U	0.049 U	0.02 U
INDENO(1,2,3-CD)PYRENE	0.05	0.5	NA	NA	NA	NA	NA	0.2 U	0.07 U	0.22 U	0.053 U	0.049 U	0.049 U	0.02 U
FLUORENE	280	2800	NA	NA	NA	NA	NA	0.71	1	1.1	1.4	0.88	1.0	0.38
NAPHTHALENE	14	140	NA	NA	NA	NA	NA	6.1	5	2.4	5.6	4.3	4.5	6.5
PHENANTHRENE	210	2100	NA	NA	NA	NA	NA	0.4	0.8	0.78	1	0.49 U	0.88	0.07 J
PETROLEUM HYDROCARBONS (mg/L)														
TOTAL PETROLEUM HYDROCARBONS	5	50	NA	NA	NA	NA	NA	1.6 J	0.68 U	0.65	0.82	NA	NA	NA
Miscellaneous Parameters (mg/L)														
SULFATE	250	2500	NA	NA	NA	NA	NA	21	28 J	15.9	11.0	20.0	15.8	6.4
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	3.13	2.7	2.9	2.9	7.9	2.8	4.3

Notes:

440 **- GCTL exceedance**

440 **- NADC exceedance**

[1] Groundwater Cleanup Target Level as provided in Chapter 62-777, FAC.

[2] Natural Attenuation Default Concentrations as provided in Chapter 62-770, FAC.

U = Analyte not detected above laboratory method detection limits

J = Estimated concentration

µg/L = micrograms per liter

mg/L = milligrams per liter

NC = No Criteria

FAC = Florida Administrative Code

NA = Not analyzed for this parameter

NS = Not sampled

TABLE 2
SUMMARY OF LABORATORY DETECTED ANALYTES IN GROUNDWATER
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	GCTL[1]	NADC[2]	NASP-681/682											
WELL ID			MW12S											
SAMPLING EVENT			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
COLLECTION DATE			NS	NS	NS	NS	NS	07/19/05	10/24/05	01/25/06	04/19/06	04/17/07	07/23/07	10/24/07
VOLATILES (ug/L)														
BENZENE	1	10	NA	NA	NA	NA	NA	1 U	0.3 U	1 U	1 U	NA	NA	NA
ETHYLBENZENE	30	300	NA	NA	NA	NA	NA	1 U	0.2 U	1 U	1 U	NA	NA	NA
METHYL TERT-BUTYL ETHER	20	200	NA	NA	NA	NA	NA	2 U	0.8 U	1 U	1 U	NA	NA	NA
TOLUENE	40	400	NA	NA	NA	NA	NA	0.39 J	0.2 U	1 U	1 U	NA	NA	NA
TOTAL XYLENES	20	200	NA	NA	NA	NA	NA	3 U	0.8 U	1 U	1 U	NA	NA	NA
Semivolatile Organics (ug/L)														
1-METHYLNAPHTHALENE	28	280	NA	NA	NA	NA	NA	0.2 U	0.09 U	1 U	0.054 U	0.24 U	0.049 U	0.02 U
2-METHYLNAPHTHALENE	28	280	NA	NA	NA	NA	NA	0.2 U	0.06 U	1 U	0.054 U	0.24 U	0.049 U	0.02 U
ACENAPHTHENE	20	200	NA	NA	NA	NA	NA	0.2 U	0.08 U	1 U	0.036 J	0.48 U	0.049 U	0.02 U
ANTHRACENE	2100	21000	NA	NA	NA	NA	NA	0.2 U	0.07 U	0.51 U	0.054 U	0.48 U	0.049 U	0.02 U
BENZO(B)FLUORANTHENE	0.05	0.5	NA	NA	NA	NA	NA	0.2 U	0.08 U	0.2 U	0.054 U	0.048 U	0.049 U	0.02 U
DIBENZO(A,H)ANTHRACENE	0.005	0.05	NA	NA	NA	NA	NA	0.2 U	0.1 U	0.2 U	0.054 U	0.048 U	0.049 U	0.02 U
INDENO(1,2,3-CD)PYRENE	0.05	0.5	NA	NA	NA	NA	NA	0.2 U	0.07 U	0.2 U	0.054 U	0.048 U	0.049 U	0.02 U
FLUORENE	280	2800	NA	NA	NA	NA	NA	0.2 U	0.06 U	0.51 U	0.054 U	0.24 U	0.049 U	0.05 U
NAPHTHALENE	14	140	NA	NA	NA	NA	NA	0.2 U	0.05 U	1 U	0.054 U	0.24 U	0.049 U	0.05 U
PHENANTHRENE	210	2100	NA	NA	NA	NA	NA	0.2 U	0.08 U	0.51 U	0.054 U	0.48 U	0.049 U	0.04 U
PETROLEUM HYDROCARBONS (mg/L)														
TOTAL PETROLEUM HYDROCARBONS	5	50	NA	NA	NA	NA	NA	1.7 U	0.22 U	0.33	0.29	NA	NA	NA
Miscellaneous Parameters (mg/L)														
SULFATE	250	2500	NA	NA	NA	NA	NA	30	24 J	15	20.1	30.6	14.6	18
TOTAL ORGANIC CARBON	NC	NC	NA	NA	NA	NA	NA	0.923 J	1.7	2.2	2.8	3.7	2.4	4.3

Notes:

440 **- GCTL exceedance**

440 **- NADC exceedance**

[1] Groundwater Cleanup Target Level as provided in Chapter 62-777, FAC.

[2] Natural Attenuation Default Concentrations as provided in Chapter 62-770, FAC.

U = Analyte not detected above laboratory method detection limits

J = Estimated concentration

µg/L = micrograms per liter

mg/L = milligrams per liter

NC = No Criteria

FAC = Florida Administrative Code

NA = Not analyzed for this parameter

NS = Not sampled

TABLE 3

SUMMARY OF M0NITORED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER ANALYZED IN THE FIELD
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			PEN-14-MW01S											
Sampling Event			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date			6/23/2003	9/23/2003	12/9/2003	3/8/2004	6/8/2004	7/20/2005	10/24/2005	NS	4/19/2006	4/18/2007	7/24/2007	10/25/2007
	Preferred Range	Units												
Natural Attenuation Parameters														
Dissolved Oxygen	> 5 mg/L	mg/L	0.2	3.0	2.0	0.9	1.0	5.0	4.0	NA	1.0	0.9	0.4	2.0
Carbon Dioxide	> 2X	mg/L	30	50	12.5	14	22	25	13	NA	20	30 *	15	16
Alkalinity	> 2X	mg/L	55	100	40	35	60	40	48	NA	80	72 *	65	110
Ferrous iron	< 1 mg/L	mg/L	2.6	3.0	1.8	2.33	1.14	0.0	0.0	NA	0.05	0.685 *	0.0	0.8
Hydrogen Sulfide	NC	mg/L	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	< 1.0*	0.0	0.0
Temperature	> 20° C	°C	23.41	23.76	23.58	22.25	22.87	22.72	23.22	NA	22.23	21.52	22.91	23.71
pH	5 < pH < 9	SU	6.10	5.87	6.26	6.57	6.34	6.11	6.61	NA	6.57	6.55	6.58	7.33
Oxidation-Reduction potential	< 50 mV or < -100 mV	mV	180	27	3	18.1	9.6	98.3	33.8	NA	16.4	25.4	-37.6	32.6

Notes:
* = laboratory analysis
NS = not sampled
mg/L = milligrams per liter
NA = not analyzed
mV = Millivolts
°C = Degrees Celsius
SU = Standard pH Units
NC = no criteria established for this parameter

TABLE 3

SUMMARY OF M0NITORED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER ANALYZED IN THE FIELD
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			PEN-14-MW02S											
Sampling Event			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date			6/23/2003	9/23/2003	12/9/2003	3/8/2004	6/8/2004	7/20/2005	10/24/2005	1/26/2006	4/19/2006	4/18/2007	7/24/2007	10/25/2007
	Preferred Range	Units												
Natural Attenuation Parameters														
Dissolved Oxygen	> 5 mg/L	mg/L	0.2	1.0	1.0	0.9	1.0	0.1	0.5	0.8	1.5	1.0	1.0	1.0
Carbon Dioxide	> 2X	mg/L	85	40	16	14	25	40	16	22	60	29	22	22
Alkalinity	> 2X	mg/L	60	100	37.5	50	45	110	110	100	90	110	110	45
Ferrous iron	< 1 mg/L	mg/L	3.4	2.6	1.6	1.63	1.46	0.5	0.75	1.0	1.6	1.2	0.5	2.0
Hydrogen Sulfide	NC	mg/L	>5.0	0.85	6.0	> 5.0	0.5	5.0	1.0	2.0	1.0	1.8	0.6	1.5
Temperature	> 20° C	°C	23.44	24.76	23.83	22.55	22.49	22.62	23.11	22.92	22.91	22.11	23.41	23.98
pH	5 < pH < 9	SU	6.05	6.30	6.68	6.32	6.38	6.12	6.99	6.97	5.54	6.55	6.60	7.95
Oxidation-Reduction potential	< 50 mV or < -100 mV	mV	-107.4	-168	-154	-162.5	-63.9	-74.3	-208	-107.9	-63.6	-152.3	-194.6	23.8

Notes:

mg/L = milligrams per liter
mV = Millivolts
°C = Degrees Celsius
SU = Standard pH Units
NC = no criteria established for this parameter

TABLE 3

SUMMARY OF M0NITORED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER ANALYZED IN THE FIELD
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			PEN-14-TW04											
Sampling Event			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date			6/23/2003	9/23/2003	12/9/2003	3/8/2004	6/8/2004	7/19/2005	10/24/2005	1/25/2006	4/19/2006	4/18/2007	7/23/2007	10/24/2007
	Preferred Range	Units												
Natural Attenuation Parameters														
Dissolved Oxygen	> 5 mg/L	mg/L	3.0	2.0	0.8	3.0	1.0	1.5	0.4	1.0	0.0	1.0	0.4	3.0
Carbon Dioxide	> 2X	mg/L	30	50	22.5	15	75	19	30	30	35	60	40	25
Alkalinity	> 2X	mg/L	90	110	120	35	150	115	120	125	80	185	120	50
Ferrous iron	< 1 mg/L	mg/L	0.0	2.0	1.8	1.19	1.24	0.25	0.6	1.2	1.8	0.4	0.8	0.6
Hydrogen Sulfide	NC	mg/L	0.0	0.23	0.38	0.15	2.0	0.1	7.5	3.0	3.0	2.5	4.0	0.1
Temperature	> 20° C	°C	22.10	23.58	24.03	22.31	22.18	22.22	23.6	23.49	22.35	22.40	27.89	23.92
pH	5 < pH < 9	SU	6.61	6.01	7.29	6.48	6.45	7.45	6.86	6.62	6.26	6.43	6.47	8.00
Oxidation-Reduction potential	< 50 mV or < -100 mV	mV	10	-97	-274	-143.1	-99.3	NA	-173.9	-166.1	-254	-105.6	-240.8	-8.0

Notes:

NS = not sampled
mg/L = milligrams per liter
NA = not analyzed
mV = Millivolts
°C = Degrees Celsius
SU = Standard pH Units
NC = no criteria established for this parameter

TABLE 3

SUMMARY OF M0NITORED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER ANALYZED IN THE FIELD
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			PEN-14-MW10S											
Sampling Event			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date			NS	NS	NS	NS	NS	7/19/2005	10/24/2005	1/25/2006	4/19/2006	4/17/2007	7/23/2007	10/25/2007
	Preferred Range	Units												
Natural Attenuation Parameters														
Dissolved Oxygen	> 5 mg/L	mg/L	NA	NA	NA	NA	NA	2.5	1.5	1.1	2.0	1.0	1.5	2.0
Carbon Dioxide	> 2X	mg/L	NA	NA	NA	NA	NA	20	50	150	60	38	30	20
Alkalinity	> 2X	mg/L	NA	NA	NA	NA	NA	63	76	110	50	90	60	30
Ferrous iron	< 1 mg/L	mg/L	NA	NA	NA	NA	NA	2.15	0.6	0.1	0.6	1.2	0.8	1.0
Hydrogen Sulfide	NC	mg/L	NA	NA	NA	NA	NA	0.6	0.1	0.1	0.6	0.7	1.5	0.1
Temperature	> 20° C	°C	NA	NA	NA	NA	NA	23.45	23.68	23.48	24.01	24.32	24.49	24.52
pH	5 < pH < 9	SU	NA	NA	NA	NA	NA	7.11	6.54	6.99	5.66	6.31	6.31	5.46
Oxidation-Reduction potential	< 50 mV or < -100 mV	mV	NA	NA	NA	NA	NA	-84.1	-89	-52.7	-73.3	-83.5	-124.4	61.0

Notes:

NS = not sampled
mg/L = milligrams per liter
NA = not analyzed
mV = Millivolts
°C = Degrees Celsius
SU = Standard pH Units
NC = no criteria established for this parameter

TABLE 3

SUMMARY OF M0NITORED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER ANALYZED IN THE FIELD
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			PEN-14-MW11S											
Sampling Event			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date			NS	NS	NS	NS	NS	7/19/2005	10/24/2005	1/25/2006	4/19/2006	4/17/2007	7/23/2007	10/24/2007
	Preferred Range	Units												
Natural Attenuation Parameters														
Dissolved Oxygen	> 5 mg/L	mg/L	NA	NA	NA	NA	NA	4.0	3.0	1.0	2.0	2.0	1.5	2.0
Carbon Dioxide	> 2X	mg/L	NA	NA	NA	NA	NA	10	13	100	37	19	22	200
Alkalinity	> 2X	mg/L	NA	NA	NA	NA	NA	115	100	130	83	90	85	40
Ferrous iron	< 1 mg/L	mg/L	NA	NA	NA	NA	NA	0.6	0.05	0.1	0.2	0.5	0.2	0.0
Hydrogen Sulfide	NC	mg/L	NA	NA	NA	NA	NA	0.3	1.0	0.0	0.2	0.3	0.7	0.1
Temperature	> 20° C	°C	NA	NA	NA	NA	NA	23.92	25.15	24.60	24.18	24.52	25.01	25.81
pH	5 < pH < 9	SU	NA	NA	NA	NA	NA	8.2	7.25	7.44	6.73	6.71	6.65	6.58
Oxidation-Reduction potential	< 50 mV or < -100 mV	mV	NA	NA	NA	NA	NA	-91.9	-129.0	-44.4	-64.5	52.0	-136.9	13.0

Notes:

NS = not sampled
mg/L = milligrams per liter
NA = not analyzed
mV = Millivolts
°C = Degrees Celsius
SU = Standard pH Units
NC = no criteria established for this parameter

TABLE 3

SUMMARY OF M0NITORED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER ANALYZED IN THE FIELD
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			PEN-14-MW12S											
Sampling Event			Baseline	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date			NS	NS	NS	NS	NS	7/19/2005	10/24/2005	1/25/2006	4/19/2006	4/17/2007	7/23/2007	10/25/2007
	Preferred Range	Units												
Natural Attenuation Parameters														
Dissolved Oxygen	> 5 mg/L	mg/L	NA	NA	NA	NA	NA	3.0	1.5	1.0	1.0	1.0	0.5	3.0
Carbon Dioxide	> 2X	mg/L	NA	NA	NA	NA	NA	20	100	15	18	23	17	18
Alkalinity	> 2X	mg/L	NA	NA	NA	NA	NA	NA	71	100	65	80	80	85
Ferrous iron	< 1 mg/L	mg/L	NA	NA	NA	NA	NA	0.0	0.0	0.1	0.05	0.0	0.0	0.1
Hydrogen Sulfide	NC	mg/L	NA	NA	NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Temperature	> 20° C	°C	NA	NA	NA	NA	NA	23.08	23.53	23.29	22.60	22.62	23.18	23.28
pH	5 < pH < 9	SU	NA	NA	NA	NA	NA	6.22	6.66	6.67	6.63	6.52	6.72	6.60
Oxidation-Reduction potential	< 50 mV or < -100 mV	mV	NA	NA	NA	NA	NA	69.4	3	-70.0	-37.0	117.8	67.9	54.0

Notes:

NS = not sampled
mg/L = milligrams per liter
NA = not analyzed
mV = Millivolts
°C = Degrees Celsius
SU = Standard pH Units

TABLE 4

SUMMARY OF LABORATORY ANALYZED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			MW-01S						
Sampling Event			1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date			7/20/2005	10/24/2005	NS	4/19/2006	4/18/2007	7/24/2007	10/25/2007
	Preferred Range	Units							
Natural Attenuation Parameters									
Dissolved iron	< 1 mg/L	mg/L	0.231	0.065 U	NA	0.030 U	0.685	0.202	0.600
Alkalinity	> 2X	mg/L	1 U	48	NA	68.8	72	59.2	67
Ammonia-N	NC	mg/L	0.88	0.1 U	NA	0.05 U	0.05 U	0.1 U	0.008 U
Chloride	NC	mg/L	45	27	NA	22.4	21.2	19.9	47
Nitrate-N	NC	mg/L	36	1.7	NA	0.16	0.23	0.43	0.87
NitrIte-N	NC	mg/L	0.59	0.05 U	NA	0.05 U	0.05 U	0.05 U	0.05
Orthorphosphate-P	NC	mg/L	0.5 U	0.05 U	NA	0.02 J	0.1	0.023	0.010
Sulfate	NC	mg/L	0.021	21 J	NA	15.2	23.3	16.7	23
Sulfide	NC	mg/L	28	1 U	NA	0.75 U	1 U	2.4	0.45 U
Total Kjeldahl Nitrogen (TKN)	NC	mg/L	1.05	0.25 U,J	NA	0.63 J	0.14	0.63	0.29
Total Organic Carbon (TOC)	NC	mg/L	1.93 I	1.7	NA	3.2	2.5	2.4	5.1
Total Phosphorous	NC	mg/L	0.02 U	0.16	NA	0.022 J	0.086	0.058	0.027 J
Carbon Dioxide	> 2X	mg/L	25	28	NA	30	22	20	31

Notes:
mg/L = milligrams per liter
U = analyte not detected above laboratory method detection limits
NS = not sampled
J = estimated concentration
I = analyte detected above instrument detection limit, but below laboratory practical quantition level
NC = no criteria established for this parameter
NA = not analyzed

TABLE 4

SUMMARY OF LABORATORY ANALYZED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			MW-02S							
Sampling Event			1Q	2Q	3Q	4Q	1Q	1Q*	2Q	3Q
Collect Date			7/20/2005	10/24/2005	1/26/2006	4/19/2006	4/18/2007	4/18/2007	7/24/2007	10/25/2007
	Preferred Range	Units								
Natural Attenuation Parameters										
Dissolved iron	< 1 mg/L	mg/L	0.389	0.543	0.922	1.640	0.701	0.702	1.160	2.510
Alkalinity	> 2X	mg/L	1.3	110	96.1	101	147	133	112	42
Ammonia-N	NC	mg/L	1.23	0.44	1	0.51	0.87	0.85	0.58	0.30
Chloride	NC	mg/L	130	16	29	18.8	19.7	20.0	16.3	20
Nitrate-N	NC	mg/L	29	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.20
NitrIte-N	NC	mg/L	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.034 J
Orthorphosphate-P	NC	mg/L	0.5 U	0.11	0	0.11	0.18	0.03	0.13	0.018
Sulfate	NC	mg/L	0.083	1 U,J	1.0 U	3.1 J	10.5	10.7	1.9	12
Sulfide	NC	mg/L	4.2	0.7 J	2.1 J	1.1 J	2.3	2	0.8 U	0.75 J
Total Kjeldahl Nitrogen (TKN)	NC	mg/L	1.4	0.54 J	1.4	1.9	1	1.1	1.3	0.90
Total Organic Carbon (TOC)	NC	mg/L	4.25	8.4	8.2	11.8	13.5	13.3	16.1	13
Total Phosphorous	NC	mg/L	0.045	0.14	0.20	0.15	0.086	0.099	0.15	0.22
Carbon Dioxide	> 2X	mg/L	40	16	49	71	44	NA	39	28

Notes:
mg/L = milligrams per liter
NC = no criteria established for this parameter
U = analyte not detected above laboratory method detection limits
J = estimated concentration
* = Duplicate sample
NA = not analyzed

TABLE 4

SUMMARY OF LABORATORY ANALYZED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			TW-04										
Sampling Event			1Q	2Q	3Q	3Q*	4Q	4Q*	1Q	2Q	2Q*	3Q	3Q*
Collect Date			7/19/2005	10/24/2005	1/25/2006	1/25/2006	4/19/2006	4/19/2006	4/18/2007	7/23/2007	7/23/2007	10/24/2007	10/24/2007
	Preferred Range	Units											
Natural Attenuation Parameters													
Dissolved iron	< 1 mg/L	mg/L	.036 I	0.436	0.699	0.679	1.760	1.800	0.298	1.21	1.200	0.244	0.301
Alkalinity	> 2X	mg/L	1.7	120	143	136	94.9	95.9	155	112	121	100	100
Ammonia-N	NC	mg/L	0.53	0.73	0.46	0.46	0.46	0.47	0.42	0.59	0.6	0.008 U	0.008 U
Chloride	NC	mg/L	13	22	29.6	29.4	21.6	21.6	17.2	16.4 J	16.3 J	5.3	5.0
Nitrate-N	NC	mg/L	0.1 U	0.05 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.21	0.20
NitrIte-N	NC	mg/L	0.5 U	0.05 U	0.25 U	0.25 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.036 J	0.033 J
Orthorphosphate-P	NC	mg/L	0.02 U	0.06	0.085	0.082	0.074	0.066	0.1	0.058	0.058	0.030	0.027
Sulfate	NC	mg/L	2.5	1.6 J	5 U	1.2 J	1.0 J	1.0 J	11.6	1.4	0.5	3.6	3.4
Sulfide	NC	mg/L	NA	1 U	1.1 J	1.9	2.6	3.2	1 U	0.8 U	0.8 U	0.45 U	0.45 U
Total Kjeldahl Nitrogen (TKN)	NC	mg/L	0.88	0.99 J	1.6	1	0.91 J	0.95 J	0.64	1.3	1.3	0.26	0.17
Total Organic Carbon (TOC)	NC	mg/L	3.2	9	8	8.2	13.8	13.6	13.4	15.7	15.6	7	4.9
Total Phosphorous	NC	mg/L	0.02 U	0.14	0.039 J	0.049 J	0.022 J	0.02 U	0.055	0.068	0.063	0.048	0.035
Carbon Dioxide	> 2X	mg/L	150	25	52	NA	62	NA	30	53	NA	16	NA

Notes:
mg/L = milligrams per liter
NA = not analyzed
NC = no criteria established for this parameter
U = analyte not detected above laboratory method detection limits
J = estimated concentration
I = analyte detected above instrument detection limit, but below laboratory practical quantition level
* = Duplicate sample

TABLE 4

SUMMARY OF LABORATORY ANALYZED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			MW-10S						
Sampling Event			1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date			7/19/2005	10/24/2005	1/25/2006	4/19/2006	4/17/2007	7/23/2007	10/25/2007
	Preferred Range	Units							
Natural Attenuation Parameters									
Dissolved iron	< 1 mg/L	mg/L	0.520	0.548	0.608	0.706	1.060	0.784	1.580
Alkalinity	> 2X	mg/L	0.49 I	76	92.1	86.5	89.5	58.0	27
Ammonia-N	NC	mg/L	0.7	0.067 J	0.12 J	0.19 J	0.32	0.1 U	0.15
Chloride	NC	mg/L	7.2	23	21.8	18.1	18.1	21.1	39
Nitrate-N	NC	mg/L	0.1 U	1.9	1.1	0.46	0.9	2	2.7
NitrIte-N	NC	mg/L	0.5 U	0.05 U	0.25 U	0.05 U	0.05 U	0.05 U	0.061
Orthorphosphate-P	NC	mg/L	0.02 U	0.069	0.087	0.061	0.044	0.071	0.013
Sulfate	NC	mg/L	6.2	16 J	16.6	16.1	13.4	8.2	73
Sulfide	NC	mg/L	NA	1 U	0.8 J	0.80 J	1.3	0.8 U	0.45 U
Total Kjeldahl Nitrogen (TKN)	NC	mg/L	1.23	0.25 U,J	0.54 J	0.65 J	0.81	0.54	2.0
Total Organic Carbon (TOC)	NC	mg/L	5.32	2.7	5	5.8	3.1	2.8	37
Total Phosphorous	NC	mg/L	0.1	0.077 J	0.11	0.062	0.061	0.095	0.095
Carbon Dioxide	> 2X	mg/L	62	26	26	51	60	45	120

Notes:
mg/L = milligrams per liter
NA = not analyzed
NC = no criteria established for this parameter
U = analyte not detected above laboratory method detection limits
J = estimated concentration
I = analyte detected above instrument detection limit, but below laboratory practical quantition level

TABLE 4

SUMMARY OF LABORATORY ANALYZED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			MW-11S						
Sampling Event			1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date			7/19/2005	10/24/2005	1/25/2006	4/19/2006	4/17/2007	7/23/2007	10/25/2007
	Preferred Range	Units							
Natural Attenuation Parameters									
Dissolved iron	< 1 mg/L	mg/L	0.034 I	0.296	0.150	0.224	0.0448	0.542	0.880
Alkalinity	> 2X	mg/L	1.8	100	99.2	92.8	99.5	80.8	91
Ammonia-N	NC	mg/L	0.7	0.089	0.089 J	0.15 J	0.077	0.1 U	0.076
Chloride	NC	mg/L	22	22	18.8	16.9	16	16.6	8.2
Nitrate-N	NC	mg/L	0.84	2.3	1.1	0.98	1.1	2.3	0.53
NitrIte-N	NC	mg/L	0.5 U	0.05 U	0.25 U	0.05 U	0.05 U	0.05 U	0.047 J
Orthorphosphate-P	NC	mg/L	0.02 U	0.026 J	0.045	0.041	0.048	0.048	0.018
Sulfate	NC	mg/L	21	28 J	15.9	11.0	20.0	15.8	6.4
Sulfide	NC	mg/L	NA	1 U	2.3 U	0.75 U	1 U	0.8 U	0.45 U
Total Kjeldahl Nitrogen (TKN)	NC	mg/L	0.88	0.25 U,J	0.53 J	0.46 J	0.14	1.2	0.72
Total Organic Carbon (TOC)	NC	mg/L	3.13	2.7	2.9	2.9	7.9	2.8	4.3
Total Phosphorous	NC	mg/L	0.02 U	0.077 J	0.044 J	0.02 U	0.05	0.074	0.065
Carbon Dioxide	> 2X	mg/L	130	8.1	25	27	29	14	25

Notes:
mg/L = milligrams per liter
NA = not analyzed
U = analyte not detected above laboratory method detection limits
J = estimated concentration
I = analyte detected above instrument detection limit, but below laboratory practical quantition level
NC = no criteria established for this parameter

TABLE 4

SUMMARY OF LABORATORY ANALYZED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER
UST SITE 14 / TANKS 681/682
PERIMETER AND CONTAMINATED WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location			MW-12S					
Sampling Event			1Q	2Q	3Q	4Q	1Q	2Q
Collect Date			7/19/2005	10/24/2005	1/25/2006	4/19/2006	4/17/2007	7/23/2007
	Preferred Range	Units						
Natural Attenuation Parameters								
Dissolved iron	< 1 mg/L	mg/L	0.034 I	0.144 U	0.063	0.030 U	0.015 U	0.035 U
Alkalinity	> 2X	mg/L	0.88 I	71	74.9	78.9	87.5	76
Ammonia-N	NC	mg/L	0.7	0.1 U	0.2 U	0.05 U	0.05 U	0.008 U
Chloride	NC	mg/L	32	55	17.7	18.7	28.7	25
Nitrate-N	NC	mg/L	1.8	1.4	0.78	0.32	1.7	0.32
NitrIte-N	NC	mg/L	0.5 U	0.38 J	0.25 U	0.05 U	0.05 U	0.046 J
Orthorphosphate-P	NC	mg/L	0.02 U	0.044 J	0.04	0.048	0.07	0.065
Sulfate	NC	mg/L	30	24 J	15	20.1	30.6	18
Sulfide	NC	mg/L	NA	1 U	2.3	0.75 U	1 U	0.45 U
Total Kjeldahl Nitrogen (TKN)	NC	mg/L	0.88	0.25 U,J	0.46 J	0.30 U	0.11 U	0.21
Total Organic Carbon (TOC)	NC	mg/L	0.923 I	1.7	2.2	2.8	3.7	4.3
Total Phosphorous	NC	mg/L	0.02 U	0.1 J	0.024 J	0.032	0.055	0.072
Carbon Dioxide	> 2X	mg/L	73	18	25	24	34	26

Notes:
mg/L = milligrams per liter
NA = not analyzed
U = analyte not detected above laboratory method detection limits
J = estimated concentration
I = analyte detected above instrument detection limit, but below laboratory practical quantition level
NC = no criteria established for this parameter

TABLE 5

LIGHT GASES IN GROUNDWATER
UST SITE 14 / TANKS 681/682
UPGRADIENT AND PLUME AREA WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location		MW-01S							MW-02S						
Sampling Event		1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date		7/20/2005	10/24/2005	1/26/2006	4/19/2006	4/18/2007	7/24/2007	10/25/2007	7/20/2005	10/24/2005	1/26/2006	4/19/2006	4/18/2007	7/24/2007	10/25/2007
	Units														
Natural Attenuation Parameters															
Methane	µg/L	27	4.4 U	NS	1300	16	12	0.042	390	2600	4600	5300	2200	2700	800
Ethane	µg/L	7 U	0.76 U	NS	0.01 U	0.01 U	0.010 U	0.002 J	7 U	3.8 U	0.01 U	0.01 U	0.27	0.074	0.020
Ethene	µg/L	6 U	0.35 U	NS	0.01 U	0.007 U	0.006 J	0.007 J	6 U	1.7 U	0.01 U	0.01 U	0.011	0.006 J	0.020
Carbon Dioxide	mg/L	25	28	NS	30	22	20	31	40	27	49	71	44	39	28
Hydrogen	nM	NA	NA	NS	2.5	1.2	1.6	1.3	NA	NA	1.8	2.1	1.5	2.2	3.4

Notes:
µg/L = micrograms per liter
mg/L = milligrams per liter
NA = not analyzed
U = analyte not detected above laboratory method detection limits
NS = not sampled
J = estimated concentration
nM = nannomoles

TABLE 5

LIGHT GASES IN GROUNDWATER
UST SITE 14 / TANKS 681/682
UPGRADIENT AND PLUME AREA WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location		TW-04							MW-10S						
Sampling Event		1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date		7/19/2005	10/24/2005	1/25/2006	4/19/2006	4/18/2007	7/23/2007	10/24/2007	7/19/2005	10/24/2005	1/25/2006	4/19/2006	4/17/2007	7/23/2007	10/25/2007
	Units														
Natural Attenuation Parameters															
Methane	µg/L	530	3700	3100	5000	1200	4000	28	690	1300	170	1700	2900	1500	670
Ethane	µg/L	7 U	3.8 U	0.22	0.035	0.14	0.18	0.011	7 U	1.5 U	0.004 J	0.009 J	0.052	0.045	0.036
Ethene	µg/L	6 U	1.7 U	0.01 U	0.01 U	0.01 U	0.01 U	0.034	6 U	0.7 U	0.003 J	0.004 J	0.01 U	0.006 J	0.120
Carbon Dioxide	mg/L	150	25	52	62	30	53	16	62	26	26	51	60	45	120
Hydrogen	nM	NA	NA	3.3	4.0	1.5	3.8	8.2	NA	NA	0.61	1.4	2.0	1.8	3.9

Notes:
µg/L = micrograms per liter
mg/L = milligrams per liter
NA = not analyzed
U = analyte not detected above laboratory method detection limits
NS = not sampled
J = estimated concentration
nM = nannomoles

TABLE 5

LIGHT GASES IN GROUNDWATER
UST SITE 14 / TANKS 681/682
UPGRADIENT AND PLUME AREA WELLS
NAS PENSACOLA, PENSACOLA, FLORIDA

Sample Location		MW-11S							MW-12S						
Sampling Event		1Q	2Q	3Q	4Q	1Q	2Q	3Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Collect Date		7/19/2005	10/24/2005	1/25/2006	4/18/2006	4/17/2007	7/23/2007	10/25/2007	7/19/2005	10/24/2005	1/25/2006	4/18/2006	4/17/2007	7/23/2007	10/24/2007
	Units														
Natural Attenuation Parameters															
Methane	µg/L	330	660	1000	2100	1800	980	1400	49	11 U	1000	810	160	200	340
Ethane	µg/L	7 U	0.76 U	0.06	0.07	0.088	0.045	0.083	7 U	0.76 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ethene	µg/L	6 U	0.35 U	0.013	0.01 U	0.01 U	0.01 U	0.010 J	6 U	0.35 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Carbon Dioxide	mg/L	130	8.1	25	27	29	14	25	73	18	25	24	34	12	26
Hydrogen	nM	NA	NA	1	7.8	27	30	1.7	NA	NA	0.74	0.88	3.9	8.1	2.9

Notes:
µg/L = micrograms per liter
mg/L = milligrams per liter
NA = not analyzed
U = analyte not detected above laboratory method detection limits
NS = not sampled
J = estimated concentration
nM = nannomoles

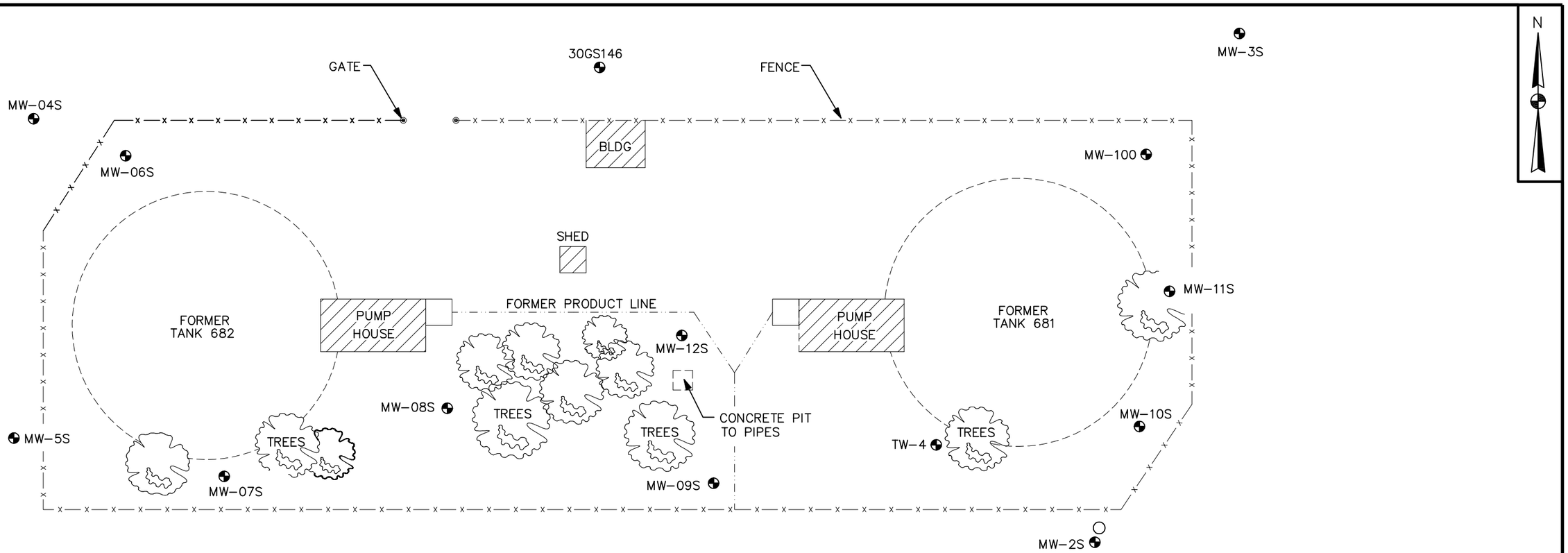
FIGURES

ACAD: 0063CP05.dwg 04/06/06 MF PIT

DRAWN BY MF	DATE 4/6/06	NAVFAC	SITE LOCATION MAP UST SITE 14 THIRD QUARTER GROUNDWATER SAMPLING EVENT NAS PENSACOLA PENSACOLA, FLORIDA	CONTRACT NO. 0063
CHECKED BY	DATE			OWNER NO. 0000
REVISED BY	DATE			APPROVED BY / DATE
SCALE AS NOTED				DRAWING NO. FIGURE 1 / REV. 0

FORM CADD NO. SDIV-BH.DWG - REV 1 - 9/10/98

ACAD:0063CM03.dwg 04/06/06 MF PIT



MW-01S

LEGEND:

MW-2S — MONITORING WELL LOCATION AND DESIGNATION

NAS — NAVAL AIR STATION

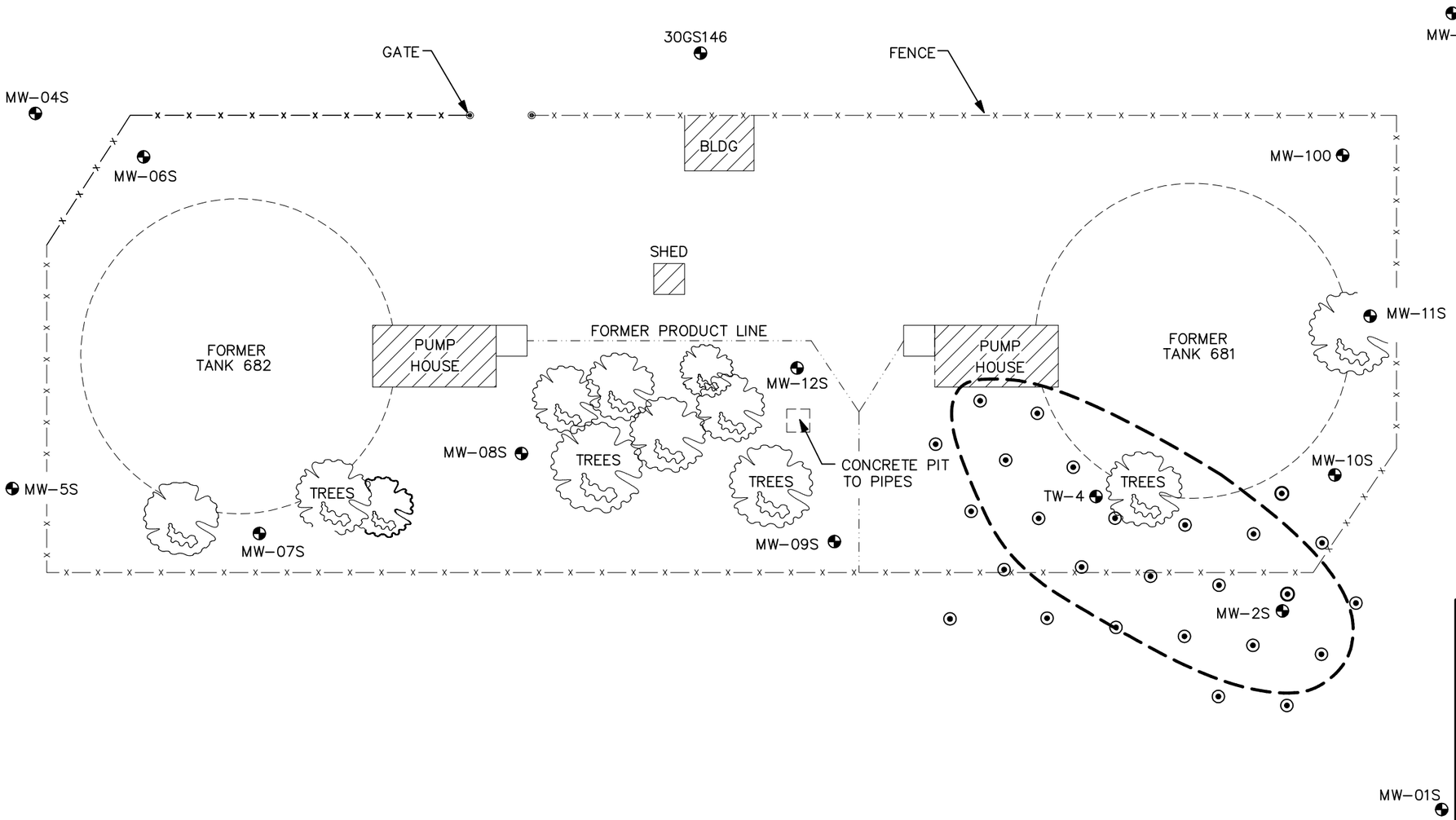
0 40 80
GRAPHIC SCALE IN FEET

DRAWN BY MF	DATE 4/6/06	SITE PLAN UST SITE 14 THIRD QUARTER GROUNDWATER SAMPLING EVENT NAS PENSACOLA PENSACOLA, FLORIDA	CONTRACT NO. 0063
CHECKED BY	DATE		OWNER NO. 0000
REVISED BY	DATE		APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 2 / REV. 0

NAVFAC

FORM CADD NO. SDIV-BH.DWG – REV 1 – 9/10/98

ACAD: 0063CM04.dwg 04/06/06 MF PIT



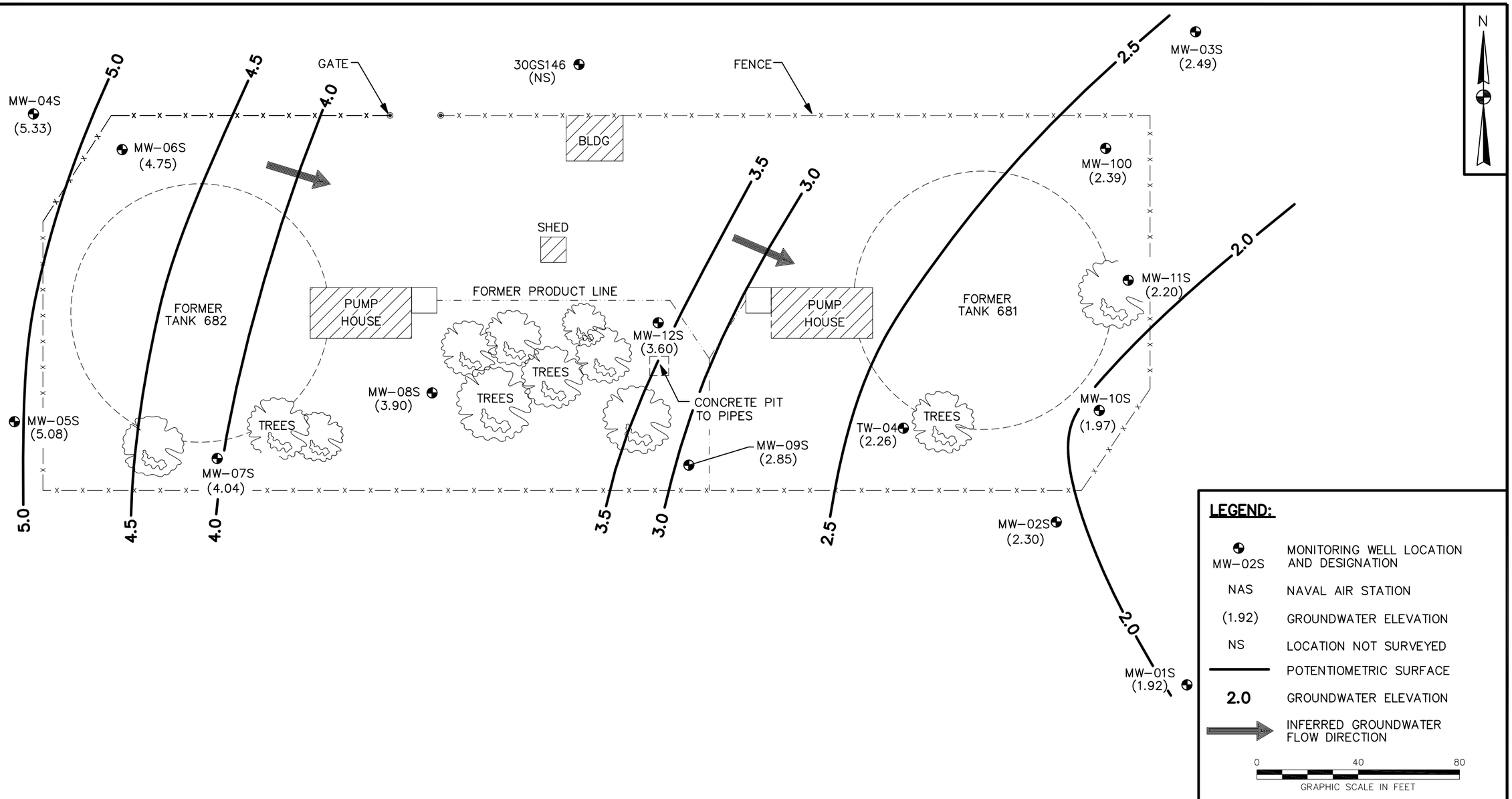
LEGEND:

⊙	ORC INJECTION POINT LOCATION
⊕ MW-2S	MONITORING WELL LOCATION AND DESIGNATION
NAS	NAVAL AIR STATION
GCTL	GROUNDWATER TARGET CLEANUP LEVEL
— — —	APPROXIMATE AREA IN WHICH HYDROCARBON CONCENTRATIONS EXCEED GTCLs

0 40 80
GRAPHIC SCALE IN FEET

DRAWN BY MF	DATE 4/6/06	ORC INJECTION LOCATIONS UST SITE 14 THIRD QUARTER GROUNDWATER SAMPLING EVENT NAS PENSACOLA PENSACOLA, FLORIDA	CONTRACT NO. 0063
CHECKED BY	DATE		OWNER NO. 0000
REVISED BY	DATE		APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3 / REV. 0

FORM CADD NO. SDIV-BH.DWG – REV 1 – 9/10/98



LEGEND:

MW-02S	MONITORING WELL LOCATION AND DESIGNATION
NAS	NAVAL AIR STATION
(1.92)	GROUNDWATER ELEVATION
NS	LOCATION NOT SURVEYED
———	POTENTIOMETRIC SURFACE
2.0	GROUNDWATER ELEVATION
⇒	INFERRED GROUNDWATER FLOW DIRECTION

0 40 80
GRAPHIC SCALE IN FEET

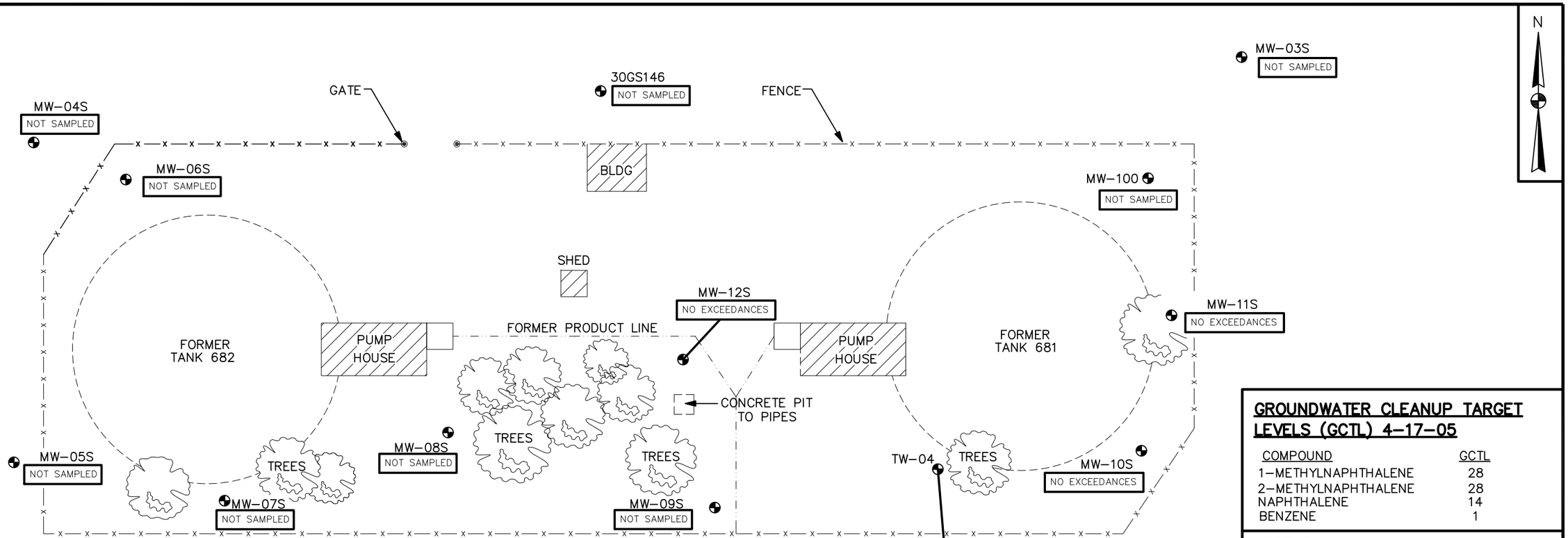
DRAWN BY MF	DATE 11/7/07	GROUNDWATER ELEVATIONS OCTOBER 24, 2007 UST SITE 14 THIRD QUARTER GROUNDWATER SAMPLING EVENT NAS PENSACOLA PENSACOLA, FLORIDA	CONTRACT NO. 0704
CHECKED BY	DATE		OWNER NO.
REVISED BY	DATE		APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 4 / REV. 0

NAVFAC

ACAD:0704CM04.dwg 02/04/08 MF PIT

FORM CADD NO. SDIV-BH.DWG – REV 1 – 9/10/98

ACAD:0704CM05.dwg 01/31/08 MF PIT



GROUNDWATER CLEANUP TARGET LEVELS (GCTL) 4-17-05

COMPOUND	GCTL
1-METHYLNAPHTHALENE	28
2-METHYLNAPHTHALENE	28
NAPHTHALENE	14
BENZENE	1

LEGEND:

MW-02S	MONITORING WELL LOCATION AND DESIGNATION
ND	NOT DETECTED
NA	NOT ANALYZED
NAS	NAVAL AIR STATION
J	ESTIMATED
d	DUPLICATE

NOTES:

1.) ANALYTE CONCENTRATIONS MEASURED IN MICROGRAMS/LITER (ug/L)

2.) EXCEEDANCES ARE IN BOLD

0 40 80

GRAPHIC SCALE IN FEET

PEN-681/682-TW04	6/23/03	9/23/03	12/9/03	3/8/04	6/8/04	7/19/05	10/24/05	1/25/06	1/25/06 d	4/19/06	4/19/06 d	4/18/07	7/23/07	7/23/07 d	10/25/07	10/25/07 d
1-METHYLNAPHTHALENE	ND	**42**	**89**	**42**	**64**	1.2	**32**	20	**28**	**30 J**	22	13.1	8.2	8.4	0.12	0.13
2-METHYLNAPHTHALENE	ND	**47**	**79**	**45**	**69**	0.99	26	15	21	19 J	14	8.6	6.8	7.4	0.11	0.10
NAPHTHALENE	ND	**29**	**58**	**19**	**41**	4.8	**19**	7	12	10	9.2	14.6	8.3	7.4	0.14	0.9 J
BENZENE	NA	NA	NA	NA	NA	**1.1**	**2**	0.61 J	0.74 J	0.5 J	0.31 J	NA	NA	NA	NA	NA

PEN-681/682-MW02S	6/23/03	9/23/03	12/9/03	3/8/04	6/8/04	7/19/05	10/24/05	1/26/06	4/19/06	4/18/07	4/18/07 d	7/24/07	10/25/07
1-METHYLNAPHTHALENE	21	**38**	**46**	**36**	27	23	24	**38**	**33**	20.5	20.5	ND	19
2-METHYLNAPHTHALENE	13	**39**	**40**	18	9.4	7.4	8	20	24	9.8	9.8	ND	12
NAPHTHALENE	3.3 J	**25**	**22**	4.3	2.5	5.4	9	5.6	6.5	12	11.1	ND	3.2
BENZENE	NA	NA	NA	NA	NA	0.45 J	**1 J**	ND	ND	NA	NA	NA	NA

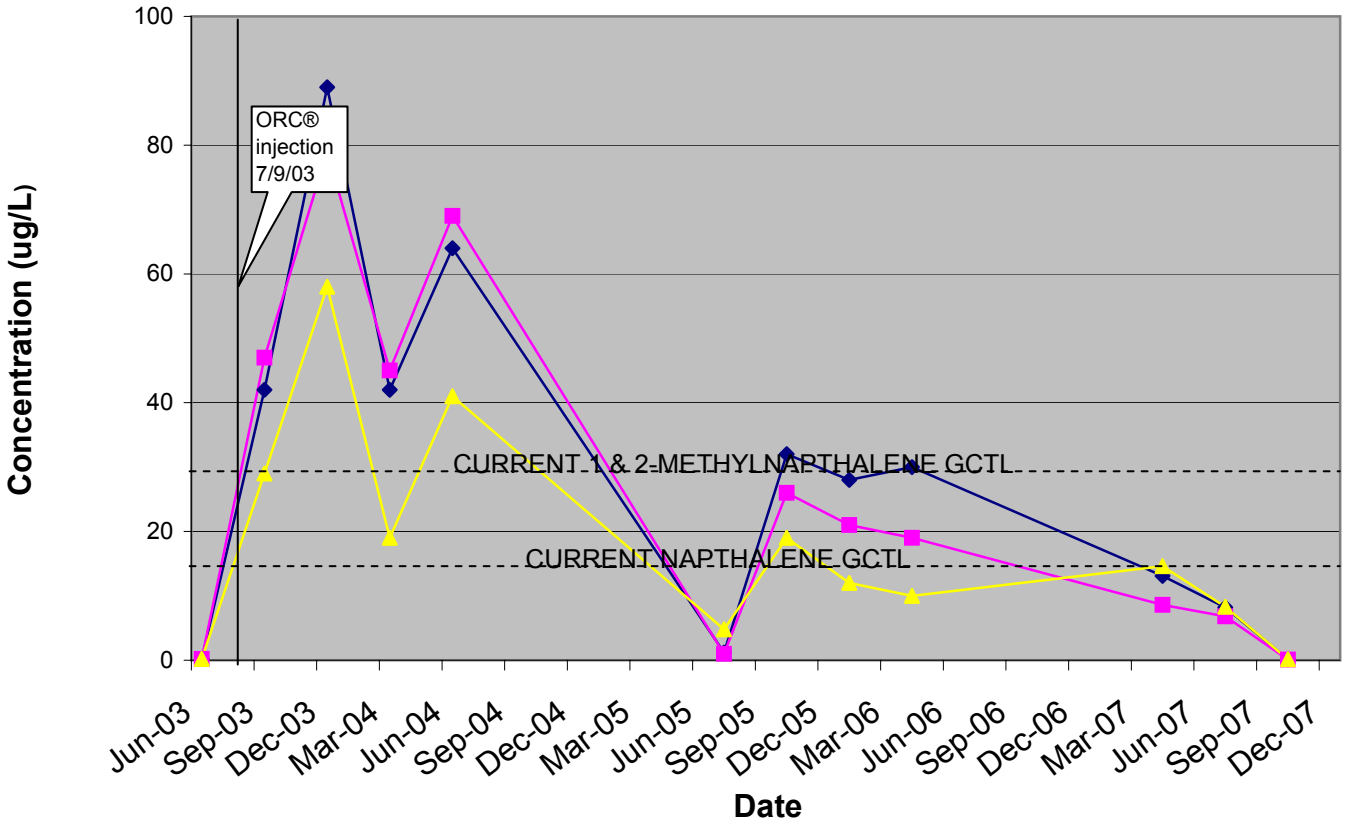
PEN-681/682-MW-01S	6/23/03	9/23/03	12/9/03	3/8/04	6/8/04	7/20/05	10/24/05	4/19/06	4/18/07	7/24/07	10/25/07
1-METHYLNAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	ND
2-METHYLNAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.8	ND
NAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	0.024 J	ND	2.7	ND

DRAWN BY MF	DATE 8/10/07	GROUNDWATER RESULTS UST SITE 14 THIRD QUARTER GROUNDWATER SAMPLING EVENT NAS PENSACOLA PENSACOLA, FLORIDA	CONTRACT NO. 0389
CHECKED BY	DATE		OWNER NO.
REVISED BY	DATE		APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 5 / REV. 0

NAVFAC

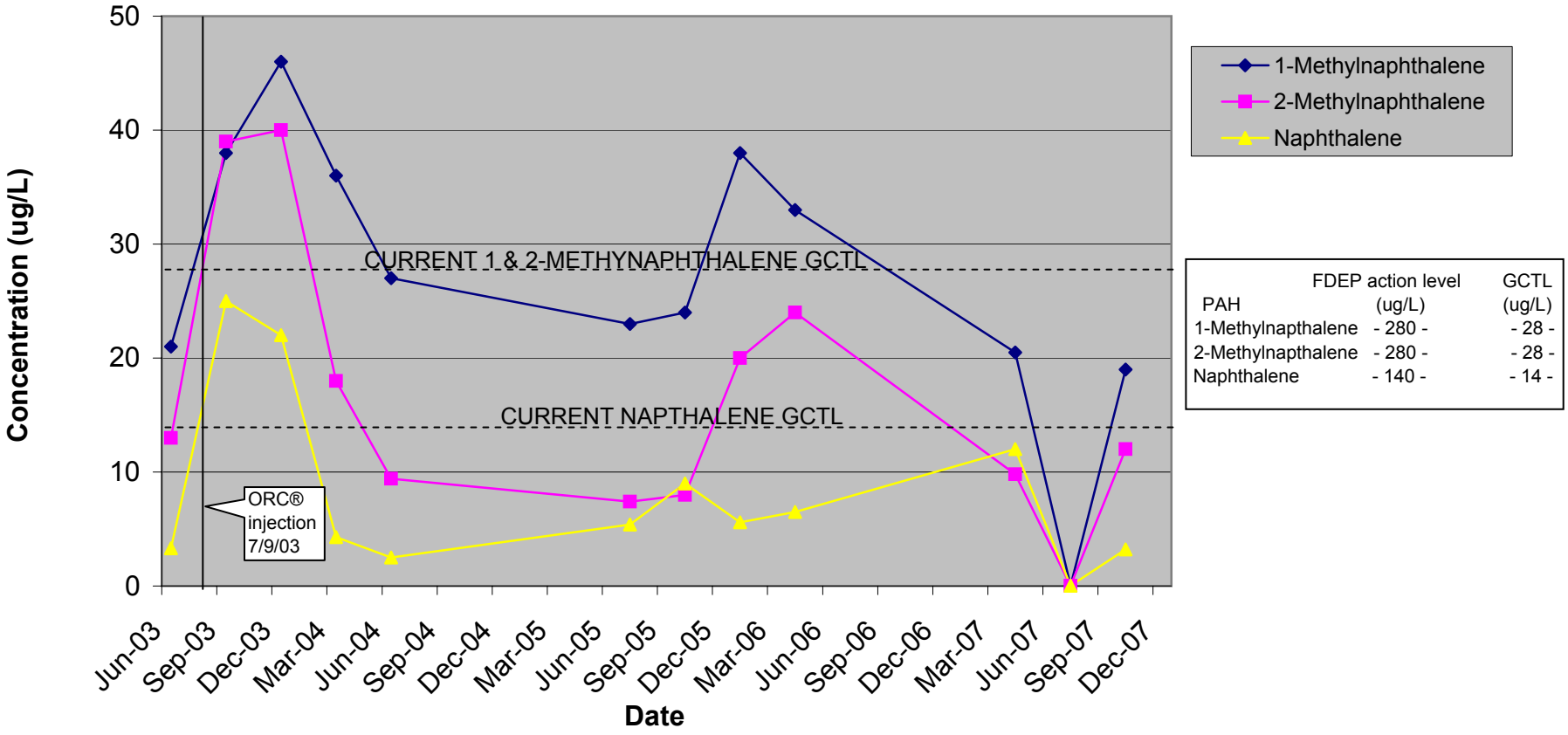
FORM CADD NO. SDIV-BH.DWG – REV 1 – 9/10/98

FIGURE 6
MONITORING WELL TW-04
SITE 14 NAS PENSACOLA
PENSACOLA, FLORIDA



PAH	FDEP action level (ug/L)	GCTL (ug/L)
1-Methylnapthalene	- 280 -	- 28 -
2-Methylnapthalene	- 280 -	- 28 -
Naphthalene	- 140 -	- 14 -

FIGURE 7
MONITORING WELL MW-02S
SITE 14 NAS PENSACOLA
PENSACOLA FLORIDA



PAH	FDEP action level (ug/L)	GCTL (ug/L)
1-Methylnapthalene	- 280 -	- 28 -
2-Methylnapthalene	- 280 -	- 28 -
Naphthalene	- 140 -	- 14 -

ATTACHMENT A

FIELD DATA FORMS

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: TS @ Site 14, NAS Pensacola
Project No.: N00704
Location: UST Site 14 tanks 681/682
Personnel: J. Brookins, ~~J. Hallmill~~, C.Odom
Weather Conditions:
Measuring Device Heron Dipper-T Water Level Indicator
Tidally Influenced: Yes ___ No X
Remarks:

Well or Piezometer Number	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
MW-01S	10/24/07	1600		23.05	16.83			0.6
MS-02S	10/24/07	1357		23.21	18.16			1.0
MW-03S	10/24/07	1354		23.58	16.07			0.8
MW-04S	10/24/07	1328		22.96	18.6			~~2.4~~ 1.4
TW-04	10/24/07	1343		28.21	22.95			2.4
MW-5S	10/24/07	1330		22.90	15.71			0.8
MW-06S	10/24/07	1333		24.78	19.45			0.9
MW-07S	10/24/07	1335		24.51	18.51			0.5
MW-08S	10/24/07	1338		24.63	18.05			0.5
MW-09S	10/24/07	1350		24.67	17.43			0.5
MW-10S	10/24/07	1345		29.69	22.49			0.5
MW-11S	10/24/07	1347		29.52	23.46			0.8
MW-12S	10/24/07	1340		29.66	22.43			0.7
MW-100	10/24/07	1352		28.38	23.07			0.6

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASP site 14 Treatability Study
Project No.: 112G00704

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-site14-MW01-1007
Sample Location: MW-01S
Sampled By: [illegible]
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 10/25/07 Time: 1000	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	ORP (mV)	Time	SWL (ft-blc)
Method:low flow	clear	7.33	0.387	23.71	1.6	1.92	32.6		

PURGE DATA:

Date: 10/25/07	Volume	pH	S.C.	Temp.	Turbidity	DO	ORP	Time	SWL
Method:low flow	2.0	7.32	0.396	23.15	8.1	1.53	50.3	0927	23.10
Monitor Reading (ppm): 0.6	4.0	7.34	0.402	23.55	2.4	1.95	36.4	0932	23.11
Well Casing Diameter & Material	6.0	7.35	0.392	23.66	1.6	1.83	33.8	0937	23.11
Type: 1.0" PVC	8.0	7.33	0.387	23.71	1.6	1.92	32.6	0942	23.11
Total Well Depth (TD): 23.05									
Static Water Level (WL): 16.83									
One Casing Volume(gal/L):									
Start Purge (hrs): 0922									
End Purge (hrs): 0942									
Total Purge Time (min): 20									
Total Vol. Purged (gal/L) 8.0									

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
ENCO LABS			Yes
PAHs-8270 SIM	none	1 x 1L Amber	Yes
dissolved Fe-6010B (field filter)	HNO_3	1 x 250 mL Plastic	Yes
TOC-415.1	H_3PO_4	2 x 40 mL amber vial	Yes
alkalinity-310.2	none	1 x 500 mL Plastic	Yes
o-PO_4 -365.3	none	1 x 250 mL Plastic	Yes
S^{--}-376.1	Zn acetate +NaOH	1 x 250 mL Plastic	Yes
TKN-351.2 / tot. P-365.4 / NH_3-350.1	H_2SO_4	2 x 250 mL Plastic	Yes
NO_2^- as N, NO_3^- as N, CL^-, SO_4^{--}- 300	none	1 x 250 mL Plastic	Yes
MICROSEEPS			
CO_2-AM20GAX	BAK	1 x 40 mL amber vial	Yes
MEE/H_2-AM20GAX(bubble stripper)	none	1 x 25 mL glass vial	Yes

Natural Attneuation Parameters

DO- 2.0 mg/L
H_2S 0.0 mg/L
ferrous iron- 0.8 mg/L
alkalinity- 110 mg/L
CO_2- 16 mg/L

flow rate = 400mL/min

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASP site 14 Treatability Study
Project No.: 112G00704

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-site14-MW12-1007
Sample Location: MW-12S
Sampled By: C.Odom
C.O.C. No.:
Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 10/24/07 Time: 1500	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	ORP (mV)	Time	SWL (ft-blc)
Method: low flow	clear	6.60	0.317	23.28	5.3	2.11	54.0		

PURGE DATA:

Date: 10/24/07	Volume	pH	S.C.	Temp.	Turbidity	DO	ORP	Time	SWL
Method: low flow	2.0L	6.59	.342	23.13	13	3.08	61.2	1415	22.47
Monitor Reading (ppm): 0.7	4.0	6.60	0.329	23.20	9.0	2.61	61.6	1420	22.47
Well Casing Diameter & Material	6.0	6.59	0.325	23.25	7.9	2.26	57.4	1425	22.48
Type: 1.25" PVC	8.0	6.60	0.322	23.25	6.8	2.17	55.2	1430	22.48
Total Well Depth (TD): 29.66	10.0	6.60	0.317	23.28	5.3	2.11	54.0	1435	22.47
Static Water Level (WL): 22.42									
One Casing Volume(gal/L):									
Start Purge (hrs): 1410									
End Purge (hrs): 1435									
Total Purge Time (min): 25									
Total Vol. Purged (gal/L) 10.0									

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
ENCO LABS			
PAHs-8270 SIM	none	1 x 1L Amber	Yes
dissolved Fe-6010B (field filter)	HNO_3	1 x 250 mL Plastic	Yes
TOC-415.1	H_3PO_4	2 x 40 mL amber vial	Yes
alkalinity-310.2	none	1 x 500 mL Plastic	Yes
o-PO_4 -365.3	none	1 x 250 mL Plastic	Yes
S^{--}-376.1	Zn acetate +NaOH	1 x 250 mL Plastic	Yes
TKN-351.2 / tot. P-365.4 / NH_3-350.1	H_2SO_4	1 x 250 mL Plastic	Yes
NO_2^- as N, NO_3^- as N, CL^-, SO_4^{--}- 300	none	1 x 250 mL Plastic	Yes
MICROSEEPS			
CO_2-AM20GAX	BAK	1 x 40 mL amber vial	Yes
MEE/H_2-AM20GAX(bubble stripper)	none	1 x 25 mL glass vial	Yes

Natural Attneuation Parameters

DO- 3.0 mg/L
H_2S 0.0 mg/L
ferrous iron- 0.1 mg/L
alkalinity- 85 mg/L
CO_2- 18 mg/L

flow rate = 400mL/min

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASP site 14 Treatability Study
Project No.: 112G00704

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-site14-MW10-1007
Sample Location: MW-10S
Sampled By: JB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 10/25/07 Time: 1115	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	ORP (mV)	Time	SWL (ft-blc)
Method: low flow	clear	5.46	.444	24.52	9.6	0.76	61.0	1107	22.63

PURGE DATA:

Date: 10/25/07	~~Volume~~ Reading	pH	S.C.	Temp.	Turbidity	DO	ORP	Time	SWL
Method: low flow	Initial	5.56	.466	24.30	35	2.88	97.9	1048	22.49
Monitor Reading (ppm): 0.5	1st	5.41	.465	24.43	14	1.30	110.4	1052	22.58
Well Casing Diameter & Material	2nd	5.40	.450	24.45	10	0.95	90.5	1057	22.59
Type: 1.25" PVC	3rd	5.43	.450	24.49	9.5	0.79	67.3	1103	22.61
Total Well Depth (TD): 29.69	4th	5.46	.444	24.52	9.6	0.76	61.0	1107	22.63
Static Water Level (WL): 22.49									
One Casing Volume(gal/L):									
Start Purge (hrs): 1045									
End Purge (hrs): 1107									
Total Purge Time (min):									
Total Vol. Purged (gal/L):									

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
ENCO LABS			
PAHs-8270 SIM	none	1 x 1L Amber	✓
dissolved Fe-6010B (field filter)	HNO_3	1 x 250 mL Plastic	✓
TOC-415.1	H_3PO_4	2 x 40 mL amber vial	✓
alkalinity-310.2	none	1 x 500 mL Plastic	✓
o-PO_4 -365.3	none	1 x 250 mL Plastic	✓
S^{--}-376.1	Zn acetate +NaOH	1 x 250 mL Plastic	✓
TKN-351.2 / tot. P-365.4 / NH_3-350.1	H_2SO_4	2 x 250 mL Plastic	✓
NO_2^- as N, NO_3^- as N, CL^-, SO_4^{--}- 300	none	1 x 250 mL Plastic	✓
MICROSEEPS			
CO_2-AM20GAX	BAK	1 x 40 mL amber vial	✓
MEE/H_2-AM20GAX(bubble stripper)	none	1 x 25 mL glass vial	✓

Natural Attneuation Parameters

DO- 42.0 mg/L
H_2S 0.1 mg/L
ferrous iron- 1.0 mg/L
alkalinity- 30 mg/L
CO_2- 20 mg/L

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASP site 14 Treatability Study
Project No.: 112G00704

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-site14-MW11-1007
Sample Location: MW-11S
Sampled By: JB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 10/25/07 Time: 0950	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (^{0}C)	Turbidity (NTU)	DO (mg/l)	ORP (mV)	Time	SWL (ft-blc)
Method: low flow	clear	6.58	.258	25.81	11	2.16	13.0	0950	

PURGE DATA:

Date: 10/25/07	~~Volume~~ Reading	pH	S.C.	Temp.	Turbidity	DO	ORP	Time	SWL
Method: low flow	Initial	6.51	.178	24.96	45	3.62	64.5	0915	23.16
Monitor Reading (ppm): 0.8	1st	6.54	.224	22.50	21	2.33	43.1	0926	23.41
Well Casing Diameter & Material	2nd	6.57	.252	26.64	14	2.26	23.1	0939	23.43
Type: 1.25" PVC	3rd	6.58	.255	25.80	11	2.18	18.9	0943	23.47
Total Well Depth (TD): 29.52	4th	6.58	.258	25.81	11	2.16	13.0	0947	23.47
Static Water Level (WL): 23.16									
One Casing Volume(gal/L):									
Start Purge (hrs): 0910									
End Purge (hrs): 0948									
Total Purge Time (min): 38									
Total Vol. Purged (gal/L):									

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
ENCO LABS			
PAHs-8270 SIM	none	1 x 1L Amber	✓
dissolved Fe-6010B (field filter)	HNO_3	1 x 250 mL Plastic	✓
TOC-415.1	H_3PO_4	2 x 40 mL amber vial	✓
alkalinity-310.2	none	1 x 500 mL Plastic	✓
o-PO_4 -365.3	none	1 x 250 mL Plastic	✓
S^{--}-376.1	Zn acetate +NaOH	1 x 250 mL Plastic	✓
TKN-351.2 / tot. P-365.4 / NH_3-350.1	H_2SO_4	2 x 250 mL Plastic	✓
NO_2^- as N, NO_3^- as N, CL^-, SO_4^{--}- 300	none	1 x 250 mL Plastic	✓
MICROSEEPS			
CO_2-AM20GAX	BAK	1 x 40 mL amber vial	✓
MEE/H_2-AM20GAX(bubble stripper)	none	1 x 25 mL glass vial	✓

Natural Attneuation Parameters

DO- 2.0 mg/L
H_2S 0.1 mg/L
ferrous iron- 0.0 mg/L
alkalinity- 40.0 mg/L
CO_2- 200.0 mg/L

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASP site 14 Treatability Study
Project No.: 112G00704

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-site14-TW04-1007
Sample Location: TW04
Sampled By: JB
C.O.C. No.:
Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 10/24/07 Time: 1455	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	ORP (mV)	Time	SWL (ft-blc)
Method:low flow	clear	8.00	.237	23.92	7.1	24.7	-8.0	1450	

PURGE DATA:

Date: 10/24/07	Volume	pH	S.C.	Temp.	Turbidity	DO	ORP	Time	SWL
Method:low flow	Initial	9.10	.371	22.43	85	18.2	-68.9	1421	
Monitor Reading (ppm): 2.4	1st	8.20	.239	23.57	13	24.4	-15.8	1432	
Well Casing Diameter & Material	2nd	7.98	.234	23.81	11	25.5	-3.4	1439	
Type: 2.0" PVC	3rd	8.00	.237	23.92	7.1	24.7	-8.0	1450	
Total Well Depth (TD): 28.21									
Static Water Level (WL): 22.95									
One Casing Volume(gal/L):									
Start Purge (hrs): 1419									
End Purge (hrs): 1455									
Total Purge Time (min): 36									
Total Vol. Purged (gal/L): 2.4									

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
ENCO LABS			
PAHs-8270 SIM	none	1 x 1L Amber	✓
dissolved Fe-6010B (field filter)	HNO_3	1 x 250 mL Plastic	✓
TOC-415.1	H_3PO_4	2 x 40 mL amber vial	✓
alkalinity-310.2	none	1 x 500 mL Plastic	✓
o-PO_4 -365.3	none	1 x 250 mL Plastic	✓
S^{--}-376.1	Zn acetate +NaOH	1 x 250 mL Plastic	✓
TKN-351.2 / tot. P-365.4 / NH_3-350.1	H_2SO_4	2 x 250 mL Plastic	✓
NO_2^- as N, NO_3^- as N, CL^-, SO_4^{--}- 300	none	1 x 250 mL Plastic	✓
MICROSEEPS			
CO_2-AM20GAX	BAK	1 x 40 mL amber vial	✓
MEE/H_2-AM20GAX(bubble stripper)	none	1 x 25 mL glass vial	✓

Natural Attneuation Parameters

DO- 3.0 mg/L
H_2S 0.1 mg/L
ferrous iron- 0.6 mg/L
alkalinity- 50.0 mg/L
CO_2- 25.0 mg/L

Circle if Applicable:

MS/MSD

Duplicate ID No.: PEN-site14-DUP01-10/07

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASP site 14 Treatability Study
Project No.: 112G00704

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-site14-MW02-1007
Sample Location: MW-02S
Sampled By:
C.O.C. No.:
Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 10/25/07	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Time	SWL
Time: 1300	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(mV)		(ft-blc)
Method:low flow	[illegible]	7.95	0.227	23.98	38	0.60	23.8		

PURGE DATA:

Date: 10/25/07	Volume	pH	S.C.	Temp.	Turbidity	DO	ORP	Time	SWL
Method:low flow	2.0	8.61	0.215	24.37	45	1.17	1.1	1105	18.21
Monitor Reading (ppm): 1.0	4.0	8.49	0.224	24.35	45	1.78	4.8	1110	18.21
Well Casing Diameter & Material	6.0	8.41	0.226	24.34	40	2.02	9.4	1115	18.20
Type: 1.0" PVC	8.00	8.30	0.243	24.16	45	1.20	16.7	1125	18.20 200 mL/m
Total Well Depth (TD): 23.21	18.0	8.15	0.231	24.26	40	1.32	16.9	1145	18.21
Static Water Level (WL): 18.16	13.0	8.13	0.231	24.18	39	0.85	17.9	1150	18.20
One Casing Volume(gal/L):	14.0	8.08	0.229	24.07	37	0.77	20.9	1155	18.25
Start Purge (hrs): 1100	22.0	7.95	0.227	23.97	35	0.55	23.9	1235	18.20
End Purge (hrs): 1250	23.0	7.96	0.227	23.97	38	0.52	24.2	1240	18.22
Total Purge Time (min): 110	24.0	7.95	0.228	23.98	37	0.53	24.1	1245	18.20
Total Vol. Purged (gal/L): 25	25.0	7.95	0.227	23.98	38	0.60	23.8	1250	18.20

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
ENCO LABS			
PAHs-8270 SIM	none	1 x 1L Amber	Yes
dissolved Fe-6010B (field filter)	HNO_3	1 x 250 mL Plastic	Yes
TOC-415.1	H_3PO_4	2 x 40 mL amber vial	Yes
alkalinity-310.2	none	1 x 500 mL Plastic	Yes
o-PO_4 -365.3	none	1 x 250 mL Plastic	Yes
S^{--}-376.1	Zn acetate +NaOH	1 x 250 mL Plastic	Yes
TKN-351.2 / tot. P-365.4 / NH_3-350.1	H_2SO_4	2 x 250 mL Plastic	Yes
NO_2^- as N, NO_3^- as N, CL^-, SO_4^{--} - 300	none	1 x 250 mL Plastic	Yes
MICROSEEPS			
CO_2-AM20GAX	BAK	1 x 40 mL amber vial	Yes
MEE/H_2-AM20GAX(bubble stripper)	none	1 x 25 mL glass vial	Yes

Natural Attneuation Parameters

flow rate = 400 mL/m

DO- 1.0 mg/L
H_2S 1.5 mg/L
ferrous iron- 2.0 mg/L
alkalinity- <15 mg/L
CO_2- 22 mg/L

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : NASP site 14 Treatability Study

INSTRUMENT NAME/MODEL: PhotoVac PID

SITE NAME: UST site 14 tanks 681/682

MANUFACTURER:

PROJECT No.: 112G00704

SERIAL NUMBER:

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
8/~~22~~ 21/2007	02051	Curtis Odom			Zero-	0.0		
~~8/23/2007~~		Curtis Odom			Span-	100.0		
08/23/07 ~~8/24/2007~~	02051	Curtis Odom			Zero-	0.0		
8/25/2007		Curtis Odom			Span-	100.0		
8/26/2007		Curtis Odom						

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : NASP site 14 Treatability Study

INSTRUMENT NAME/MODEL: LaMotte 2020

SITE NAME: UST site 14 tanks 681/682

MANUFACTURER: Lamotte

PROJECT No.: 112G00704

SERIAL NUMBER: 01905

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
8/~~22~~ 24/2007					0.95	1.00		1.0 NTU
					8.6	10.0		10.0 NTU
8/~~26~~ 25/2007					1.1	1.00		1.0 NTU
					9.8	10.0		10.0 NTU
8/24/2007								1.0 NTU
								10.0 NTU

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : NASP site 14 Treatability Study

INSTRUMENT NAME/MODEL: LaMotte 2020

SITE NAME: UST site 14 tanks 681/682

MANUFACTURER: Lamotte

PROJECT No.: 112G00704

SERIAL NUMBER: 02919

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
8/22/2007					0.35	1.00		1.0 NTU
					"	10.0		10.0 NTU
8/23/2007					0.85	1.00		1.0 NTU
					8.7	10.0		10.0 NTU
8/24/2007								1.0 NTU
								10.0 NTU

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : NASP site 14 Treatability Study

INSTRUMENT NAME/MODEL: YSI 556MPS

SITE NAME: UST site 14 tanks 681/682

MANUFACTURER: YSI

PROJECT No.: 112G00704

SERIAL NUMBER:

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
24								
8/~~22~~/2007	08951				1.452	1.414	5889	SC
					235.2	240.2	G2133	ORP
					10.04	10.00	7010	pH 10.0
					6.58	7.00	1705846	pH 7.0
25					104.1	100.0	N/A	DO 90
8/~~23~~/2007					1.415	1.413	5889	SC
					243.9	240.2	G2133	ORP
					10.06	10.01	7010	pH 10.0
					6.92	7.01	1705846	pH 7.0
26					100.2	99.8	N/A	DO
8/~~24~~/2007								SC
								ORP
								pH
								pH
								DO
								SC
								ORP
								pH
								pH
								DO

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : NASP site 14 Treatability Study

INSTRUMENT NAME/MODEL: YSI 556MPS

SITE NAME: UST site 14 tanks 681/682

MANUFACTURER: YSI

PROJECT No.: 112G00704

SERIAL NUMBER:

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
8/22/2007	08631				1.198	1.416	5889	SC
					257.3	239.8	G2133	ORP
					10.12	10.06	7010	pH
					6.85	7.00	1705846	pH
					77.4	99.9	N/A	DO
8/23/2007					1.412	1.413	5889	SC
					244.0	240.3	G2133	ORP
					10.02	10.00	7010	pH
					7.79	7.02	1705846	pH
					102.8	99.9		DO
8/24/2007								SC
								ORP
								pH
								pH
								DO
								SC
								ORP
								pH
								pH
								DO

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** 1858 | **PAGE ___ OF ___**

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G00704	MASP site 14	Gary Walker	850 385 9966	ENCO / Chris Turnbull
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
[signature]		Curtis Odom	850 570-1918	10775 Central Port Drive
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		8625 4731 6341		Orlando, Florida 32824

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

DATE YEAR 2007	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	PA+1-8270	[illegible]-376.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	TOC	COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)									G	P	P	P	P	P	P	G	
PRESERVATIVE USED									—	2 ml HCl	1/2 ml HCl	—	—	—	1/w 2 1/3 pint		
10/24	1500	PEN-site14-MW12-1007	MW12	—	—	GW	G	9	1	1	1	1	1	1	1	2	
10/24	1500	PEN-site14-MW12-1007-MS	MW12	—	—	GW	G	9	1	1	1	1	1	1	1	2	
10/24	1500	PEN-site14-MW12-1007-MSD	MW12	—	—	GW	G	9	1	1	1	1	1	1	1	2	
10/24	1455	PEN-site14-TW04-1007	TW04	—	—	GW	G	9	1	1	1	1	1	1	1	2	
		~~PEN-site14-TW04-1007-FB~~ CO		—	—												
10/24		PEN-site14-dupe1-1007	27	—	—	GW	G	9	1	1	1	1	1	1	1	2	

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
[signature]	10/24/07	1500			
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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

4/02R
FORM NO. TtNUS-001

Microseeps Lab. Proj. # _____

CHAIN - OF - CUSTODY RECORD

Microseeps COC cont. # 0300

Phone: (412) 826-5245 | Microseeps, Inc. - 220 William Pitt Way - Pittsburgh, PA 15238 | Fax No. : (412) 826-3433

Company : Tetra-Tech NUS

Co. Address : 3760 Capital Circle NE Ste B Tallahassee, FL 32308

Phone # : (850) 385-9899 Fax # : (850) 385-9860

Proj. Manager : Gerry Walker

Proj. Name/Number : Site 14/112G00704 CTO 71

Sampler's signature : [signature]

Cooler Temp.

Results to : Kelly Cooper, Foster Plaza VII, 661 Andrew Drive, Pittsburgh, PA 15223

Invoice to : Gerry Walker, 3760 Capital Circle NE Ste B, Tallahassee, FL 32308

Parameters Requested: CO_2; H_2 + MEE

Sample ID	Sample Description	Sample Type: Water	Vapor	Solid	Date	Time	# Bottles	CO_2	H_2 + MEE	Remarks :
PFN-site14-MW12-1007	MW12	1	1		10/24/07	1500	2	1	1	
PFN-site14-TW04-1007	TW04	1	1		10/24/07	1155	2	1	1	
~~PFN-site14-MW11~~										
PFN-site14-MW11-1007	MW11	1	1		10/25/07	0950	2	1	1	
PFN-site14-MW01-1007	MW01	1	1		10/25/07	1000	2	1	1	
PFN-site14-MW10-1007	MW10	1	1		10/25/07	1115	2	1	1	
PFN-site14-MW02-1007	MW02	1	1		10/25/07	1300	2	1	1	

Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
[signature]	TNUS	10/25	1600				
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :

WHITE COPY : Accompany Samples YELLOW COPY : Laboratory File PINK COPY : Submitter

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

1015 Passport Way
Cary, NC 27513
(919) 677-1669 Fax (919) 677-9846

Client Name: Tetra Tech NUS (BR004)	Project Number: 112G00704
Address: 3360 Capital Circle NE Suite B	Project Name/Desc: Nas Pensacola CTO 0071
City/ST/Zip: Tallahassee, FL 32308	PO # / Billing Info: 1004882
Tel: (850) 385-9899 Fax: (904) 656-7403	Reporting Contact: Gerald Walker
Sampler(s) Name, Affiliation (Print): Curtis Odom, Jason Bulgeois	Billing Contact: Accounts Payable
Sampler(s) Signature: [signature]	Facility # (if required)

Requested Analyses

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

✓ Standard

___ Expedited

Due ___/___/___

Lab Workorder: B709195

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	8270C PAH SIM	Alkalinity 310.1, Chloride 300, Nitrate as N 300, Nitrite as N 300, Sulfate 300	Ammonia 350.1, P, TKN 351.2	Fe/F	Phosphate, Ortho 365.1	Sulfide 376.1	TOC 415.1				Sample Comments
	PEN-site14-MW11-1007	10/25/07	0950	G	Water	9	X	X	X	X	X	X	X				
	PEN-site14-MW02-1007	10/25/07	1300	G	Water	9	X	X	X	X	X	X	X				
	PEN-site14-MW10-1007	10/25/07	1115	G	Water	9	X	X	X	X	X	X	X				
	PEN-site14-MW01-1007	10/25/07	1000	G	Water	9	X	X	X	X	X	X	X				
	-				Water	9	X	X	X	X	X	X	X				
	-				Water	9	X	X	X	X	X	X	X				
	-				Water	9	X	X	X	X	X	X	X				
	-				Water	9	X	X	X	X	X	X	X				
	-				Water	9	X	X	X	X	X	X	X				
	-				Water	9	X	X	X	X	X	X	X				
	MS/MSD				Water	27	X	X	X	X	X	X	X				
	-				Water	9	X	X	X	X	X	X	X				

Preservation (See Codes) (Combine as necessary)

<-- Total # of Containers

Sample Kit Prepared By: GB	Date/Time: 10/12/07 1730	Relinquished By: [signature]	Date/Time: 10/12/07 1730	Received By:	Date/Time:
Comments:		Relinquished By: Curtis Odom	Date/Time: 10/25/07 1600	Received By:	Date/Time:
		Relinquished By:	Date/Time:	Received By:	Date/Time:
		Cooler #'s & Temps on Receipt		Condition Upon Receipt: ___ Acceptable ___ Unacceptable	

Matrix : **GW**-Groundwater **SO**-Soil **SE**-Sediment **SW**-Surface Water **WW**-Wastewater **A**-Air **O**-Other (detail in comments)

Preservation: **I**-Ice **H**-HCl **N**-HNO3 **S**-H2SO4 **NO**-NaOH **O**-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

ATTACHMENT B

DATA VALIDATION REPORT

CASE NARRATIVE
Client: TetraTech NUS
Project Name: NAS Pensacola
SDG: PEN-SITE14-MW01-1007
Microseeps Project No.: P0710392

Sample Receipt

Microseeps, Inc. received the sample shipment on 10/26/2007. Copies of the laboratory's cooler receipt forms are enclosed. A summary of the field and laboratory identifications is presented below. Because of space limitations, sample identifications have been shortened for the reporting forms.

FIELD IDENTIFICATION	LAB IDENTIFICATION
PEN-SITE14-MW12-1007	P0710392-01
PEN-SITE14-TW04-1007	P0710392-02
PEN-SITE14-MW11-1007	P0710392-03
PEN-SITE14-MW01-1007	P0710392-04
PEN-SITE14-MW10-1007	P0710392-05
PEN-SITE14-MW02-1007	P0710392-06

A copy of all communications concerning this project has been enclosed.

Sample Analyses

The sample analyses were performed in accordance with Microseeps routine Standard Operating procedures. There were no unusual circumstances noted with the analyses for these samples.

U.S. EPA - CLP
1
OTHER ANALYSIS DATA SHEET

EPASampleNo:

Lab Name: Microseeps, Inc. Contract: N62467-04-D-0055 PEN-SITE14-MW12-007

Lab Code: P0710392 Case No.: CTO 71 SAS No.: SDG No.: MW-01-10-07

Matrix (soil / water): Vapor Lab Sample ID: P0710392-01A

Level (low/med): Date Received: 10/26/2007

% Solids:

Concentration Units :

CAS No.	Analyte	Concentration	Units	C	Q	M
1333-74-0	Hydrogen	2.90	nM			
124-38-9	Carbon dioxide	26.0	mg/L			
74-84-0	Ethane	0.010	ug/L	U		
74-85-1	Ethene	0.010	ug/L	U		
74-82-8	Methane	340	ug/L			

U.S. EPA - CLP
1
OTHER ANALYSIS DATA SHEET

EPASampleNo:

Lab Name: Microseeps, Inc. Contract: N62467-04-D-0055 PEN-SITE14-TW04-1007

Lab Code: P0710392 Case No.: CTO 71 SAS No.: SDG No.: MW-01-10-07

Matrix (soil / water): Vapor Lab Sample ID: P0710392-02A

Level (low/med): Date Received: 10/26/2007

% Solids:

Concentration Units :

CAS No.	Analyte	Concentration	Units	C	Q	M
1333-74-0	Hydrogen	8.20	nM			
124-38-9	Carbon dioxide	16.0	mg/L			
74-84-0	Ethane	0.011	ug/L			
74-85-1	Ethene	0.034	ug/L			
74-82-8	Methane	28.0	ug/L			

U.S. EPA - CLP
1
OTHER ANALYSIS DATA SHEET

EPASampleNo:

Lab Name: Microseeps, Inc. Contract: N62467-04-D-0055 PEN-SITE14-MW11-1007

Lab Code: P0710392 Case No.: CTO 71 SAS No.: SDG No.: MW-01-10-07

Matrix (soil / water): Vapor Lab Sample ID: P0710392-03A

Level (low/med): Date Received: 10/26/2007

% Solids:

Concentration Units :

CAS No.	Analyte	Concentration	Units	C	Q	M
1333-74-0	Hydrogen	1.70	nM			
124-38-9	Carbon dioxide	25.0	mg/L			
74-84-0	Ethane	0.083	ug/L			
74-85-1	Ethene	0.010	ug/L	J		
74-82-8	Methane	1400	ug/L			

U.S. EPA - CLP
1
OTHER ANALYSIS DATA SHEET

EPASampleNo:

Lab Name: Microseeps, Inc. Contract: N62467-04-D-0055 PEN-SITE14-MW01-007

Lab Code: P0710392 Case No.: CTO 71 SAS No.: SDG No.: MW-01-10-07

Matrix (soil / water): Vapor Lab Sample ID: P0710392-04A

Level (low/med): Date Received: 10/26/2007

% Solids:

Concentration Units :

CAS No.	Analyte	Concentration	Units	C	Q	M
1333-74-0	Hydrogen	1.30	nM			
124-38-9	Carbon dioxide	31.0	mg/L			
74-84-0	Ethane	0.002	ug/L	J		
74-85-1	Ethene	0.007	ug/L	J		
74-82-8	Methane	0.042	ug/L			

U.S. EPA - CLP
1
OTHER ANALYSIS DATA SHEET

EPASampleNo: PEN-SITE14-MW10-007

Lab Name: Microseeps, Inc. Contract: N62467-04-D-0055

Lab Code: P0710392 Case No.: CTO 71 SAS No.: SDG No.: MW-01-10-07

Matrix (soil / water): Vapor Lab Sample ID: P0710392-05A

Level (low/med): Date Received: 10/26/2007

% Solids:

Concentration Units :

CAS No.	Analyte	Concentration	Units	C	Q	M
1333-74-0	Hydrogen	3.90	nM			
124-38-9	Carbon dioxide	120	mg/L			
74-84-0	Ethane	0.036	ug/L			
74-85-1	Ethene	0.120	ug/L			
74-82-8	Methane	670	ug/L			

U.S. EPA - CLP
1
OTHER ANALYSIS DATA SHEET

EPASampleNo:

Lab Name: Microseeps, Inc. Contract: N62467-04-D-0055 PEN-SITE14-MW02-007

Lab Code: P0710392 Case No.: CTO 71 SAS No.: SDG No.: MW-01-10-07

Matrix (soil / water): Vapor Lab Sample ID: P0710392-06A

Level (low/med): Date Received: 10/26/2007

% Solids:

Concentration Units :

CAS No.	Analyte	Concentration	Units	C	Q	M
1333-74-0	Hydrogen	3.40	nM			
124-38-9	Carbon dioxide	28.0	mg/L			
74-84-0	Ethane	0.020	ug/L			
74-85-1	Ethene	0.020	ug/L			
74-82-8	Methane	800	ug/L			

Environmental Conservation Laboratories, Inc.
4810 Executive Park Court, Suite 211
Jacksonville FL, 32216-6069
Phone: 904.296.3007 FAX: 904.296.6210
www.encolabs.com

Tuesday, November 20, 2007

Tetra Tech NUS (BR004)

Attn: Gerald Walker

3360 Capital Circle NE Suite B

Tallahassee, FL 32308

RE: Laboratory Results for
Project Number: 112G00704, Project Name/Desc: Nas Pensacola CTO 0071
ENCO Workorder: B709195

Dear Gerald Walker,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Thursday, October 25, 2007.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Jacksonville. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Lorraine Strong

Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 40.

CASE NARRATIVE

Tetra Tech NUS, Inc/NAS PENSACOLA CTO 0071
Project Manger Mr. Gerald Walker
SDG BR004-001

Lab Sample ID	Client Sample ID
B709195-01	PEN-SITE14-MW12-1007
B709195-02	PEN-SITE14-TW04-1007
B709195-03	PEN-SITE14-DUP01-1007
B709195-04	PEN-SITE14-MW11-1007
B709195-05	PEN-SITE14-MW02-1007
B709195-06	PEN-SITE14-MW10-1007
B709195-07	PEN-SITE14-MW02-1007

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Sample B709195 -01 (PEN-SITE14-MW12-1007) was the designated matrix spike/matrix spike duplicate. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

Metals EPA Method 6010B

The closing calibration blank for Iron was detected above the method reporting limit; however, this blank was only associated with the closing interference check standard that was well with acceptable control limits.

Wet Chemistry EPA Method 300.0

The target compound Chloride was detected in the method blank (7j26006-Blk1) below the reporting limit. The concentration detected in samples for Chloride is greater than ten times the concentration of the concentration detected in the method blank; therefore, the impact on the data quality is minimal.

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: PEN-SITE14-MW12-1007-MS/MSD **Lab ID: B709195-01** **Sampled: 10/24/07 15:00** **Received: 10/25/07 09:40**

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	10/26/07	15:00	10/26/07	09:00	10/26/2007 11:20
EPA 300.0	11/21/07		10/26/07	09:00	10/26/2007 11:20
EPA 310.2	11/07/07		10/29/07	15:52	10/30/2007 10:01
EPA 350.1	11/21/07		10/29/07	07:56	10/29/2007 12:12
EPA 351.2	11/21/07		10/30/07	11:50	10/31/2007 11:32
EPA 365.1	10/26/07	15:00	10/26/07	10:04	10/26/2007 10:16
EPA 365.4	11/21/07		10/30/07	11:50	10/31/2007 14:38
EPA 376.1	10/31/07		10/28/07	12:51	10/28/2007 13:30
EPA 415.1	11/21/07		11/06/07	15:08	11/7/2007 12:48
EPA 6010B	04/21/08		10/30/07	05:17	10/31/2007 02:05
EPA 8270C	10/31/07	12/08/07	10/29/07	11:33	10/29/2007 23:48

Client ID: PEN-SITE14-TW04-1007 **Lab ID: B709195-02** **Sampled: 10/24/07 14:55** **Received: 10/25/07 09:40**

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	10/26/07	14:55	10/26/07	09:00	10/26/2007 12:13
EPA 300.0	11/21/07		10/26/07	09:00	10/26/2007 12:13
EPA 310.2	11/07/07		10/29/07	15:52	10/30/2007 10:08
EPA 350.1	11/21/07		10/29/07	07:56	10/29/2007 12:17
EPA 351.2	11/21/07		10/30/07	11:50	10/31/2007 11:36
EPA 365.1	10/26/07	14:55	10/26/07	10:04	10/26/2007 10:19
EPA 365.4	11/21/07		10/30/07	11:50	10/31/2007 14:43
EPA 376.1	10/31/07		10/28/07	12:51	10/28/2007 13:30
EPA 415.1	11/21/07		11/06/07	15:08	11/7/2007 12:48
EPA 6010B	04/21/08		10/30/07	05:17	10/31/2007 18:15
EPA 8270C	10/31/07	12/08/07	10/29/07	11:33	10/30/2007 00:06

Client ID: PEN-SITE14-DUP01-1007 **Lab ID: B709195-03** **Sampled: 10/24/07 00:00** **Received: 10/25/07 09:40**

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	10/26/07	00:00	10/26/07	09:00	10/26/2007 12:30
EPA 300.0	11/21/07		10/26/07	09:00	10/26/2007 12:30
EPA 310.2	11/07/07		10/29/07	15:52	10/30/2007 10:09
EPA 350.1	11/21/07		10/29/07	07:56	10/29/2007 12:18
EPA 351.2	11/21/07		10/30/07	11:50	10/31/2007 11:37
EPA 365.1	10/26/07	00:00	10/26/07	10:04	10/26/2007 10:20
EPA 365.4	11/21/07		10/30/07	11:50	10/31/2007 14:44
EPA 376.1	10/31/07		10/28/07	12:51	10/28/2007 13:30
EPA 415.1	11/21/07		11/06/07	15:08	11/7/2007 12:48
EPA 6010B	04/21/08		10/30/07	05:17	10/31/2007 18:21
EPA 8270C	10/31/07	12/08/07	10/29/07	11:33	10/30/2007 00:23

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Client ID: PEN-SITE14-MW11-1007	Lab ID: B709195-04	Sampled: 10/25/07 09:50	Received: 10/25/07 09:40

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	10/27/07 09:50		10/27/07	07:00	10/27/2007 07:46
EPA 300.0	11/22/07		10/27/07	07:00	10/27/2007 07:46
EPA 310.2	11/08/07		10/29/07	15:52	10/30/2007 10:10
EPA 350.1	11/22/07		10/29/07	07:56	10/29/2007 12:19
EPA 351.2	11/22/07		10/30/07	11:50	10/31/2007 11:38
EPA 365.1	10/27/07 09:50		10/27/07	07:15	10/27/2007 07:55
EPA 365.4	11/22/07		10/30/07	11:50	10/31/2007 14:45
EPA 376.1	11/01/07		10/28/07	12:51	10/28/2007 13:30
EPA 415.1	11/22/07		11/06/07	15:08	11/7/2007 12:48
EPA 6010B	04/22/08		10/30/07	05:17	10/31/2007 18:28
EPA 8270C	11/01/07	12/08/07	10/29/07	11:33	10/30/2007 00:41

Client ID: PEN-SITE14-MW02-1007	Lab ID: B709195-05	Sampled: 10/25/07 13:00	Received: 10/25/07 09:40

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	10/27/07 13:00		10/27/07	07:00	10/27/2007 08:39
EPA 300.0	11/22/07		10/27/07	07:00	10/27/2007 08:39
EPA 310.2	11/08/07		10/29/07	15:52	10/30/2007 10:11
EPA 350.1	11/22/07		10/29/07	07:56	10/29/2007 12:23
EPA 351.2	11/22/07		10/30/07	11:50	10/31/2007 11:42
EPA 365.1	10/27/07 13:00		10/27/07	07:15	10/27/2007 07:56
EPA 365.4	11/22/07		10/30/07	11:50	10/31/2007 14:46
EPA 376.1	11/01/07		10/28/07	12:51	10/28/2007 13:30
EPA 415.1	11/22/07		11/06/07	15:08	11/7/2007 12:48
EPA 6010B	04/22/08		10/30/07	05:17	10/31/2007 18:35
EPA 8270C	11/01/07	12/08/07	10/29/07	11:33	10/30/2007 00:58

Client ID: PEN-SITE14-MW10-1007	Lab ID: B709195-06	Sampled: 10/25/07 11:15	Received: 10/25/07 09:40

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	10/27/07 11:15		10/27/07	07:00	10/27/2007 08:21
EPA 300.0	11/22/07		10/27/07	07:00	10/27/2007 08:21
EPA 310.2	11/08/07		10/29/07	15:52	10/30/2007 10:12
EPA 350.1	11/22/07		10/29/07	07:56	10/29/2007 12:24
EPA 351.2	11/22/07		10/30/07	11:50	10/31/2007 11:43
EPA 365.1	10/27/07 11:15		10/27/07	07:15	10/27/2007 07:57
EPA 365.4	11/22/07		10/30/07	11:50	10/31/2007 14:47
EPA 376.1	11/01/07		10/28/07	12:51	10/28/2007 13:30
EPA 415.1	11/22/07		11/06/07	15:08	11/7/2007 12:48
EPA 6010B	04/22/08		10/30/07	05:17	10/31/2007 19:00
EPA 8270C	11/01/07	12/08/07	10/29/07	11:33	10/30/2007 01:16

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Client ID: PEN-SITE14-MW01-1007	Lab ID: B709195-07	Sampled: 10/25/07 10:00	Received: 10/25/07 09:40

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	10/27/07	10:00	10/27/07	07:00	10/27/2007 08:04
EPA 300.0	11/22/07		10/27/07	07:00	10/27/2007 08:04
EPA 310.2	11/08/07		10/29/07	15:52	10/30/2007 10:13
EPA 350.1	11/22/07		10/29/07	07:56	10/29/2007 12:25
EPA 351.2	11/22/07		10/30/07	11:50	10/31/2007 11:44
EPA 365.1	10/27/07	10:00	10/27/07	07:15	10/27/2007 07:58
EPA 365.4	11/22/07		10/30/07	11:50	10/31/2007 14:51
EPA 376.1	11/01/07		10/28/07	12:51	10/28/2007 13:30
EPA 415.1	11/22/07		11/06/07	15:08	11/7/2007 12:48
EPA 6010B	04/22/08		10/30/07	05:17	10/31/2007 19:06
EPA 8270C	11/01/07	12/08/07	10/29/07	11:33	10/30/2007 01:33

SAMPLE DETECTION SUMMARY

Client ID: PEN-SITE14-MW12-1007-MS/MSD **Lab ID: B709195-01**

Analyte	Results	Flag	PQL	Units	Method	Notes
Chloride	25	V	1.0	mg/L	EPA 300.0	
Nitrate as N	0.32		0.050	mg/L	EPA 300.0	
Nitrite as N	0.046	I	0.050	mg/L	EPA 300.0	
Orthophosphate as P	0.065		0.010	mg/L	EPA 365.1	
Phosphorus	0.072		0.030	mg/L	EPA 365.4	
Sulfate	18		2.0	mg/L	EPA 300.0	
Total Alkalinity	76		10	mg/L	EPA 310.2	
Total Kjeldahl Nitrogen	0.21		0.050	mg/L	EPA 351.2	
Total Organic Carbon	4.3		1.0	mg/L	EPA 415.1	

Client ID: PEN-SITE14-TW04-1007 **Lab ID: B709195-02**

Analyte	Results	Flag	PQL	Units	Method	Notes
1-Methylnaphthalene	0.12		0.10	ug/L	EPA 8270C	
2-Methylnaphthalene	0.11		0.10	ug/L	EPA 8270C	
Acenaphthene	0.04	I	0.10	ug/L	EPA 8270C	
Chloride	5.3	V	1.0	mg/L	EPA 300.0	
Fluorene	0.08	I	0.10	ug/L	EPA 8270C	
Iron	244		50.0	ug/L	EPA 6010B	
Naphthalene	0.14		0.10	ug/L	EPA 8270C	
Nitrate as N	0.21		0.050	mg/L	EPA 300.0	
Nitrite as N	0.036	I	0.050	mg/L	EPA 300.0	
Orthophosphate as P	0.030		0.010	mg/L	EPA 365.1	
Phenanthrene	0.05	I	0.10	ug/L	EPA 8270C	
Phosphorus	0.048		0.030	mg/L	EPA 365.4	
Sulfate	3.6		2.0	mg/L	EPA 300.0	
Total Alkalinity	100		10	mg/L	EPA 310.2	
Total Kjeldahl Nitrogen	0.26		0.050	mg/L	EPA 351.2	
Total Organic Carbon	7.0		1.0	mg/L	EPA 415.1	

Client ID: PEN-SITE14-DUP01-1007 **Lab ID: B709195-03**

Analyte	Results	Flag	PQL	Units	Method	Notes
1-Methylnaphthalene	0.13		0.10	ug/L	EPA 8270C	
2-Methylnaphthalene	0.10		0.10	ug/L	EPA 8270C	
Chloride	5.0	V	1.0	mg/L	EPA 300.0	
Fluorene	0.08	I	0.10	ug/L	EPA 8270C	
Iron	301		50.0	ug/L	EPA 6010B	
Naphthalene	0.09	I	0.10	ug/L	EPA 8270C	
Nitrate as N	0.20		0.050	mg/L	EPA 300.0	
Nitrite as N	0.033	I	0.050	mg/L	EPA 300.0	
Orthophosphate as P	0.027		0.010	mg/L	EPA 365.1	
Phenanthrene	0.09	I	0.10	ug/L	EPA 8270C	
Phosphorus	0.035		0.030	mg/L	EPA 365.4	
Sulfate	3.4		2.0	mg/L	EPA 300.0	
Total Alkalinity	100		10	mg/L	EPA 310.2	
Total Kjeldahl Nitrogen	0.17		0.050	mg/L	EPA 351.2	
Total Organic Carbon	4.9		1.0	mg/L	EPA 415.1	

Client ID: PEN-SITE14-MW11-1007 **Lab ID: B709195-04**

Analyte	Results	Flag	PQL	Units	Method	Notes

Client ID: PEN-SITE14-MW11-1007 **Lab ID: B709195-04**

Analyte	Results	Flag	PQL	Units	Method	Notes
1-Methylnaphthalene	4.1		0.10	ug/L	EPA 8270C	
2-Methylnaphthalene	4.1		0.10	ug/L	EPA 8270C	
Acenaphthene	0.24		0.10	ug/L	EPA 8270C	
Ammonia as N	0.076		0.020	mg/L	EPA 350.1	
Chloride	8.2	V	1.0	mg/L	EPA 300.0	
Fluorene	0.38		0.10	ug/L	EPA 8270C	
Iron	880		50.0	ug/L	EPA 6010B	
Naphthalene	6.5		0.10	ug/L	EPA 8270C	
Nitrate as N	0.53		0.050	mg/L	EPA 300.0	
Nitrite as N	0.047	I	0.050	mg/L	EPA 300.0	
Orthophosphate as P	0.018		0.010	mg/L	EPA 365.1	
Phenanthrene	0.07	I	0.10	ug/L	EPA 8270C	
Phosphorus	0.065		0.030	mg/L	EPA 365.4	
Sulfate	6.4		2.0	mg/L	EPA 300.0	
Total Alkalinity	91		10	mg/L	EPA 310.2	
Total Kjeldahl Nitrogen	0.72		0.050	mg/L	EPA 351.2	
Total Organic Carbon	4.3		1.0	mg/L	EPA 415.1	

Client ID: PEN-SITE14-MW02-1007 **Lab ID: B709195-05**

Analyte	Results	Flag	PQL	Units	Method	Notes
1-Methylnaphthalene	19		0.10	ug/L	EPA 8270C	
2-Methylnaphthalene	12		0.10	ug/L	EPA 8270C	
Acenaphthene	2.6		0.10	ug/L	EPA 8270C	
Ammonia as N	0.30		0.020	mg/L	EPA 350.1	
Anthracene	0.09	I	0.10	ug/L	EPA 8270C	
Chloride	20	V	1.0	mg/L	EPA 300.0	
Fluorene	4.6		0.10	ug/L	EPA 8270C	
Iron	2510		50.0	ug/L	EPA 6010B	
Naphthalene	3.2		0.10	ug/L	EPA 8270C	
Nitrate as N	0.20		0.050	mg/L	EPA 300.0	
Nitrite as N	0.034	I	0.050	mg/L	EPA 300.0	
Orthophosphate as P	0.018		0.010	mg/L	EPA 365.1	
Phenanthrene	2.0		0.10	ug/L	EPA 8270C	
Phosphorus	0.22		0.030	mg/L	EPA 365.4	
Pyrene	0.07	I	0.10	ug/L	EPA 8270C	
Sulfate	12		2.0	mg/L	EPA 300.0	
Sulfide	0.75	I	1.0	mg/L	EPA 376.1	
Total Alkalinity	42		10	mg/L	EPA 310.2	
Total Kjeldahl Nitrogen	0.90		0.050	mg/L	EPA 351.2	
Total Organic Carbon	13		1.0	mg/L	EPA 415.1	

Client ID: PEN-SITE14-MW10-1007 **Lab ID: B709195-06**

Analyte	Results	Flag	PQL	Units	Method	Notes
1-Methylnaphthalene	0.03	I	0.10	ug/L	EPA 8270C	
Ammonia as N	0.15		0.020	mg/L	EPA 350.1	
Chloride	39	V	1.0	mg/L	EPA 300.0	
Iron	1580		50.0	ug/L	EPA 6010B	
Nitrate as N	2.7		0.050	mg/L	EPA 300.0	
Nitrite as N	0.061		0.050	mg/L	EPA 300.0	
Orthophosphate as P	0.013		0.010	mg/L	EPA 365.1	
Phosphorus	0.095		0.030	mg/L	EPA 365.4	

Client ID: PEN-SITE14-MW10-1007		Lab ID: B709195-06				
Analyte	**Results**	**Flag**	**PQL**	**Units**	**Method**	**Notes**
Sulfate	73		2.0	mg/L	EPA 300.0	
Total Alkalinity	27		10	mg/L	EPA 310.2	
Total Kjeldahl Nitrogen	2.0		0.050	mg/L	EPA 351.2	
Total Organic Carbon	37		1.0	mg/L	EPA 415.1	

Client ID: PEN-SITE14-MW01-1007		Lab ID: B709195-07				
Analyte	**Results**	**Flag**	**PQL**	**Units**	**Method**	**Notes**
Chloride	47	V	1.0	mg/L	EPA 300.0	
Iron	600		50.0	ug/L	EPA 6010B	
Nitrate as N	0.87		0.050	mg/L	EPA 300.0	
Nitrite as N	0.050		0.050	mg/L	EPA 300.0	
Orthophosphate as P	0.010		0.010	mg/L	EPA 365.1	
Phosphorus	0.027	I	0.030	mg/L	EPA 365.4	
Sulfate	23		2.0	mg/L	EPA 300.0	
Total Alkalinity	67		10	mg/L	EPA 310.2	
Total Kjeldahl Nitrogen	0.29		0.050	mg/L	EPA 351.2	
Total Organic Carbon	5.1		1.0	mg/L	EPA 415.1	

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ANALYTICAL RESULTS

Description: PEN-SITE14-MW12-1007-MS/MSD
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-01
Sampled: 10/24/07 15:00
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Semivolatile Organic Compounds by GCMS SIM

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1-Methylnaphthalene [90-12-0]	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
2-Methylnaphthalene [91-57-6] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Acenaphthene [83-32-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Acenaphthylene [208-96-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Anthracene [120-12-7] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Benzo(a)anthracene [56-55-3] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Benzo(a)pyrene [50-32-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Benzo(b)fluoranthene [205-99-2] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Benzo(g,h,i)perylene [191-24-2] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Benzo(k)fluoranthene [207-08-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Chrysene [218-01-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Dibenzo(a,h)anthracene [53-70-3] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Fluoranthene [206-44-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Fluorene [86-73-7] *	0.05	U	ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Indeno(1,2,3-cd)pyrene [193-39-5] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Naphthalene [91-20-3] *	0.05	U	ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Phenanthrene [85-01-8] *	0.04	U	ug/L	1	0.04	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	
Pyrene [129-00-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/29/07 23:48	JWJ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
p-Terphenyl	*4.9*	*1*	*5.00*	*98 %*	*34-134*	*7J29002*	*EPA 8270C*	*10/29/07 23:48*	*JWJ*	

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Description: PEN-SITE14-MW12-1007-MS/MSD
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-01
Sampled: 10/24/07 15:00
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Metals (Dissolved) by EPA 6000/7000 Series Methods

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Iron [7439-89-6] *	35.0	U	ug/L	1	35.0	50.0	7J30001	EPA 6010B	10/31/07 02:05	ACV	

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Description: PEN-SITE14-MW12-1007-MS/MSD
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-01
Sampled: 10/24/07 15:00
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Classical Chemistry Parameters

** - ENCO Orlando certified analyte [NELAC E83182]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Ammonia as N [7664-41-7] *	0.008	U	mg/L	1	0.008	0.020	7J29003	EPA 350.1	10/29/07 12:12	KG	
Chloride [16887-00-6] *	**25**	V	mg/L	1	0.05	1.0	7J26006	EPA 300.0	10/26/07 11:20	RSA	
Nitrate as N [14797-55-8] *	**0.32**		mg/L	1	0.008	0.050	7J26006	EPA 300.0	10/26/07 11:20	RSA	
Nitrite as N [14797-65-0] *	**0.046**	I	mg/L	1	0.007	0.050	7J26006	EPA 300.0	10/26/07 11:20	RSA	
Orthophosphate as P [1426-54-42] *	**0.065**		mg/L	1	0.0015	0.010	7J26004	EPA 365.1	10/26/07 10:16	NS	
Phosphorus [7723-14-0] *	**0.072**		mg/L	1	0.020	0.030	7J30004	EPA 365.4	10/31/07 14:38	NS	
Sulfate [14808-79-8] *	**18**		mg/L	1	0.03	2.0	7J26006	EPA 300.0	10/26/07 11:20	RSA	
Sulfide [18496-25-8] *	0.45	U	mg/L	1	0.45	1.0	7J28004	EPA 376.1	10/28/07 13:30	AH	
Total Alkalinity [NA] *	**76**		mg/L	1	2.4	10	7J29023	EPA 310.2	10/30/07 10:01	KG	
Total Kjeldahl Nitrogen [NA] *	**0.21**		mg/L	1	0.043	0.050	7J30003	EPA 351.2	10/31/07 11:32	NS	
Total Organic Carbon [NA] *	**4.3**		mg/L	1	0.30	1.0	7K06031	EPA 415.1	11/07/07 12:48	JFI	

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Description: PEN-SITE14-TW04-1007 **Lab Sample ID:** B709195-02 **Received:** 10/25/07 09:40
Matrix: Ground Water **Sampled:** 10/24/07 14:55 **Work Order:** B709195
Project: Nas Pensacola CTO 0071 **Sampled By:** Curtis Odom

Semivolatile Organic Compounds by GCMS SIM

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1-Methylnaphthalene [90-12-0]	**0.12**		ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
2-Methylnaphthalene [91-57-6] *	**0.11**		ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Acenaphthene [83-32-9] *	**0.04**	I	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Acenaphthylene [208-96-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Anthracene [120-12-7] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Benzo(a)anthracene [56-55-3] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Benzo(a)pyrene [50-32-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Benzo(b)fluoranthene [205-99-2] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Benzo(g,h,i)perylene [191-24-2] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Benzo(k)fluoranthene [207-08-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Chrysene [218-01-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Dibenzo(a,h)anthracene [53-70-3] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Fluoranthene [206-44-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Fluorene [86-73-7] *	**0.08**	I	ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Indeno(1,2,3-cd)pyrene [193-39-5] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Naphthalene [91-20-3] *	**0.14**		ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Phenanthrene [85-01-8] *	**0.05**	I	ug/L	1	0.04	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	
Pyrene [129-00-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:06	JWJ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
p-Terphenyl	*4.7*	*1*	*5.00*	*93 %*	*34-134*	*7J29002*	*EPA 8270C*	*10/30/07 00:06*	*JWJ*	

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Description: PEN-SITE14-TW04-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-02
Sampled: 10/24/07 14:55
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Metals (Dissolved) by EPA 6000/7000 Series Methods

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Iron [7439-89-6] *	**244**		ug/L	1	35.0	50.0	7J30001	EPA 6010B	10/31/07 18:15	ACV	

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Description: PEN-SITE14-TW04-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-02
Sampled: 10/24/07 14:55
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Classical Chemistry Parameters

** - ENCO Orlando certified analyte [NELAC E83182]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Ammonia as N [7664-41-7] *	0.008	U	mg/L	1	0.008	0.020	7J29003	EPA 350.1	10/29/07 12:17	KG	
Chloride [16887-00-6] *	**5.3**	V	mg/L	1	0.05	1.0	7J26006	EPA 300.0	10/26/07 12:13	RSA	
Nitrate as N [14797-55-8] *	**0.21**		mg/L	1	0.008	0.050	7J26006	EPA 300.0	10/26/07 12:13	RSA	
Nitrite as N [14797-65-0] *	**0.036**	I	mg/L	1	0.007	0.050	7J26006	EPA 300.0	10/26/07 12:13	RSA	
Orthophosphate as P [1426-54-42] *	**0.030**		mg/L	1	0.0015	0.010	7J26004	EPA 365.1	10/26/07 10:19	NS	
Phosphorus [7723-14-0] *	**0.048**		mg/L	1	0.020	0.030	7J30004	EPA 365.4	10/31/07 14:43	NS	
Sulfate [14808-79-8] *	**3.6**		mg/L	1	0.03	2.0	7J26006	EPA 300.0	10/26/07 12:13	RSA	
Sulfide [18496-25-8] *	0.45	U	mg/L	1	0.45	1.0	7J28004	EPA 376.1	10/28/07 13:30	AH	
Total Alkalinity [NA] *	**100**		mg/L	1	2.4	10	7J29023	EPA 310.2	10/30/07 10:08	KG	
Total Kjeldahl Nitrogen [NA] *	**0.26**		mg/L	1	0.043	0.050	7J30003	EPA 351.2	10/31/07 11:36	NS	
Total Organic Carbon [NA] *	**7.0**		mg/L	1	0.30	1.0	7K06031	EPA 415.1	11/07/07 12:48	JFI	

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Description: PEN-SITE14-DUP01-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-03
Sampled: 10/24/07 00:00
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Semivolatile Organic Compounds by GCMS SIM

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1-Methylnaphthalene [90-12-0]	**0.13**		ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
2-Methylnaphthalene [91-57-6] *	**0.10**		ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Acenaphthene [83-32-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Acenaphthylene [208-96-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Anthracene [120-12-7] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Benzo(a)anthracene [56-55-3] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Benzo(a)pyrene [50-32-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Benzo(b)fluoranthene [205-99-2] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Benzo(g,h,i)perylene [191-24-2] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Benzo(k)fluoranthene [207-08-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Chrysene [218-01-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Dibenzo(a,h)anthracene [53-70-3] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Fluoranthene [206-44-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Fluorene [86-73-7] *	**0.08**	I	ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Indeno(1,2,3-cd)pyrene [193-39-5] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Naphthalene [91-20-3] *	**0.09**	I	ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Phenanthrene [85-01-8] *	**0.09**	I	ug/L	1	0.04	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	
Pyrene [129-00-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:23	JWJ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
p-Terphenyl	*4.1*	*1*	*5.00*	*82 %*	*34-134*	*7J29002*	*EPA 8270C*	*10/30/07 00:23*	*JWJ*	

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Description:	PEN-SITE14-DUP01-1007	**Lab Sample ID:**	B709195-03	**Received:**	10/25/07 09:40
Matrix:	Ground Water	**Sampled:**	10/24/07 00:00	**Work Order:**	B709195
Project:	Nas Pensacola CTO 0071	**Sampled By:**	Curtis Odom		

Metals (Dissolved) by EPA 6000/7000 Series Methods

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Iron [7439-89-6] *	**301**		ug/L	1	35.0	50.0	7J30001	EPA 6010B	10/31/07 18:21	ACV	

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Description: PEN-SITE14-DUP01-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-03
Sampled: 10/24/07 00:00
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Classical Chemistry Parameters

** - ENCO Orlando certified analyte [NELAC E83182]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Ammonia as N [7664-41-7] *	0.008	U	mg/L	1	0.008	0.020	7J29003	EPA 350.1	10/29/07 12:18	KG	
Chloride [16887-00-6] *	**5.0**	V	mg/L	1	0.05	1.0	7J26006	EPA 300.0	10/26/07 12:30	RSA	
Nitrate as N [14797-55-8] *	**0.20**		mg/L	1	0.008	0.050	7J26006	EPA 300.0	10/26/07 12:30	RSA	
Nitrite as N [14797-65-0] *	**0.033**	I	mg/L	1	0.007	0.050	7J26006	EPA 300.0	10/26/07 12:30	RSA	
Orthophosphate as P [1426-54-42] *	**0.027**		mg/L	1	0.0015	0.010	7J26004	EPA 365.1	10/26/07 10:20	NS	
Phosphorus [7723-14-0] *	**0.035**		mg/L	1	0.020	0.030	7J30004	EPA 365.4	10/31/07 14:44	NS	
Sulfate [14808-79-8] *	**3.4**		mg/L	1	0.03	2.0	7J26006	EPA 300.0	10/26/07 12:30	RSA	
Sulfide [18496-25-8] *	0.45	U	mg/L	1	0.45	1.0	7J28004	EPA 376.1	10/28/07 13:30	AH	
Total Alkalinity [NA] *	**100**		mg/L	1	2.4	10	7J29023	EPA 310.2	10/30/07 10:09	KG	
Total Kjeldahl Nitrogen [NA] *	**0.17**		mg/L	1	0.043	0.050	7J30003	EPA 351.2	10/31/07 11:37	NS	
Total Organic Carbon [NA] *	**4.9**		mg/L	1	0.30	1.0	7K06031	EPA 415.1	11/07/07 12:48	JFI	

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Description: PEN-SITE14-MW11-1007 **Lab Sample ID:** B709195-04 **Received:** 10/25/07 09:40
Matrix: Ground Water **Sampled:** 10/25/07 09:50 **Work Order:** B709195
Project: Nas Pensacola CTO 0071 **Sampled By:** Curtis Odom

Semivolatile Organic Compounds by GCMS SIM

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1-Methylnaphthalene [90-12-0]	**4.1**		ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
2-Methylnaphthalene [91-57-6] *	**4.1**		ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Acenaphthene [83-32-9] *	**0.24**		ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Acenaphthylene [208-96-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Anthracene [120-12-7] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Benzo(a)anthracene [56-55-3] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Benzo(a)pyrene [50-32-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Benzo(b)fluoranthene [205-99-2] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Benzo(g,h,i)perylene [191-24-2] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Benzo(k)fluoranthene [207-08-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Chrysene [218-01-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Dibenzo(a,h)anthracene [53-70-3] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Fluoranthene [206-44-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Fluorene [86-73-7] *	**0.38**		ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Indeno(1,2,3-cd)pyrene [193-39-5] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Naphthalene [91-20-3] *	**6.5**		ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Phenanthrene [85-01-8] *	**0.07**	I	ug/L	1	0.04	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	
Pyrene [129-00-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:41	JWJ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
p-Terphenyl	*4.9*	*1*	*5.00*	*97 %*	*34-134*	*7J29002*	*EPA 8270C*	*10/30/07 00:41*	*JWJ*	

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Description:	PEN-SITE14-MW11-1007	**Lab Sample ID:**	B709195-04	**Received:**	10/25/07 09:40
Matrix:	Ground Water	**Sampled:**	10/25/07 09:50	**Work Order:**	B709195
Project:	Nas Pensacola CTO 0071	**Sampled By:**	Curtis Odom		

Metals (Dissolved) by EPA 6000/7000 Series Methods

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Iron [7439-89-6] *	**880**		ug/L	1	35.0	50.0	7J30001	EPA 6010B	10/31/07 18:28	ACV	

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Description: PEN-SITE14-MW11-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-04
Sampled: 10/25/07 09:50
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Classical Chemistry Parameters

** - ENCO Orlando certified analyte [NELAC E83182]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Ammonia as N [7664-41-7] *	**0.076**		mg/L	1	0.008	0.020	7J29003	EPA 350.1	10/29/07 12:19	KG	
Chloride [16887-00-6] *	**8.2**	V	mg/L	1	0.05	1.0	7J27001	EPA 300.0	10/27/07 07:46	RSA	
Nitrate as N [14797-55-8] *	**0.53**		mg/L	1	0.008	0.050	7J27001	EPA 300.0	10/27/07 07:46	RSA	
Nitrite as N [14797-65-0] *	**0.047**	I	mg/L	1	0.007	0.050	7J27001	EPA 300.0	10/27/07 07:46	RSA	
Orthophosphate as P [1426-54-42] *	**0.018**		mg/L	1	0.0015	0.010	7J26004	EPA 365.1	10/27/07 07:55	NS	
Phosphorus [7723-14-0] *	**0.065**		mg/L	1	0.020	0.030	7J30004	EPA 365.4	10/31/07 14:45	NS	
Sulfate [14808-79-8] *	**6.4**		mg/L	1	0.03	2.0	7J27001	EPA 300.0	10/27/07 07:46	RSA	
Sulfide [18496-25-8] *	0.45	U	mg/L	1	0.45	1.0	7J28004	EPA 376.1	10/28/07 13:30	AH	
Total Alkalinity [NA] *	**91**		mg/L	1	2.4	10	7J29023	EPA 310.2	10/30/07 10:10	KG	
Total Kjeldahl Nitrogen [NA] *	**0.72**		mg/L	1	0.043	0.050	7J30003	EPA 351.2	10/31/07 11:38	NS	
Total Organic Carbon [NA] *	**4.3**		mg/L	1	0.30	1.0	7K06031	EPA 415.1	11/07/07 12:48	JFI	

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Description: PEN-SITE14-MW02-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-05
Sampled: 10/25/07 13:00
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Semivolatile Organic Compounds by GCMS SIM

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1-Methylnaphthalene [90-12-0]	**19**		ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
2-Methylnaphthalene [91-57-6] *	**12**		ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Acenaphthene [83-32-9] *	**2.6**		ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Acenaphthylene [208-96-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Anthracene [120-12-7] *	**0.09**	I	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Benzo(a)anthracene [56-55-3] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Benzo(a)pyrene [50-32-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Benzo(b)fluoranthene [205-99-2] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Benzo(g,h,i)perylene [191-24-2] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Benzo(k)fluoranthene [207-08-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Chrysene [218-01-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Dibenzo(a,h)anthracene [53-70-3] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Fluoranthene [206-44-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Fluorene [86-73-7] *	**4.6**		ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Indeno(1,2,3-cd)pyrene [193-39-5] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Naphthalene [91-20-3] *	**3.2**		ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Phenanthrene [85-01-8] *	**2.0**		ug/L	1	0.04	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	
Pyrene [129-00-0] *	**0.07**	I	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 00:58	JWJ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
p-Terphenyl	*4.2*	*1*	*5.00*	*85 %*	*34-134*	*7J29002*	*EPA 8270C*	*10/30/07 00:58*	*JWJ*	

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Description: PEN-SITE14-MW02-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-05
Sampled: 10/25/07 13:00
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Metals (Dissolved) by EPA 6000/7000 Series Methods

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Iron [7439-89-6] *	**2510**		ug/L	1	35.0	50.0	7J30001	EPA 6010B	10/31/07 18:35	ACV	

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Description: PEN-SITE14-MW02-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-05
Sampled: 10/25/07 13:00
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Classical Chemistry Parameters

** - ENCO Orlando certified analyte [NELAC E83182]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Ammonia as N [7664-41-7] *	**0.30**		mg/L	1	0.008	0.020	7J29003	EPA 350.1	10/29/07 12:23	KG	
Chloride [16887-00-6] *	**20**	V	mg/L	1	0.05	1.0	7J27001	EPA 300.0	10/27/07 08:39	RSA	
Nitrate as N [14797-55-8] *	**0.20**		mg/L	1	0.008	0.050	7J27001	EPA 300.0	10/27/07 08:39	RSA	
Nitrite as N [14797-65-0] *	**0.034**	I	mg/L	1	0.007	0.050	7J27001	EPA 300.0	10/27/07 08:39	RSA	
Orthophosphate as P [1426-54-42] *	**0.018**		mg/L	1	0.0015	0.010	7J26004	EPA 365.1	10/27/07 07:56	NS	
Phosphorus [7723-14-0] *	**0.22**		mg/L	1	0.020	0.030	7J30004	EPA 365.4	10/31/07 14:46	NS	
Sulfate [14808-79-8] *	**12**		mg/L	1	0.03	2.0	7J27001	EPA 300.0	10/27/07 08:39	RSA	
Sulfide [18496-25-8] *	**0.75**	I	mg/L	1	0.45	1.0	7J28004	EPA 376.1	10/28/07 13:30	AH	
Total Alkalinity [NA] *	**42**		mg/L	1	2.4	10	7J29023	EPA 310.2	10/30/07 10:11	KG	
Total Kjeldahl Nitrogen [NA] *	**0.90**		mg/L	1	0.043	0.050	7J30003	EPA 351.2	10/31/07 11:42	NS	
Total Organic Carbon [NA] *	**13**		mg/L	1	0.30	1.0	7K06031	EPA 415.1	11/07/07 12:48	JFI	

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Description: PEN-SITE14-MW10-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-06
Sampled: 10/25/07 11:15
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Semivolatile Organic Compounds by GCMS SIM

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1-Methylnaphthalene [90-12-0]	**0.03**	I	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
2-Methylnaphthalene [91-57-6] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Acenaphthene [83-32-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Acenaphthylene [208-96-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Anthracene [120-12-7] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Benzo(a)anthracene [56-55-3] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Benzo(a)pyrene [50-32-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Benzo(b)fluoranthene [205-99-2] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Benzo(g,h,i)perylene [191-24-2] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Benzo(k)fluoranthene [207-08-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Chrysene [218-01-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Dibenzo(a,h)anthracene [53-70-3] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Fluoranthene [206-44-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Fluorene [86-73-7] *	0.05	U	ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Indeno(1,2,3-cd)pyrene [193-39-5] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Naphthalene [91-20-3] *	0.05	U	ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Phenanthrene [85-01-8] *	0.04	U	ug/L	1	0.04	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	
Pyrene [129-00-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 01:16	JWJ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
p-Terphenyl	*4.8*	*1*	*5.00*	*95 %*	*34-134*	*7J29002*	*EPA 8270C*	*10/30/07 01:16*	*JWJ*	

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Description: PEN-SITE14-MW10-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-06
Sampled: 10/25/07 11:15
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Metals (Dissolved) by EPA 6000/7000 Series Methods

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Iron [7439-89-6] *	**1580**		ug/L	1	35.0	50.0	7J30001	EPA 6010B	10/31/07 19:00	ACV	

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Description: PEN-SITE14-MW10-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-06
Sampled: 10/25/07 11:15
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Classical Chemistry Parameters

** - ENCO Orlando certified analyte [NELAC E83182]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Ammonia as N [7664-41-7] *	**0.15**		mg/L	1	0.008	0.020	7J29003	EPA 350.1	10/29/07 12:24	KG	
Chloride [16887-00-6] *	**39**	V	mg/L	1	0.05	1.0	7J27001	EPA 300.0	10/27/07 08:21	RSA	
Nitrate as N [14797-55-8] *	**2.7**		mg/L	1	0.008	0.050	7J27001	EPA 300.0	10/27/07 08:21	RSA	
Nitrite as N [14797-65-0] *	**0.061**		mg/L	1	0.007	0.050	7J27001	EPA 300.0	10/27/07 08:21	RSA	
Orthophosphate as P [1426-54-42] *	**0.013**		mg/L	1	0.0015	0.010	7J26004	EPA 365.1	10/27/07 07:57	NS	
Phosphorus [7723-14-0] *	**0.095**		mg/L	1	0.020	0.030	7J30004	EPA 365.4	10/31/07 14:47	NS	
Sulfate [14808-79-8] *	**73**		mg/L	1	0.03	2.0	7J27001	EPA 300.0	10/27/07 08:21	RSA	
Sulfide [18496-25-8] *	0.45	U	mg/L	1	0.45	1.0	7J28004	EPA 376.1	10/28/07 13:30	AH	
Total Alkalinity [NA] *	**27**		mg/L	1	2.4	10	7J29023	EPA 310.2	10/30/07 10:12	KG	
Total Kjeldahl Nitrogen [NA] *	**2.0**		mg/L	1	0.043	0.050	7J30003	EPA 351.2	10/31/07 11:43	NS	
Total Organic Carbon [NA] *	**37**		mg/L	1	0.30	1.0	7K06031	EPA 415.1	11/07/07 12:48	JFI	

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Description: PEN-SITE14-MW01-1007 **Lab Sample ID:** B709195-07 **Received:** 10/25/07 09:40
Matrix: Ground Water **Sampled:** 10/25/07 10:00 **Work Order:** B709195
Project: Nas Pensacola CTO 0071 **Sampled By:** Curtis Odom

Semivolatile Organic Compounds by GCMS SIM

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1-Methylnaphthalene [90-12-0]	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
2-Methylnaphthalene [91-57-6] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Acenaphthene [83-32-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Acenaphthylene [208-96-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Anthracene [120-12-7] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Benzo(a)anthracene [56-55-3] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Benzo(a)pyrene [50-32-8] *	0.01	U	ug/L	1	0.01	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Benzo(b)fluoranthene [205-99-2] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Benzo(g,h,i)perylene [191-24-2] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Benzo(k)fluoranthene [207-08-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Chrysene [218-01-9] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Dibenzo(a,h)anthracene [53-70-3] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Fluoranthene [206-44-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Fluorene [86-73-7] *	0.05	U	ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Indeno(1,2,3-cd)pyrene [193-39-5] *	0.02	U	ug/L	1	0.02	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Naphthalene [91-20-3] *	0.05	U	ug/L	1	0.05	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Phenanthrene [85-01-8] *	0.04	U	ug/L	1	0.04	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	
Pyrene [129-00-0] *	0.03	U	ug/L	1	0.03	0.10	7J29002	EPA 8270C	10/30/07 01:33	JWJ	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
p-Terphenyl	*4.2*	*1*	*5.00*	*84 %*	*34-134*	*7J29002*	*EPA 8270C*	*10/30/07 01:33*	*JWJ*	

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Description: PEN-SITE14-MW01-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-07
Sampled: 10/25/07 10:00
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Metals (Dissolved) by EPA 6000/7000 Series Methods

** - ENCO Jacksonville certified analyte [NELAC E82277]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Iron [7439-89-6] *	**600**		ug/L	1	35.0	50.0	7J30001	EPA 6010B	10/31/07 19:06	ACV	

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Description: PEN-SITE14-MW01-1007
Matrix: Ground Water
Project: Nas Pensacola CTO 0071

Lab Sample ID: B709195-07
Sampled: 10/25/07 10:00
Sampled By: Curtis Odom

Received: 10/25/07 09:40
Work Order: B709195

Classical Chemistry Parameters

** - ENCO Orlando certified analyte [NELAC E83182]*

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Ammonia as N [7664-41-7] *	0.008	U	mg/L	1	0.008	0.020	7J29003	EPA 350.1	10/29/07 12:25	KG	
Chloride [16887-00-6] *	**47**	V	mg/L	1	0.05	1.0	7J27001	EPA 300.0	10/27/07 08:04	RSA	
Nitrate as N [14797-55-8] *	**0.87**		mg/L	1	0.008	0.050	7J27001	EPA 300.0	10/27/07 08:04	RSA	
Nitrite as N [14797-65-0] *	**0.050**		mg/L	1	0.007	0.050	7J27001	EPA 300.0	10/27/07 08:04	RSA	
Orthophosphate as P [1426-54-42] *	**0.010**		mg/L	1	0.0015	0.010	7J26004	EPA 365.1	10/27/07 07:58	NS	
Phosphorus [7723-14-0] *	**0.027**	I	mg/L	1	0.020	0.030	7J30004	EPA 365.4	10/31/07 14:51	NS	
Sulfate [14808-79-8] *	**23**		mg/L	1	0.03	2.0	7J27001	EPA 300.0	10/27/07 08:04	RSA	
Sulfide [18496-25-8] *	0.45	U	mg/L	1	0.45	1.0	7J28004	EPA 376.1	10/28/07 13:30	AH	
Total Alkalinity [NA] *	**67**		mg/L	1	2.4	10	7J29023	EPA 310.2	10/30/07 10:13	KG	
Total Kjeldahl Nitrogen [NA] *	**0.29**		mg/L	1	0.043	0.050	7J30003	EPA 351.2	10/31/07 11:44	NS	
Total Organic Carbon [NA] *	**5.1**		mg/L	1	0.30	1.0	7K06031	EPA 415.1	11/07/07 12:48	JFI	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL

Semivolatile Organic Compounds by GCMS SIM - Quality Control

Batch 7J29002 - EPA 3510C_MS

Blank (7J29002-BLK1) Prepared: 10/29/2007 11:33 Analyzed: 10/29/2007 22:38

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Naphthalene	0.05	U	0.10	ug/L							
2-Methylnaphthalene	0.02	U	0.10	ug/L							
1-Methylnaphthalene	0.02	U	0.10	ug/L							
Acenaphthylene	0.01	U	0.10	ug/L							
Acenaphthene	0.02	U	0.10	ug/L							
Fluorene	0.05	U	0.10	ug/L							
Phenanthrene	0.04	U	0.10	ug/L							
Anthracene	0.02	U	0.10	ug/L							
Fluoranthene	0.03	U	0.10	ug/L							
Pyrene	0.03	U	0.10	ug/L							
Benzo(a)anthracene	0.01	U	0.10	ug/L							
Chrysene	0.02	U	0.10	ug/L							
Benzo(b)fluoranthene	0.02	U	0.10	ug/L							
Benzo(k)fluoranthene	0.02	U	0.10	ug/L							
Benzo(a)pyrene	0.01	U	0.10	ug/L							
Indeno(1,2,3-cd)pyrene	0.02	U	0.10	ug/L							
Dibenzo(a,h)anthracene	0.02	U	0.10	ug/L							
Benzo(g,h,i)perylene	0.03	U	0.10	ug/L							
Surrogate: p-Terphenyl	*5.4*			*ug/L*	*5.00*		*108*	*34-134*			

LCS (7J29002-BS1) Prepared: 10/29/2007 11:33 Analyzed: 10/29/2007 22:56

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Naphthalene	1.6		0.10	ug/L	2.00		80	40-100			
2-Methylnaphthalene	1.6		0.10	ug/L	2.00		82	45-105			
1-Methylnaphthalene	1.6		0.10	ug/L	2.00		79	30-99			
Acenaphthylene	1.6		0.10	ug/L	2.00		82	50-105			
Acenaphthene	1.7		0.10	ug/L	2.00		87	45-110			
Fluorene	1.8		0.10	ug/L	2.00		91	50-110			
Phenanthrene	1.9		0.10	ug/L	2.00		95	50-115			
Anthracene	1.9		0.10	ug/L	2.00		96	55-110			
Fluoranthene	2.2		0.10	ug/L	2.00		108	55-115			
Pyrene	2.1		0.10	ug/L	2.00		104	50-130			
Benzo(a)anthracene	1.9		0.10	ug/L	2.00		93	55-110			
Chrysene	2.0		0.10	ug/L	2.00		100	55-110			
Benzo(b)fluoranthene	1.9		0.10	ug/L	2.00		96	45-115			
Benzo(k)fluoranthene	2.1		0.10	ug/L	2.00		103	45-125			
Benzo(a)pyrene	1.8		0.10	ug/L	2.00		88	55-110			
Indeno(1,2,3-cd)pyrene	1.7		0.10	ug/L	2.00		86	45-125			
Dibenzo(a,h)anthracene	1.6		0.10	ug/L	2.00		78	40-125			
Benzo(g,h,i)perylene	2.0		0.10	ug/L	2.00		102	40-125			

Matrix Spike (7J29002-MS1) Prepared: 10/29/2007 11:33 Analyzed: 10/29/2007 23:13

Source: B709195-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Naphthalene	1.6		0.10	ug/L	2.00	0.05 U	79	40-100			
2-Methylnaphthalene	1.6		0.10	ug/L	2.00	0.02 U	80	45-105			

QUALITY CONTROL

Semivolatile Organic Compounds by GCMS SIM - Quality Control

Batch 7J29002 - EPA 3510C_MS

Matrix Spike (7J29002-MS1) Continued Prepared: 10/29/2007 11:33 Analyzed: 10/29/2007 23:13

Source: B709195-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1-Methylnaphthalene	1.6		0.10	ug/L	2.00	0.02 U	78	30-96			
Acenaphthylene	1.6		0.10	ug/L	2.00	0.01 U	81	50-105			
Acenaphthene	1.7		0.10	ug/L	2.00	0.02 U	85	45-110			
Fluorene	1.8		0.10	ug/L	2.00	0.05 U	91	50-110			
Phenanthrene	1.9		0.10	ug/L	2.00	0.04 U	94	50-115			
Anthracene	1.9		0.10	ug/L	2.00	0.02 U	95	55-110			
Fluoranthene	2.1		0.10	ug/L	2.00	0.03 U	106	55-115			
Pyrene	2.1		0.10	ug/L	2.00	0.03 U	103	50-130			
Benzo(a)anthracene	1.8		0.10	ug/L	2.00	0.01 U	91	55-110			
Chrysene	2.0		0.10	ug/L	2.00	0.02 U	98	55-110			
Benzo(b)fluoranthene	1.9		0.10	ug/L	2.00	0.02 U	96	45-115			
Benzo(k)fluoranthene	1.9		0.10	ug/L	2.00	0.02 U	96	45-125			
Benzo(a)pyrene	1.7		0.10	ug/L	2.00	0.01 U	86	55-110			
Indeno(1,2,3-cd)pyrene	1.8		0.10	ug/L	2.00	0.02 U	88	45-125			
Dibenzo(a,h)anthracene	1.6		0.10	ug/L	2.00	0.02 U	80	40-125			
Benzo(g,h,i)perylene	2.0		0.10	ug/L	2.00	0.03 U	102	40-125			

Matrix Spike Dup (7J29002-MSD1) Prepared: 10/29/2007 11:33 Analyzed: 10/29/2007 23:31

Source: B709195-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Naphthalene	1.5		0.10	ug/L	2.00	0.05 U	77	40-100	3	27	
2-Methylnaphthalene	1.6		0.10	ug/L	2.00	0.02 U	79	45-105	2	33	
1-Methylnaphthalene	1.5		0.10	ug/L	2.00	0.02 U	75	30-96	4	29	
Acenaphthylene	1.6		0.10	ug/L	2.00	0.01 U	79	50-105	2	24	
Acenaphthene	1.7		0.10	ug/L	2.00	0.02 U	83	45-110	2	23	
Fluorene	1.8		0.10	ug/L	2.00	0.05 U	88	50-110	3	22	
Phenanthrene	1.8		0.10	ug/L	2.00	0.04 U	91	50-115	3	22	
Anthracene	1.8		0.10	ug/L	2.00	0.02 U	92	55-110	3	20	
Fluoranthene	2.1		0.10	ug/L	2.00	0.03 U	104	55-115	3	20	
Pyrene	2.0		0.10	ug/L	2.00	0.03 U	100	50-130	3	22	
Benzo(a)anthracene	1.8		0.10	ug/L	2.00	0.01 U	90	55-110	2	22	
Chrysene	1.9		0.10	ug/L	2.00	0.02 U	97	55-110	1	21	
Benzo(b)fluoranthene	1.9		0.10	ug/L	2.00	0.02 U	93	45-115	3	23	
Benzo(k)fluoranthene	1.9		0.10	ug/L	2.00	0.02 U	96	45-125	0	22	
Benzo(a)pyrene	1.7		0.10	ug/L	2.00	0.01 U	84	55-110	2	23	
Indeno(1,2,3-cd)pyrene	1.7		0.10	ug/L	2.00	0.02 U	86	45-125	2	22	
Dibenzo(a,h)anthracene	1.6		0.10	ug/L	2.00	0.02 U	78	40-125	2	32	
Benzo(g,h,i)perylene	2.0		0.10	ug/L	2.00	0.03 U	101	40-125	1	27	

Metals (Dissolved) by EPA 6000/7000 Series Methods - Quality Control

Batch 7J30001 - EPA 3005A

Blank (7J30001-BLK1) Prepared: 10/30/2007 05:17 Analyzed: 10/31/2007 01:20

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes