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NSA PANAMA CITY
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FINAL TECHNICAL MEMORANUM FOR SOIL CONTAMINATION DELINEATION AT SITE 325

NSA PANAMA CITY FL

9/1/2013

TETRA TECH

FINAL TECHNICAL MEMORANDUM
SITE 325
NAVAL SUPPORT ACTIVITY PANAMA CITY
PANAMA CITY, FLORIDA
SEPTEMBER 2013

1.0 SITE BACKGROUND

Site 325 is located in an intensely developed area at the eastern side of Naval Support Activity (NSA) Panama City (Figure 1) just south of the helicopter landing pad located in Panama City Beach, Florida (Figure 2). Three 20,000 gallon fiberglass underground storage tanks (USTs) were installed in 1976 and one 300 gallon UST was installed in 1984; all tanks were used for the storage of JP-5 jet fuel. In 1989, four compliance wells were installed around the USTs as part of the Navy's release Detection Program and petroleum contaminated soil was detected during the installation. A leak was discovered in the underground pipelines associated with UST 2 (the middle UST). Subsequently, the tanks were removed. Currently, the site includes a large asphalt/concrete paved parking lot surrounded by office, storage buildings, warehouse buildings, and three above ground storage tanks that replaced the USTs.

1.1 SUMMARY OF PREVIOUS INVESTIGATIONS

Previous investigations at Site 325 are summarized below.

- A Contamination Assessment (CA) was conducted from 1992 to 1994 by ABB Environmental Services, Inc. (ABB-ES). In 1992, three monitoring wells were installed and groundwater samples were collected from all seven (four compliance and three contaminant plume monitoring) wells installed at Site 325. Detected concentrations of benzene and total naphthalene exceeded their respective Groundwater Cleanup Target Level (GCTL) in several groundwater samples; the Florida Department of Environmental Protection (FDEP) requested the monitoring wells be re-sampled in March 1993. Analytical results from the 1993 sampling event suggested that a recent release or leak had occurred. Tightness tests were conducted at the UST system and it was discovered that piping associated with UST 2 was leaking. The tank was abandoned and replaced and free product was removed as part of the Initial Remedial Action (IRA). ABB-ES submitted a Contamination Assessment Report (CAR) on June 1, 1994. As part of the CAR requirements a potable well survey was conducted and it was determined that contamination of public supply wells at the facility was not a concern. In July 1994, ABB-ES installed three free product recovery wells after 14 soil borings were advanced at the site to locate the area of greatest free product thickness.

- In July and August of 1995, the USTs and associated piping were removed per the IRA. During the excavation, 83 soil samples were screened with an organic vapor analyzer (OVA); excessively contaminated soil (total hydrocarbon readings >50 parts per million) were removed

(approximately 490 cubic yards) and replaced with clean fill material. Only the contaminated soil associated with the tanks and piping was excavated; therefore, some contaminated soil remained on site. An attempt to remove all free product during the excavation was conducted. The groundwater surface was vacuumed for 3 hours, but the amount of free product removed was not measureable.

- In January 1996, ABB-ES submitted a CAR based on additional contamination assessment work and ABB-ES recommended an IRA.

- In May of 1996, ABB-ES submitted a Remedial Action Plan (RAP) identifying the following: contaminants of concern (volatile organic aromatics [VOAs], polycyclic aromatic hydrocarbons [PAHs], Total Recoverable Petroleum Hydrocarbon [TRPH], ethylene dibromide and lead), the extent of contamination (areas with free product, soil, and groundwater contamination), exposure pathways, limitations to cleanup, and remedial treatment options (source abatement through free product monitoring and recovery and/or soil vapor extraction with groundwater monitoring).

- In accordance with the RAP, groundwater was monitored quarterly; during that time the contract changed from Ensafe to CH2MHill in 2002.

- In 2002, CH2MHill performed baseline sampling events for soil and groundwater and replaced the system in October 2002. The system startup and monitoring occurred until May 2004.

- In July 2004, the construction completion report for the Soil Vapor Extraction (SVE) system and the Aquifer Air Sparging System (AAS) was submitted and included a summary of the Vapor Extraction (VE) system that was installed in 1997 and completed in 1998. The system operated bimonthly through December 2001.

- Quarterly operations and maintenance and groundwater sampling was conducted from 2004 through 2006. During this time, detected concentrations of benzene, toluene, ethylbenzene, xylenes (BTEX) and PAHs remained below method detection limits (MDLs) or their respective GCTLs. With the exception of the groundwater sample collected from monitoring well MW-23 in September 2005, TRPH concentrations remained below the GCTL of 5 milligrams per liter (mg/L). The location of MW-23, other wells and soil borings are shown on Figure 3.

- In December 2006, the environmental contractor, the Navy, and FDEP agreed to shut down the AAS/SVE system. A site-wide groundwater sampling event was conducted during the second quarter of 2007 and detected concentrations of BTEX, PAHs, and TRPH were below their respective MDLs or GCTLs. Quarterly groundwater monitoring continued through 2007 and BTEX, PAHs, and TRPH concentrations remained below their respective cleanup target

levels (CTLs) for three quarters of groundwater sampling. During the 4th Quarter 2007 sampling event, TRPH was detected above its CTL in groundwater samples collected from monitoring wells MW-8 and MW-23; concentrations remained below the CTL in groundwater samples collected from the remaining monitoring wells.

- During the 4th Quarter, Year 2007, soil sampling was performed at the site using direct push technology (DPT) to collect soil samples in areas that have historically been impacted by petroleum hydrocarbons. Results from the soil sampling conducted in November 2007, indicated that BTEX and PAH concentrations were below their respective Soil Cleanup Target Levels (SCTLs) for Residential and Industrial Direct Exposure SCTLs. TRPH concentrations exceeded the Residential Direct Exposure SCTL in three soil samples collected and exceeded the Industrial Direct Exposure SCTL in two of the soil samples collected.

- In December 2008, the environmental contractor advanced seven soil borings for the collection of seven soil samples and collected groundwater samples from three monitoring wells. TRPH speciation was conducted using the Criteria Working Group (CWG) method to determine if the TRPH fractions exceeded the respective standards for the Total Petroleum Hydrocarbon Criteria Working Group (TPHCWG) fractions. TRPH concentrations detected in soil sample SB-13, exceeded the leachability to groundwater criteria, Residential Direct Exposure SCTL and the Industrial Direct Exposure SCTL; however, the analytical results of the TPHCWG analysis indicated that concentrations were below their respective SCTL for all TRPH fractions. TRPH concentrations in groundwater samples collected from monitoring wells MW-8 and MW-23 were above the CTL.

- A quarterly groundwater sampling event was conducted in March 2009; BTEX and PAH concentrations remained below their respective MDLs and/or CTLs. TRPH was detected above its CTL in groundwater samples collected from monitoring wells MW-8 and MW-23; concentrations remained below the CTL in groundwater samples collected from the remaining monitoring wells.

- In September 2009, five additional wells (MW-7, MW-10, MW-15, MW-19 and MW-21) were added to the sampling plan and a semiannual groundwater sampling event was conducted. BTEX and PAH concentrations remained below their respective MDLs or CTLs. The detected TRPH concentration in the groundwater sample collected from monitoring well MW-23 exceeded its CTL.

- In March 2010, a semiannual groundwater sampling event was conducted. A total of eight monitoring wells (MW-7, MW-8, MW-10, MW-15, MW-19, MW-21, MW-23 and MW-26) were sampled and the groundwater samples were analyzed for BTEX, PAHs, and TRPH. BTEX and

PAH concentrations remained below their respective MDLs or CTLs. The detected TRPH concentration in the groundwater sampled collected from monitoring well MW-23 exceeded its CTL.

- In April 2012, SACAL Environmental & Management Company (SACAL) collected soil samples to determine the extent of soil contamination in the area of monitoring wells MW-8 and MW-23.

2.0 APRIL 2012 SOIL INVESTIGATION

During the April 2012 field event, soil samples at select locations were screened with a flame ionization detector (FID) in 1-foot intervals until the water table was encountered. A summary of the 2012 FID readings is provided in Table 1. The locations of the soil borings where soils were screened with an FID in 2012 along with soil boring locations from 2007 and 2008 are provided on Figure 3.

Soil samples were collected from select intervals, based on FID screening, and were submitted to a fixed-based laboratory for analysis of BTEX and methyl tert-butyl ether (MTBE) by United States Environmental Protection Agency (EPA) Method 8260C, low level PAHs by EPA Method 8270C and TRPH by Florida Residual Petroleum Organics Method (FL-PRO). The analytical results are provided in Table 2. Following receipt of the TRPH analytical data, soil samples PCY-0325-4-5-SB-001 and PCY-0325-3-4-SB-005 were selected for aliphatic and aromatic speciation of total petroleum hydrocarbon using the TPHCWG method. A summary of the analytical speciation results is provided in Table 3 and the analytical results are presented on Figure 4. The lithologic description of the soil borings are provided in Attachment 1 and the laboratory report is provided in Attachment 2.

Soil Sample Analytical Results

- Seventeen of the eighteen PAHs were detected in all soil samples collected from the site at concentrations below their respective SCTLs.

- TRPH concentrations detected in soil sample PCY-0325-4-5-SB001 (11,000 milligrams per kilogram [mg/kg]) exceeded the Leachability to Groundwater Criterion of 340 mg/kg, the Residential Direct Exposure SCTL of 460 mg/kg and the Industrial Direct Exposure SCTL of 2,700 mg/kg. TRPH concentrations detected in soil sample PCY-0325-3-4-SB005 (890 mg/kg) exceeded the Leachability to Groundwater and the Residential Direct Exposure SCTLs.

- Soil samples PCY-0325-4-5-SB001 and PCY-032503040SB005 were selected for total petroleum hydrocarbon speciation. The detected concentration of C8-C10 aliphatic hydrocarbons in soil samples PCY-0325-4-5-001 (2,800 mg/kg) exceeded the Residential Direct Exposure SCTL of 1,700 mg/kg. The detected concentrations of C12-C16 aliphatic hydrocarbons in soil sample

PCY-0325-4-5-SB-001 (9,200 mg/kg) and PCY-0325-3-4-SB-005 (5,100 mg/kg) exceeded the Residential Direct Exposure SCTL of 2,900 mg/kg.

3.0 APRIL 2012 GROUNDWATER INVESTIGATION

During the April 2012 sampling event, groundwater samples were collected from monitoring wells MW-7, MW-8, MW-10, MW-15, MW-19, MW-21, MW-23 and MW-26 (Figure 3) and were submitted for laboratory analysis by EPA Method 8260C for BTEX and MTBE; EPA Method 8270C for PAHs; and for TRPH by the FL-PRO method.

The analytical data are provided in Table 4 and the laboratory report is provided in Attachment 2. The exceedances are presented graphically on Figure 5.

Groundwater Analytical Results

- PAHs (1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, anthracene, fluorene, naphthalene) were detected in groundwater samples collected from the site at concentrations below their respective CTLs.

- Naphthalene was detected in groundwater samples collected from monitoring wells MW-8, MW-15, MW-23, and the Field Duplicate at concentrations ranging from 0.18 micrograms per liter (µg/L) in monitoring well MW-15 to 1.7 µg/L in monitoring well MW-23, which is below its respective Florida CTL of 14 µg/L.

- 1-Methylnaphthalene was detected in groundwater samples collected from monitoring wells MW-8, MW-23, and the Field Duplicate at concentrations ranging from 0.74 µg/L in monitoring well MW-8 to 4.3 µg/L in monitoring well MW-23, which is below its respective Florida CTL of 28 µg/L.

- 2-Methylnaphthalene was detected in groundwater samples collected from monitoring wells MW-8, MW-23, and the Field Duplicate at concentrations ranging from 0.68 µg/L in monitoring well MW-8 to 3.8 µg/L in monitoring well MW-23, which is below its respective Florida CTL of 28 µg/L.

- Fluorene was detected in groundwater samples collected from monitoring wells MW-15, MW-23, and the Field Duplicate at concentrations ranging from 0.15 µg/L in monitoring well MW-23 to 0.19 µg/L in the Field Duplicate, which is below its respective Florida CTL of 280 µg/L.

- Acenaphthene was detected in groundwater samples collected from monitoring wells MW-8, MW-15, MW-23 and the Field Duplicate at concentrations ranging from 0.15 µg/L in monitoring

well MW-23 to 0.36 µg/L in monitoring well MW-8, which is below its respective Florida CTL of 20 µg/L.

- Anthracene was detected in groundwater samples collected from monitoring wells MW-23 and the Field Duplicate at concentrations ranging from 0.74 µg/L in the Field Duplicate to 0.75 µg/L in monitoring well MW-23, which is below its FDEP GCTL of 2,100 µg/L.

- TRPH was detected in groundwater samples collected from monitoring wells MW-7, MW-8, MW-15, MW-23, and the Field Duplicate at concentrations ranging from 350 µg/L in MW-7 to 8,300 µg/L in the Field Duplicate. Detected TRPH concentrations in groundwater samples collected from monitoring wells MW-8 (5,600 µg/L), MW-23 (6,500 µg/L) and its duplicate sample (8,300 µg/L) exceed its respective Florida CTL of 5,000 µg/L.

On April 13 and 14, 2012, SACAL collected depth to groundwater measurements (Table 5) and the estimated groundwater flow direction across Site 325 was towards the east (Figure 6), which is consistent with historical groundwater flow data. Groundwater elevation data recorded during the April 2012 event averaged 0.28 feet lower than those recorded during the March 2010 groundwater sampling event.

4.0 CONCLUSIONS AND RECOMENDATIONS

Based on the information provided herein and comparison of the data to the Florida Risk Management Options (RMO), the Navy recommends an RMO Level II closure for soil and groundwater at the site, to include land use controls (LUCs). The LUCs would be designed to prevent unacceptable exposure to contaminated soil and groundwater. Site specific fractionation of TRPH contaminated soil does not exceed Industrial CTLs and is below the permanent concrete cover and is more than 2 feet below land surface. The TRPH concentrations detected in groundwater are impacting less than a quarter acre and the impacted area is limited to the immediate vicinity of two monitoring wells. Multiple rounds of groundwater monitoring from 2006 to present, have demonstrated that the TRPH plume is stable and not migrating away from the localized area and will not affect a freshwater or marine surface water body. Recommended LUC Boundaries are displayed in Figures 7 (soil) and 8 (groundwater). The soil LUC boundary applies to soil deeper than 2 feet bgs. The groundwater LUC boundary applies to water at depths commensurate with the screened intervals of wells within the LUC boundary.

REFERENCES

ABB-ES (ABB Environmental Services, Inc.), 1996. *Resource Conservation and Recovery Act Facility Investigation, Coastal Systems Station (CSS) Panama City, Panama City, Florida, prepared by ABB Environmental Services, Inc. January.*

FDEP (Florida Department of Environmental Protection), 2005. *Final Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 62-777, F.A.C.* Prepared for the Division of Waste Management, Florida Department of Environmental Protection; Prepared by Center for Environmental & Human Toxicology, University of Florida, Gainesville, FL. February 26.

SACAL, 2012. Annual Monitoring Report, Site 325 – Coastal System Station. Naval Support Activity Panama City. Panama City Beach, Florida. April.

US Navy, 2012. Final Sampling Work Plan for Building 98, Site 325 and Area of Concern (AOC)-2/South Dock. Facilities Engineering Command, Southeast, Building 135, Naval Air Station, Jacksonville, Jacksonville, Florida 32212. March.

PROFESSIONAL CERTIFICATION

Technical Memorandum for UST Site 325
Naval Support Activity Panama City
Panama City Beach, Florida

This Technical Memorandum for UST Site 325 at Naval Support Activity Panama City was prepared under my direct supervision using geologic and hydrogeologic principles standard to the profession at the time the report was prepared. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of additional information on the information described in this report. This report was developed specifically for the referenced site and should not be construed to apply to any other site.

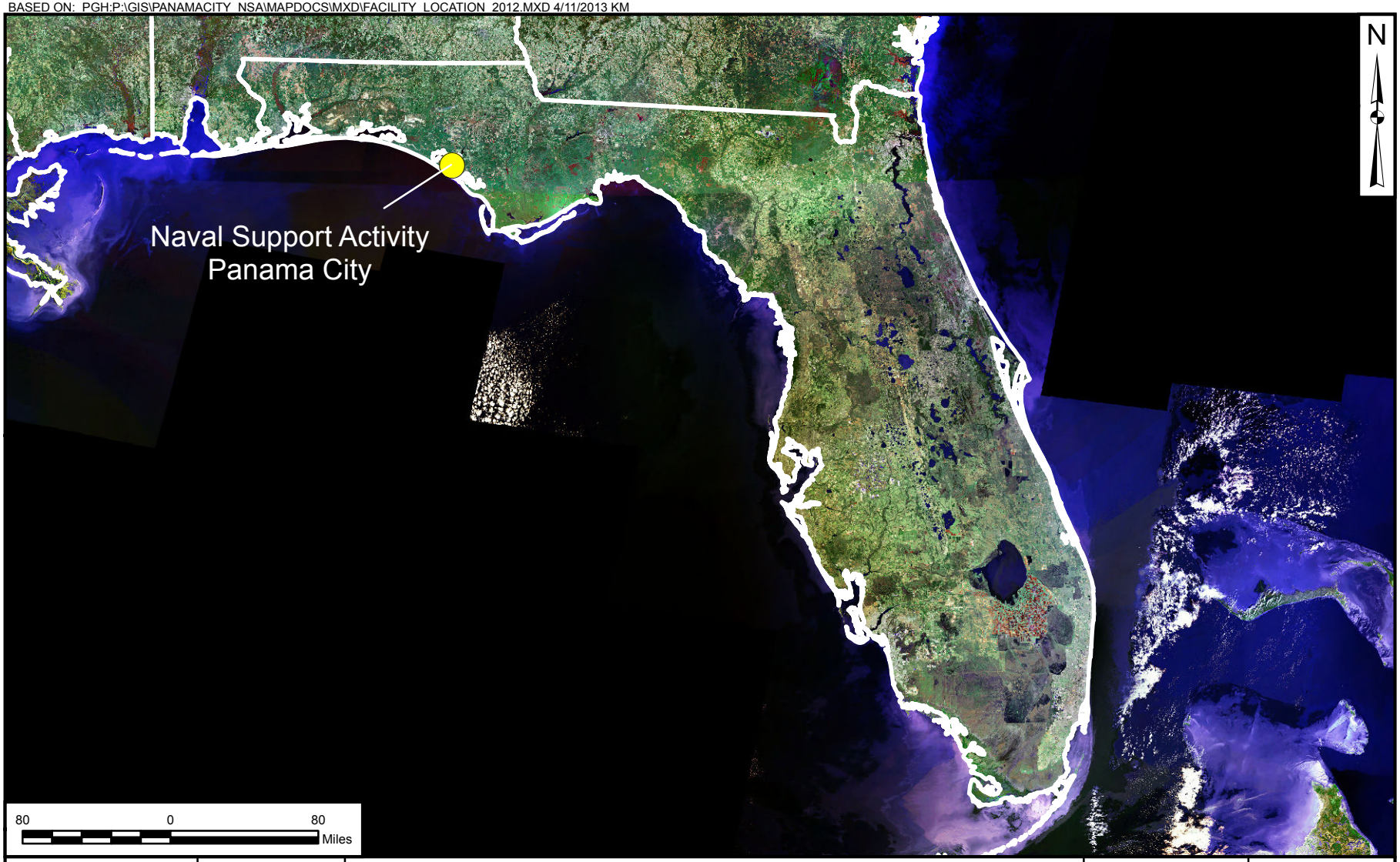
Gerald A. Walker

Gerald A. Walker, P.G.
Florida License No. PG-0001180

September 6, 2013
Date

FIGURES

BASED ON: PGH:P:\GIS\PANAMACITY_NSA\MAPDOCS\MXD\FACILITY_LOCATION_2012.MXD 4/11/2013 KM



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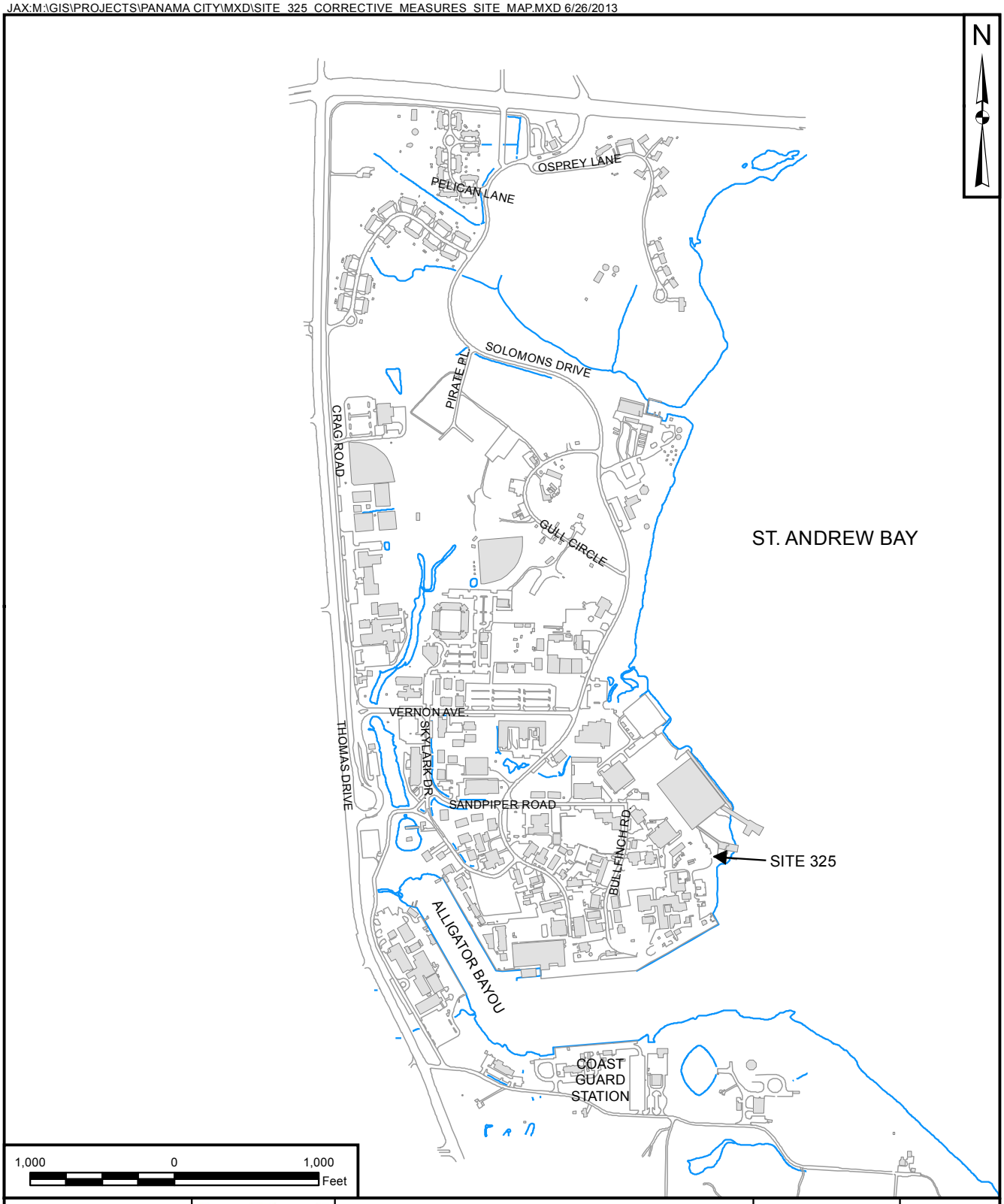
CHECKED BY L. GANSER	DATE 4/11/13	APPROVED BY ___	DATE ___
REVISED BY ___	DATE ___	APPROVED BY ___	DATE ___
SCALE AS NOTED		FIGURE NO. 1	REV 0

JAX:M:\GIS\PROJECTS\PANAMA CITY\MXD\SITE_325_CORRECTIVE_MEASURES_SITE_MAP.MXD 6/26/2013



DRAWN BY	DATE
J.MADDEN	06/26/13
CHECKED BY	DATE
A.IGOE	06/26/13
REVISED BY	DATE
SCALE AS NOTED	

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SITE LOCATION MAP
SITE 325
NSA PANAMA CITY
PANAMA CITY BEACH, FLORIDA

CONTRACT NUMBER	CTO NUMBER
	0066
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 2	REV 0

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DRAWN BY	DATE	CONTRACT NUMBER	CTO NUMBER
J.MADDEN	06/04/13	___	___
CHECKED BY	DATE	APPROVED BY	DATE
A.IGOE	06/04/13	___	___
REVISED BY	DATE	APPROVED BY	DATE
___	___	___	___
SCALE AS NOTED		FIGURE NO. 3	REV 0

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SOIL AND MONITORING WELL LOCATIONS
SITE 325
NSA PANAMA CITY
PANAMA CITY BEACH ,FLORIDA

JAX: C:\GIS\Panama City\MXD\site325_figure2_SB_Exceedances.mxd

Notes:
1) mg/kg=milligrams per kilogram
2) R=State of Florida Residential Soil Cleanup Target Level
3) I=State of Florida Industrial Soil Cleanup Target Level
4) LGW=State of Florida Leachability to Groundwater Criteria
5) TRPH=Total Recoverable Petroleum Hydrocarbon
6) NV=No Value, not a health concern for this exposure scenario

Analyte	Residential	Industrial	Leachability to Groundwater
>C12-C16 TRPH	2900	21000	NV

DRAWN BY J.MADDEN	DATE 06/04/13	SOIL SAMPLE EXCEEDANCES APRIL 2012 SITE 325 NSA PANAMA CITY PANAMA CITY BEACH ,FLORIDA	CONTRACT NUMBER ___ / CTO NUMBER ___
CHECKED BY A.IGOE	DATE 06/04/13		APPROVED BY ___ / DATE ___
REVISED BY ___	DATE ___		APPROVED BY ___ / DATE ___
SCALE AS NOTED			FIGURE NO. 4 / REV 0

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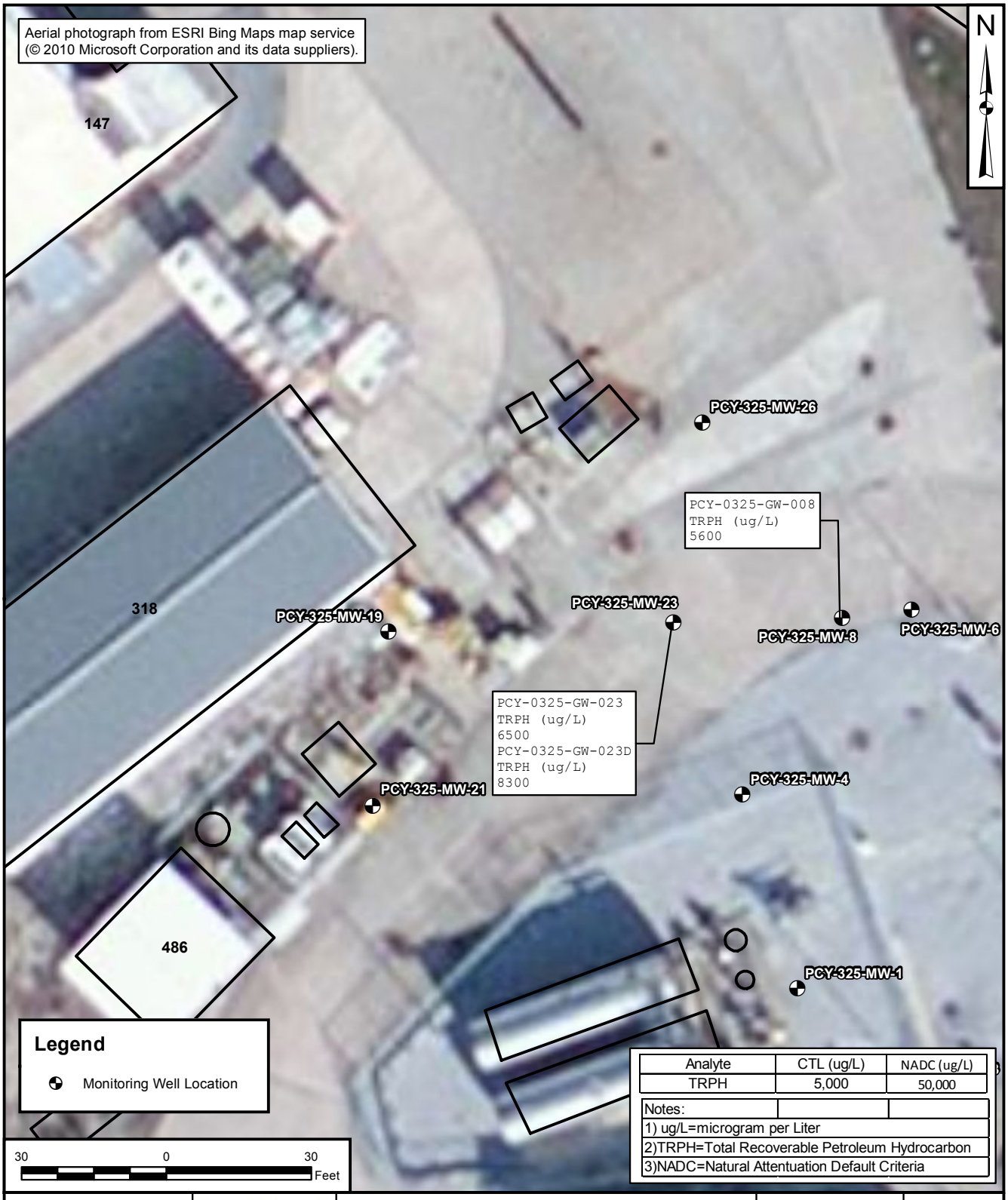

Analyte	CTL (ug/L)	NADC (ug/L)
TRPH	5,000	50,000

Notes:
1) ug/L=microgram per Liter
2)TRPH=Total Recoverable Petroleum Hydrocarbon
3)NADC=Natural Attentuation Default Criteria

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A.IGOE	05/27/13
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SCALE AS NOTED	

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GROUNDWATER EXCEEDANCES APRIL 2012
SITE 325
NSA PANAMA CITY
PANAMA CITY BEACH ,FLORIDA

CONTRACT NUMBER	CTO NUMBER
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FIGURE NO. 5	REV 0

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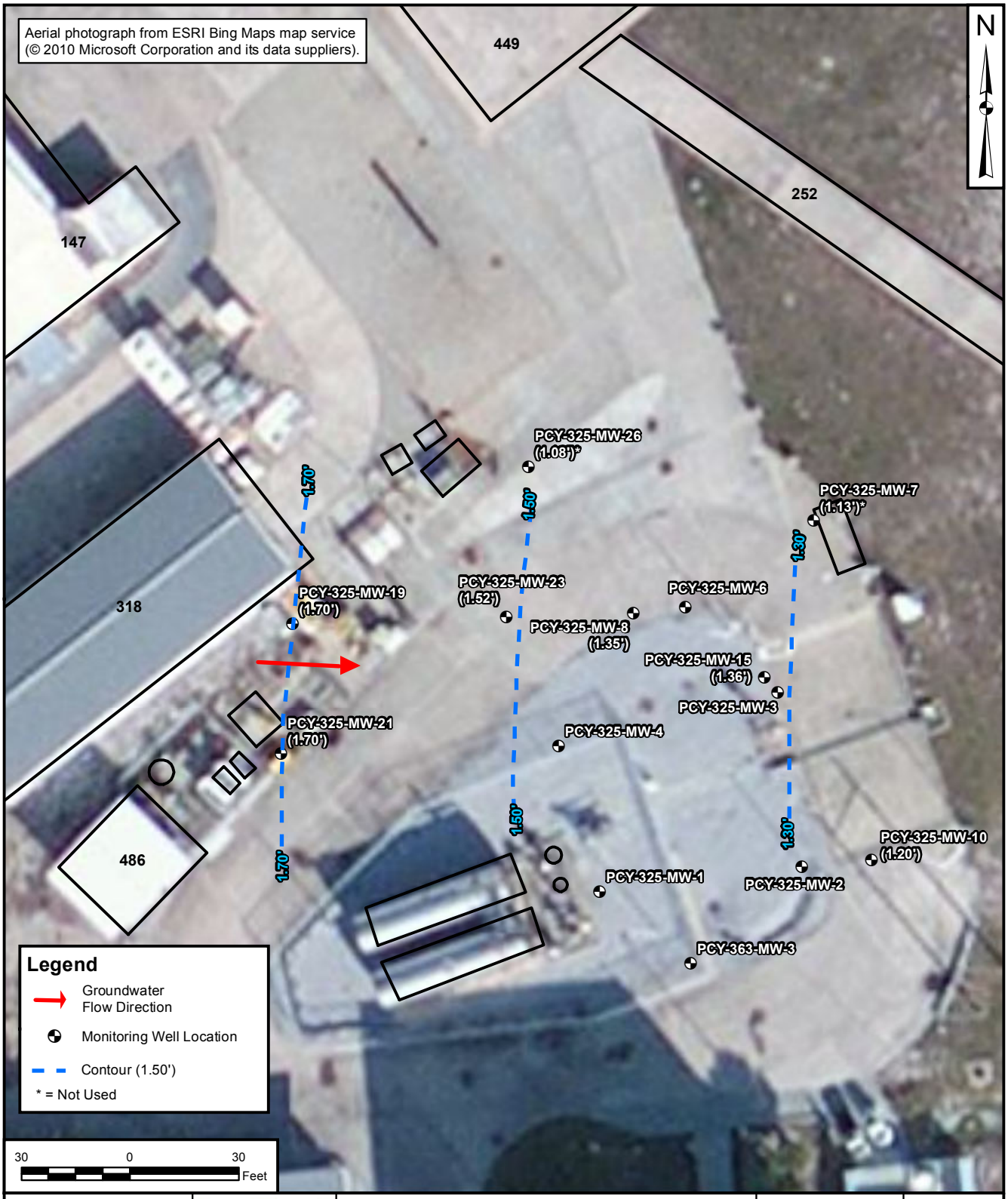

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A.IGOE	06/04/13
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GROUNDWATER FLOW MAP APRIL 2012
SITE 325
NSA PANAMA CITY
PANAMA CITY BEACH ,FLORIDA

CONTRACT NUMBER	CTO NUMBER
APPROVED BY	DATE
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FIGURE NO. 6	REV 0

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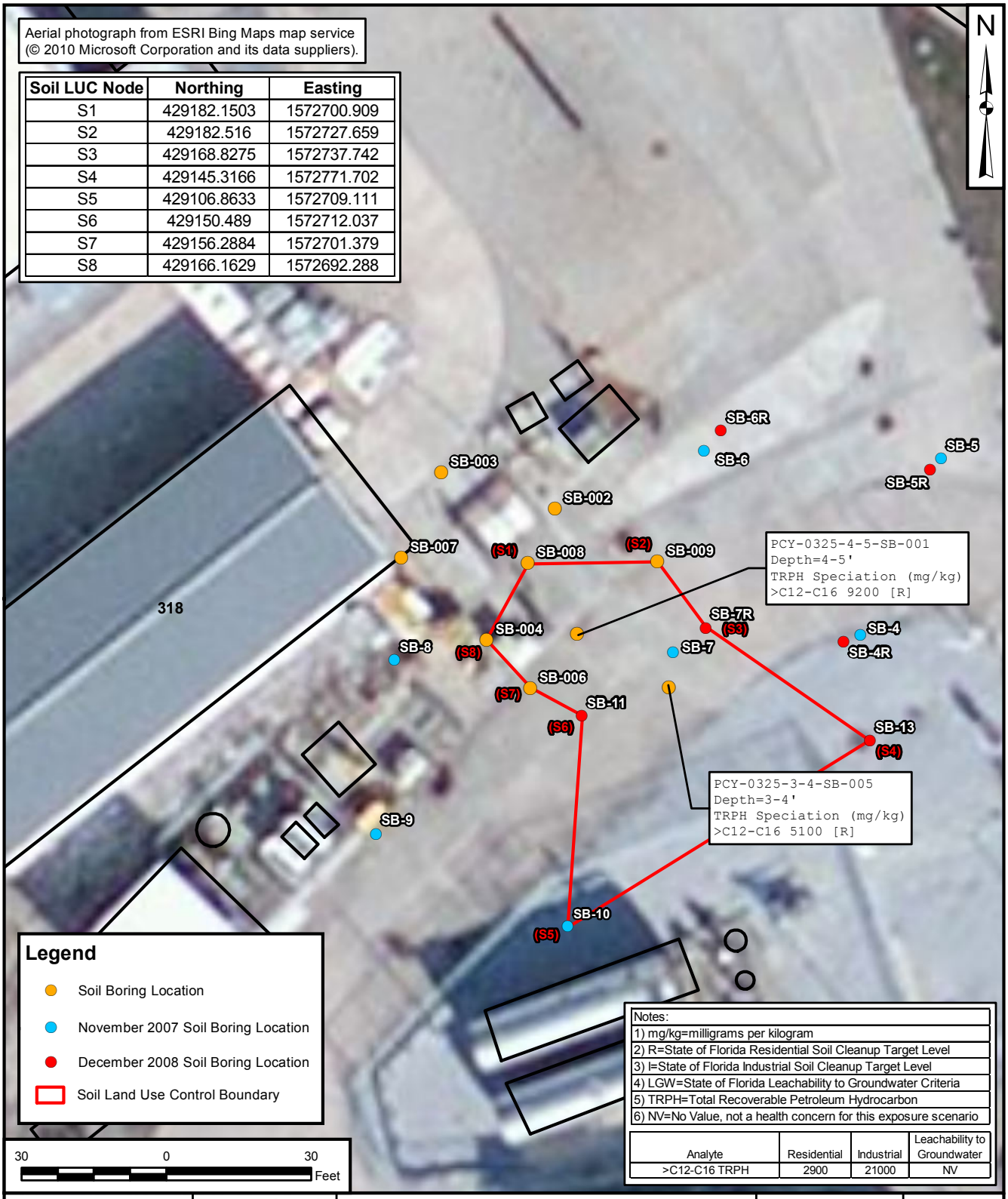

Soil LUC Node	Northing	Easting
S1	429182.1503	1572700.909
S2	429182.516	1572727.659
S3	429168.8275	1572737.742
S4	429145.3166	1572771.702
S5	429106.8633	1572709.111
S6	429150.489	1572712.037
S7	429156.2884	1572701.379
S8	429166.1629	1572692.288

Notes:
1) mg/kg=milligrams per kilogram
2) R=State of Florida Residential Soil Cleanup Target Level
3) I=State of Florida Industrial Soil Cleanup Target Level
4) LGW=State of Florida Leachability to Groundwater Criteria
5) TRPH=Total Recoverable Petroleum Hydrocarbon
6) NV=No Value, not a health concern for this exposure scenario

Analyte	Residential	Industrial	Leachability to Groundwater
>C12-C16 TRPH	2900	21000	NV

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CHECKED BY	DATE
A.IGOE	09/06/13
REVISED BY	DATE
SCALE AS NOTED	

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SOIL LAND USE CONTROL BOUNDARY
SITE 325
NSA PANAMA CITY
PANAMA CITY BEACH ,FLORIDA

CONTRACT NUMBER	CTO NUMBER
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 7	REV 0

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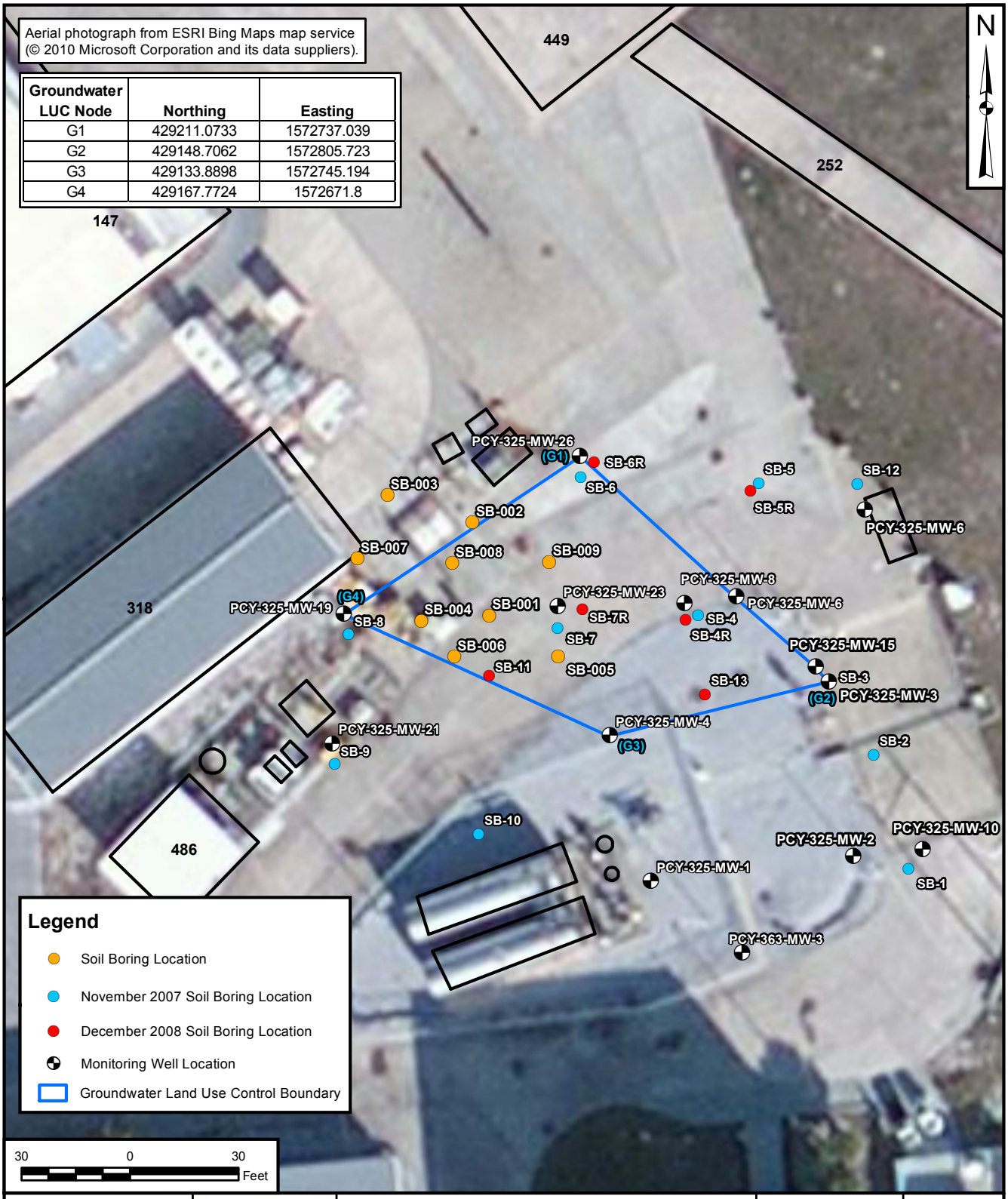

Groundwater LUC Node	Northing	Easting
G1	429211.0733	1572737.039
G2	429148.7062	1572805.723
G3	429133.8898	1572745.194
G4	429167.7724	1572671.8

DRAWN BY J.MADDEN	DATE 09/06/13	GROUNDWATER LAND USE CONTROL BOUNDARY SITE 325 NSA PANAMA CITY PANAMA CITY BEACH ,FLORIDA	CONTRACT NUMBER ___ / CTO NUMBER ___
CHECKED BY A.IGOE	DATE 09/06/13		APPROVED BY ___ / DATE ___
REVISED BY ___	DATE ___		APPROVED BY ___ / DATE ___
SCALE AS NOTED			FIGURE NO. 8 / REV 0

TABLES

TABLE 1: FID SOIL SCREENING SUMMARY 2012
SITE 325
NSA PANAMA CITY
PANAMA CITY BEACH, FLORIDA

SAMPLE				OVA SCREENING RESULTS			COMMENTS
BORING NO.	DATE COLLECTED	DEPTH TO WATER	SAMPLE INTERVAL (FBLS)	TOTAL READING (ppm)	CARBON FILTERED (ppm)	NET READING (ppm)	
PCY-0325-001	4/12/2012	~5.5	0-1	1.9	NA	1.9	
			1-2	1.3	NA	1.3	
			2-3	<1	NA	<1	
			3-4	173.1	0	173.1	
			4-5	247.4	0.2	247.2	Lab sample collected @ 4'-5'
PCY-0325-002	4/12/2012	~6.5	0-1	<1	NA	<1	
			1-2	<1	NA	<1	
			2-3	<1	NA	<1	
			3-4	<1	NA	<1	
			4-5	<1	NA	<1	
			5-6	<1	NA	<1	Lab sample collected @ 4'-6'
PCY-0325-003	4/12/2012	~4.0	0-1	<1	NA	<1	
			1-2	<1	NA	<1	
			2-3	<1	NA	<1	
			3-4	<1	NA	<1	Lab sample collected @ 3'-4'
PCY-0325-004	4/12/2012	~6.5	0-1	<1	NA	<1	
			1-2	<1	NA	<1	
			2-3	<1	NA	<1	
			3-4	<1	NA	<1	
			4-5	25.9	1.5	24.4	
			5-6	591.2	181.3	409.9	Lab sample collected @ 4'-6'
PCY-0325-005	4/12/2012	~4.0	0-1	<1	NA	<1	
			1-2	<1	NA	<1	
			2-3	1.4	NA	1.4	
			3-4	275.1	3.7	271.4	Lab sample collected @ 3'-4'
PCY-0325-006	4/12/2012	~3.0	0-1	1.2	NA	1.2	
			1-2	1.1	NA	1.1	
			2-3	87.5	38.8	48.7	Lab sample collected @ 2'-3'
PCY-0325-007	4/12/2012	~4.0	0-1	5.2	NA	5.2	Lab sample collected @ 0-1'
			1-2	4.2	NA	4.2	
			2-3	<1	NA	<1	
			3-4	<1	NA	<1	
PCY-0325-008	4/12/2012	~5.0	0-1	<1	NA	<1	
			1-2	<1	NA	<1	
			2-3	<1	NA	<1	
			3-4	<1	NA	<1	
			4-5	10.4	0	10.4	Lab sample collected @ 4'-5'
PCY-0325-009	4/12/2012	~3.0	0-1	<1	NA	<1	
			1-2	<1	NA	<1	
			2-3	5.3	NA	5.3	Lab sample collected @ 2'-3'

Notes:

FID=Flame Ionization Detector

FBLS = feet below land surface

NA = Not Analyzed

ppm = parts per million

TABLE 2: SOIL ANALYTICAL SUMMARY
SITE 325
NSA PANAMA CITY
PANAMA CITY BEACH, FLORIDA

							Laboratory Analysis																							
Site Name	Sample Number	Date Collected	Depth to Water (feet)	Sample Interval (fbls)	Net OVA Reading (ppm)	MTBE (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl-benzene (mg/Kg)	Xylenes (mg/Kg)	1-Methyl-naphthalene (mg/Kg)	2-Methyl-naphthalene (mg/Kg)	Naph-thalene (mg/Kg)	Ace-naphthene (mg/Kg)	Acenaph-thylene (mg/Kg)	Anthracene (mg/Kg)	TRPH (mg/Kg)	Benzo[a]-anthracene (mg/Kg)	Benzo[a]-pyrene (mg/Kg)	Benzo[b]-fluoranthene (mg/Kg)	Benzo[g,h,i]-perylene (mg/Kg)	Benzo[k]-fluoranthene (mg/Kg)	Chrysene (mg/Kg)	Dibenzo[a,h]-anthracene (mg/Kg)	Fluoranthene (mg/Kg)	Fluorene (mg/Kg)	Indeno(1,2,3-cd) pyrene (mg/Kg)	Phenanthrene (mg/Kg)	Pyrene (mg/Kg)	BAP TEQ (mg/Kg)	Comments
Residential Exposure Target Level						4400	1.2	7500	1500	130	200	210	55	2400	1800	21000	460	#	0.1	#	2500	#	#	#	3200	2600	#	2200	2400	0.1	
Commercial/Industrial Exposure Target Level						24000	1.7	60000	9200	700	1800	2100	300	20000	20000	300000	2700	#	0.7	#	52000	#	#	#	59000	33000	#	36000	45000	0.7	
Leachability Based on GW Target Level						0.009	0.007	0.5	0.6	0.2	3.1	8.5	1.2	2.1	27	2500	340	0.8	8	2.4	32000	24	77	0.7	1200	160	6.6	250	880	NA	
PCY-0325-	4-5-SB-001	4/12/12	~5.5	4-5	247.2	0.120 U	0.13 U	0.15 U	0.12 U	0.40 U	0.13	0.15	0.38	0.061 U	0.058 U	0.058 U	**11000**	0.066 U	0.044 U	0.045 U	0.057 U	0.071 U	0.073 U	0.043 U	0.060 U	0.110	0.040 U	0.062 U	0.072 U	NA	moderate petro. odor
	4-6-SB-002	4/12/12	~6.5	4-6	<1	0.0013 U	0.0014 U	0.0016 U	0.0013 U	0.0045 U	0.0059 U	0.0059 U	0.0051 U	0.0061 U	0.0057 U	0.0057 U	7.3 I	0.0066 U	0.0044 U	0.0045 U	0.0057 U	0.0070 U	0.0072 U	0.0043 U	0.0059 U	0.0058 U	0.0039 U	0.0061 U	0.0071 U	NA	
	3-4-SB-003	4/12/12	~4.0	3-4	<1	0.0011 U	0.0012 U	0.0013 U	0.0011 U	0.0037 U	0.0062 U	0.0062 U	0.0053 U	0.0063 U	0.0060 U	0.0060 U	4.4 U	0.0069 U	0.0046 U	0.0047 U	0.0059 U	0.0073 U	0.0075 U	0.0045 U	0.0062 U	0.0061 U	0.0041 U	0.0064 U	0.0074 U	NA	
	4-6-SB-004	4/12/12	~6.5	4-6	409.9	0.0014 U	0.0016 U	0.0018 U	0.0014 U	0.0048 U	0.0059 U	0.0059 U	0.0050 U	0.0060 U	0.0057 U	0.0057 U	5.2 I	0.0065 U	0.0044 U	0.0045 U	0.0056 U	0.0070 U	0.0071 U	0.0042 U	0.0059 U	0.0058 U	0.0039 U	0.0061 U	0.0070 U	NA	
	3-4-SB-005	4/12/12	~4.0	3-4	271.4	0.130 U	0.13 U	0.15 U	0.12 U	0.42 U	2.30	2.40	0.90	0.063 U	0.060 U	0.060 U	**8900**	0.069 U	0.046 U	0.047 U	0.059 U	0.074 U	0.076 U	0.045 U	0.062 U	0.130	0.041 U	0.064 U	0.075 U	NA	strong diesel odor
	2-3-SB-006	4/12/12	~3.0	2-3	48.7	0.0061 U	0.0066 U	0.0075 U	0.0059 U	0.021 U	0.096	0.190	0.050	0.014 U	0.013 U	0.013 U	61 I	0.015 U	0.0098 U	0.010 U	0.013 U	0.016 U	0.016 U	0.0095 U	0.013 U	0.015 I	0.0088 U	0.014 U	0.016 U	NA	slight diesel odor
	0-1-SB-007	4/12/12	~4.0	0-1	5.2	0.0011 U	0.0012 U	0.0019 U	0.0011 U	0.0039 U	0.0063 U	0.0062 U	0.0053 U	0.0064 U	0.030	0.032	4.4 U	0.022	0.061	0.085	0.180	0.026	0.022	0.049	0.032	0.0062 U	0.130	0.011	0.029	0.1	
	4-5-SB-008	4/12/12	~5.0	4-5	10.4	0.0014 U	0.0015 U	0.0017 U	0.0014 U	0.0048 U	0.0058 U	0.0058 U	0.0049 U	0.0059 U	0.0056 U	0.0056 U	30 I	0.0064 U	0.0043 U	0.0044 U	0.0055 U	0.0068 U	0.0070 U	0.0041 U	0.0058 U	0.0057 U	0.0038 U	0.0060 U	0.0069 U	NA	
	2-3-SB-009	4/12/12	~3.0	2-3	5.3	0.0014 U	0.0015 U	0.0017 U	0.0014 U	0.0048 U	0.0070 U	0.0070 U	0.0060 U	0.0071 U	0.0067 U	0.0067 U	4.9 U	0.0077 U	0.0052 U	0.0053 U	0.0067 U	0.0083 U	0.0085 U	0.0050 U	0.0070 U	0.0069 U	0.0046 U	0.0072 U	0.0084 U	NA	

Notes:

#=Site concentrations for carcinogenic polycyclic aromatic hydrocarbons must be converted to Benzo(a)pyrene equivalents before comparison with the appropriate direct expusre SCTL for benzo(a)pyrene using the approach described in the February 2005 'Final Technical Report: Development of Cleanup Target Levels (CTS) For Chapter 62-777 Administrative Code

Bolded values exceed FDEP Commercial/Industrial and/or Residential Soil Cleanup Target Levels (SCTLs)

~ = approximate

BAP TEQ - Benzo(a)pyrene Toxicity Equivalent

fbls = feet below land surface

mg/Kg = milligrams per kilogram

MTBE - methyl tert-butyl ether

NA=not applicable

OVA = Organic vapor analyzer

TRPH = Total Recoverable Petroleum Hydrocarbons by Florida Residual Petroleum Organics Method (FL-PRO)

Qualifiers:

I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

U = Not Detected above the laboratory method detection limit stated

TABLE 3: TRPH SPECIATION SOIL ANALYTICAL SUMMARY
SITE 325
NSA PANAMA CITY
PANAMA CITY BEACH, FLORIDA

						Laboratory Analysis													Comments
						Aromatic Hydrocarbons							Aliphatic Hydrocarbons						
Site Name	Sample Number	Date Collected	Depth to Water (feet)	Sample Interval (fbls)	Net OVA Reading (ppm)	C_5 - C_7 (mg/Kg)	>C_7 - C_8 (mg/Kg)	>C_8 - C_{10} (mg/Kg)	>C_{10} - C_{12} (mg/Kg)	>C_{12} - C_{16} (mg/Kg)	>C_{16} - C_{21} (mg/Kg)	>C_{21} - C_{35} (mg/Kg)	C_5 - C_6 (mg/Kg)	>C_6 - C_8 (mg/Kg)	>C_8 - C_{10} (mg/Kg)	>C_{10} - C_{12} (mg/Kg)	>C_{12} - C_{16} (mg/Kg)	>C_{16} - C_{35} (mg/Kg)	
Residential Exposure Target Level						340	490	460	900	1,500	1,300	2,300	6,200	8,700	850	1,700	2,900	42,000	
Commercial/Industrial Exposure Target Level						1,800	3,700	2,700	5,900	12,000	11,000	40,000	33,000	46,000	4,800	10,000	21,000	280,000	
Leachability Based on GW Target Level						34	59	340	520	1,000	3,200	25,000	470	1,300	7,000	51,000	NV	NV	
PCY-0325-	4-5-SB-001	4/12/12	~5.5	4-5	247.2	28 U	28 U	28 U	28 U	130	1,200	170	36 U	36 U	85 I		**9,200**	730	
	3-4-SB-005	4/12/12	~4.0	3-4	271.4	33 U	33 U	33 U	33 U	170	970	180	41 U	41 U	54 I	1,500	**5,100**	400	

Notes:

Bolded values exceed FDEP Commercial/Industrial and/or Residential Soil Cleanup Target Levels (SCTLs)

~ = approximate

fbls = feet below land surface

mg/Kg = milligrams per kilogram

OVA = Organic vapor analyzer

TRPH = Total Recoverable Petroleum Hydrocarbons by Florida Residual Petroleum Organics Method (FL-PRO)

NV = No Value, not a health concern for this exposure scenario

ppm = parts per million

Qualifiers:

I = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

U = Not Detected above the laboratory method detection limit stated

TABLE 4: GROUNDWATER ANALYTICAL SUMMARY

SITE 325
NSA PANAMA CITY
PANAMA CITY BEACH, FLORIDA

					Laboratory Analyses											
Monitoring Well/Sample No.	Date Collected	Depth to Water (feet)	Sample Interval (fbls)	Net OVA Reading (ppm)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	1-Methyl-naphthalene (µg/L)	2-Methyl-naphthalene (µg/L)	Naph-thalene (µg/L)	Fluorene (µg/L)	Ace-naphthene (µg/L)	Anthracene (µg/L)	TRPH (µg/L)	Comments
FDEP Groundwater Cleanup Target Levels					1	40	30	20	28	28	14	280	20	2,100	5,000	
FDEP Natural Attenuation Default Concentrations					100	400	300	200	280	280	140	2,800	200	21,000	50,000	
PCY-0325-GW-007	4/14/12	5.91'	5-15	NM	0.21 U	0.28 U	0.24 U	0.62 U	0.018 U	0.045 U	0.053 U	0.030 U	0.034 U	0.028 U	350 I	
PCY-0325-GW-008	4/14/12	5.77'	2-11.1	NM	0.63 U	0.84 U	0.72 U	1.9 U	0.74	0.68	0.53	0.030 U	0.36	0.028 U	**5,600**	Sulfur Odor
PCY-0325-GW-010	4/13/12	6.20'	2.1-12.1	NM	0.21 U	0.28 U	0.24 U	0.62 U	0.018 U	0.045 U	0.053 U	0.030 U	0.034 U	0.028 U	100 U	
PCY-0325-GW-015	4/13/12	5.74'	3.2-13.2	NM	0.21 U	0.28 U	0.24 U	0.62 U	0.018 U	0.045 U	0.18 I	0.16 I	0.20	0.028 U	1,600	
PCY-0325-GW-019	4/13/12	5.76'	4.7-13.7	NM	0.21 U	0.28 U	0.24 U	0.62 U	0.018 U	0.045 U	0.053 U	0.030 U	0.034 U	0.028 U	100 U	Sulfur Odor
PCY-0325-GW-021	4/13/12	5.08'	4.4-13.6	NM	0.21 U	0.28 U	0.24 U	0.62 U	0.018 U	0.045 U	0.053 U	0.030 U	0.034 U	0.028 U	100 U	
PCY-0325-GW-023	4/14/12	5.73'	4-14	NM	0.63 U	0.84 U	0.72 U	1.9 U	4.30	3.80	1.70	0.15 I	0.15 I	0.75	**6,500**	
PCY-0325-GW-023-FD	4/14/12	5.73'	4-14	NM	0.63 U	0.84 U	0.72 U	1.9 U	3.80	3.50	1.60	0.19 I	0.18 I	0.74	**8,300**	
PCY-0325-GW-026	4/14/12	7.13'	4-14	NM	0.21 U	0.28 U	0.24 U	0.62 U	0.018 U	0.045 U	0.053 U	0.030 U	0.034 U	0.028 U	100 U	

Notes:

Bolded values exceed FDEP Groundwater Cleanup Target Levels (GCTLs)

fbls = feet below land surface

µg/L = micrograms per liter

NA = Not Analyzed

NM = Not Measured

FD = Field Duplicate

OVA = Organic vapor analyzer

ppm - parts per million

TRPH = Total Recoverable Petroleum Hydrocarbons by Florida Residual Petroleum Organics Method (FL-PRO)

Qualifiers:

U = Not detected above the laboratory method detection limit stated

I = Reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

TABLE 5: GROUNDWATER ELEVATION TABLE
SITE 325
NSA PANAMA CITY
PANAMA CITY BEACH, FLORIDA

WELL NO.	MW-7			MW-8			MW-10			MW-15			MW-19			MW-21		
DIAMETER (inches)	2			4			4			2			2			2		
WELL DEPTH (feet)	15			11.1			12.1			13.2			13.7			13.6		
SCREEN INTERVAL (feet)	5-15			2-11.1			2.1-12.1			3.2-13.2			4.7-13.7			4.4-13.6		
TOC ELEVATION (feet msl)	7.04			7.12			7.40			7.10			7.46			6.78		
DATE	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP
4/13/2012	-	NM	-	-	NM	-	1.20	6.20	-	1.36	5.74	-	1.70	5.76	-	1.70	5.08	-
4/14/2012	1.13	5.91	-	1.35	5.77	-	-	NM	-	-	NM	-	-	NM	-	-	NM	-

WELL NO.	MW-23			MW-26		
DIAMETER (inches)	2			2		
WELL DEPTH (feet)	14			14		
SCREEN INTERVAL (feet)	4-14			4-14		
TOC ELEVATION (feet msl)	7.25			8.21		
DATE	ELEV	DTW	FP	ELEV	DTW	FP
4/14/2012	1.52	5.73	-	1.08	7.13	-

Notes:

Elevation and depth to water in measured in feet.

msl = mean sea level

No Data = -

DTW = Depth to Water

FP = Free Product

NM = Not Measured

ATTACHMENT 1

FIELD FORMS

Included on the enclosed CD

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

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Boring/Well Number: PCY-B325-001	Permit Number:	FDEP Facility Identification Number:
Site Name: NSA Panama City	Borehole Start Date: 4/12/12 End Date: 4/12/12	Borehole Start Time: 11:57 ☑ AM ☐ PM End Time: 12:09 ☐ AM ☑ PM
Environmental Contractor: SACAL	Geologist's Name: Ed Glinski	Environmental Technician's Name: Jannyck Gomma
Drilling Company: Custom Drilling	Pavement Thickness (inches): 5.0"	Borehole Diameter (inches): 3.0"
Borehole Depth (feet): 5'		
Drilling Method(s): Hand Auger	Apparent Borehole DTW (in feet from soil moisture content): 5.5'	Measured Well DTW (in feet after water recharges in well):
OVA (list model and check type): MicroFID ☑ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☒ Spread ☒ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☑ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
								5" concrete			
HA	0-1	–	–	1.9	–	1.9	1	SAND - silty; gray-white; dry f. grained		D	~~Sample~~
HA	1-2	–	–	1.3	–	1.3		SAA		M	Collected sample
							2				
HA	2-3	–	–	<1	–	<1	3	SAA - gray-brown; moist		M	PCY-0325-4-5-SB-01 @ 1436
HA	3-4	–	–	173.1	0	173.1	4	SAND - f. to med. gr.; tr. clay; gray-brown; v. moist		VM	moderate to strong petro. odor from 4'-5.5'
HA	4-5	–	–	247.4	0.2	247.2	5	SAND - f. to med. gr.; tr. silt; gray, orange, tan; wet		W	
~~HA~~	~~5-6~~										
							6	E.O.B. @ 5.5'			saturated
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

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Boring/Well Number: PCY-0325-002	Permit Number:	FDEP Facility Identification Number:
Site Name: NSA Panama City	Borehole Start Date: 4/12/12 End Date: 4/12/12	Borehole Start Time: 12:11 ☐ AM ☑ PM End Time: 12:24 ☐ AM ☑ PM
Environmental Contractor: SACAL	Geologist's Name: Ed Glinski	Environmental Technician's Name: Jamyck Gomma
Drilling Company: Custom Drilling	Pavement Thickness (inches): 4.0"	Borehole Diameter (inches): 3.0" / Borehole Depth (feet): 6'
Drilling Method(s): Hand Auger	Apparent Borehole DTW (in feet from soil moisture content): 6.5	Measured Well DTW (in feet after water recharges in well): / OVA (list model and check type): MicroFID ☑ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☑ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☑ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1	—	—	<1	—	<1	1	Sand; fine grain, orange, dry		D	Collected sample PCY-0325-4-6-SB-01 @ 1440
HA	1-2	—	—	<1	—	<1	2	SAA; light-orange;		D	
HA	2-3	—	—	<1	—	<1	3	SAA; white, moist		M	
HA	3-4	—	—	<1	—	<1	4	SAA		M	
HA	4-5	—	—	<1	—	<1	5	SAA		M	
HA	5-6	—	—	<1	—	<1	6	Sand & clay; dark-grey clay; wet		W	
							7				
							8	EOB @ 6.5'			
							9				
							10				
							11				
							12				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

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BORING LOG

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Boring/Well Number: PCY-0325-003	Permit Number:	FDEP Facility Identification Number:
Site Name: NSA Panama City	Borehole Start Date: 4/12/12 End Date: 4/12/12	Borehole Start Time: 12:26 ☐ AM ☑ PM End Time: 12:37 ☐ AM ☑ PM
Environmental Contractor: SACAL.	Geologist's Name: Ed Glinski	Environmental Technician's Name: Jamyck Gamma
Drilling Company: Custom Drilling	Pavement Thickness (inches): 4.0"	Borehole Diameter (inches): 3.0" / Borehole Depth (feet): 4.0'
Drilling Method(s): Hand Auger	Apparent Borehole DTW (in feet from soil moisture content): 4'	Measured Well DTW (in feet after water recharges in well): / OVA (list model and check type): MicroTOL ☑ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☒ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☑ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1	–	–	<1	–	<1	1	Sand; fine grain; brown; dry		D	Collected sample PCY-0325-3-4-SB-003 @ 1454
HA	1-2	–	–	<1	–	<1	2	SAA; white		D	
HA	2-3	–	–	<1	–	<1	3	SAA; moist.		M	
HA	3-4	–	–	<1	–	<1	4	~~Sand; clay, light orange~~ ~~Sand; dark grey clay/silt~~ SAA, light orange, wet		W	
							5	E.O.B @ 4'			
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

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BORING LOG

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Boring/Well Number: PCY-0325-004	Permit Number:	FDEP Facility Identification Number:
Site Name: NSA Panama City	Borehole Start Date: 4/12/12 End Date: 4/12/12	Borehole Start Time: 12:40 ☐ AM ☑ PM End Time: 12:51 ☐ AM ☑ PM
Environmental Contractor: SACAL	Geologist's Name: Ed Glinski	Environmental Technician's Name: Jamyck Gonima
Drilling Company: Custom Drilling	Pavement Thickness (inches): 4.0"	Borehole Diameter (inches): 3.0"
Borehole Depth (feet): 6!		
Drilling Method(s): Hand Auger	Apparent Borehole DTW (in feet from soil moisture content): 6.5'	Measured Well DTW (in feet after water recharges in well):
OVA (list model and check type): Microtid ☑ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☑ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☑ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1	–	–	<1	–	<1	1	Sand; fine grain; white; dry		D	Collected sample PCY-0325-004-6-SB @ 1458
HA	1-2	–	–	<1	–	<1	2	SAA; light brown; moist		M	
HA	2-3	–	–	<1	–	<1	3	SAA; light-orange		M	
HA	3-4	–	–	<1	–	<1	4	SAA; orange		M	
HA	4-5	–	–	25.9	1.5	24.4	5	SAA; white		M	
HA	5-6	–	–	591.2	181.3	409.9	6	SAA; brown; wet; strong diesel smell		W	
							7	E.O.B @ 6.5'			
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

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BORING LOG

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Boring/Well Number: PCY-0325-005	Permit Number:	FDEP Facility Identification Number:
Site Name: NSA Panama City	Borehole Start Date: 4/12/12 End Date: 4/12/12	Borehole Start Time: 1510 ☐ AM ☑ PM End Time: 1525 ☐ AM ☑ PM
Environmental Contractor: SACAL	Geologist's Name: Ed Glinski	Environmental Technician's Name: Tanyle Gonima
Drilling Company: Custom Drilling	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 3"
Borehole Depth (feet): 4.0'		
Drilling Method(s): Hand Auger	Apparent Borehole DTW (in feet from soil moisture content): 4'	Measured Well DTW (in feet after water recharges in well):
OVA (list model and check type): MicroFID ☑ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☑ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1	–	–	<1	–	<1	1	SAND – f. gr.; white, dry		D	
HA	1-2	–	–	<1	–	<1	2	SAA – white and brown; moist		M	
HA	2-3	–	–	1.4	–	1.4	3	SAA – white and orange; moist		M	
HA	3-4	–	–	275.1	3.7	271.4	4	SAA – tan w/ gray clay fractions		W	Collect Sample PCY-0325-03-4-SB-005 @ 1645
							5	E.O.B @ 4'			
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Page 1 of _____

Boring/Well Number: PCY-0325-006	Permit Number:	FDEP Facility Identification Number:
Site Name: NSA Panama City	Borehole Start Date: 4/12/12 End Date: 4/12/12	Borehole Start Time: 1527 ☐ AM ☑ PM End Time: 1542 ☐ AM ☑ PM
Environmental Contractor: SACAL	Geologist's Name: Ed Glinski	Environmental Technician's Name: Jannyck Gonima
Drilling Company: Custom Drilling	Pavement Thickness (inches): 4.0"	Borehole Diameter (inches): 3.0"
Borehole Depth (feet): 31		
Drilling Method(s): Hand Auger	Apparent Borehole DTW (in feet from soil moisture content): 31	Measured Well DTW (in feet after water recharges in well):
OVA (list model and check type): Microtid ☑ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☑ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1	–	[redacted]	1.2	–	1.2	1	SAND - f. gr.; white; moist w/ orange clay		M	
HA	1-2	–	[redacted]	1.1	–	1.1		SAA - no orange clay; moist		M	
HA	2-3	–	–	87.5	38.8	48.7	2	CLAY - black-gray; low plasticity; wet		W	PCY-0325-SB-006 2-3 @ 164 slight diesel? odor
							3				
							4	E.O.B @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Page 1 of _____

Boring/Well Number: PCY-0325-007	Permit Number:	FDEP Facility Identification Number:
Site Name: NSA Panama City	Borehole Start Date: 4/12/12 End Date: 4/12/12	Borehole Start Time: 1410 ☐ AM ☑ PM End Time: 1425 ☐ AM ☑ PM
Environmental Contractor: SACAL	Geologist's Name: Ed Glinski	Environmental Technician's Name: Janyck Gonima
Drilling Company: Custom Drilling	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 3"
Borehole Depth (feet): 4.0"		
Drilling Method(s): Hand Auger	Apparent Borehole DTW (in feet from soil moisture content): 4'	Measured Well DTW (in feet after water recharges in well):
OVA (list model and check type): Micro FID ☑ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☑ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1	-	-	5.2	-	5.2	1	SAND - f. gr.; gray-brown; v. moist		VM	Collect sample PCY-0325-0-1-SB-007 @ 1655
HA	1-2	-	-	4.2	-	4.2	2	SAND - f. gr.; white; moist		M	
HA	2-3	-	-	<1	-	<1	3	SAA - orange-brown w/ gray clay portions, wet		M	
HA	3-4	-	-	<1	-	<1	4				
~~HA~~	~~4-5~~	~~-~~	~~-~~				5	~~[illegible]~~			
							6	E.O.B @ 4'			
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Page 1 of _____

Boring/Well Number: PCY-0325-008	Permit Number:	FDEP Facility Identification Number:
Site Name: NSA Panama City	Borehole Start Date: 4/12/12 End Date: 4/12/12	Borehole Start Time: 1430 ☐ AM ☑ PM End Time: 1445 ☐ AM ☑ PM
Environmental Contractor: SACAL	Geologist's Name: Ed Glinski	Environmental Technician's Name: Janyck Gonima
Drilling Company: Custom Drilling	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 3"
Borehole Depth (feet): 5.0'		
Drilling Method(s): Hand Auger	Apparent Borehole DTW (in feet from soil moisture content): 5'	Measured Well DTW (in feet after water recharges in well):
OVA (list model and check type): MicroFID ☑ FID ☐ PID		

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☑ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1	—	—	<1	—	—		SAND-f.gr; orange; dry		D	
HA	1-2	—	—	<1	—	—	1	SAA - moist		M	
HA	2-3	—	—	<1	—	—	2	SAA - w/ white; moist		M	
HA	3-4	—	—	<1	—	—	3	SAA - orange-brown; fr. clay moist		M	
HA	4-5	—	—	10.4	0	10.4	4	~~SAND f.gr; white/orange~~ wet		W	Collect Sample PCY-0325-008-4-5-SB-@1711
							5	E.O.B. @ 5'			
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

BORING LOG

Page 1 of _____

Boring/Well Number: PCY-0325-009	Permit Number:	FDEP Facility Identification Number:
Site Name: NSA Panama City	Borehole Start Date: 4/12/12 End Date: 4/12/12	Borehole Start Time: 1450 ☐ AM ☑ PM End Time: 1505 ☐ AM ☑ PM
Environmental Contractor: SACAL	Geologist's Name: Ed Glinski	Environmental Technician's Name: Jaulych Gonima
Drilling Company: Custom Drilling	Pavement Thickness (inches): 4"	Borehole Diameter (inches): 3" / Borehole Depth (feet): 3.0'
Drilling Method(s): Hand Auger	Apparent Borehole DTW (in feet from soil moisture content): 3'	Measured Well DTW (in feet after water recharges in well): / OVA (list model and check type): MicroFID ☑ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☐ Drum ☐ Spread ☑ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☐ Grout ☐ Bentonite ☑ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-1	–	–	<1	–	<1	1	SAND-f.gr.; white; dry		D	
HA	1-2	–	–	<1	–	<1	2	SAA, moist		M	
HA	2-3	–	–	5.3	–	5.3	3	SAA, orange brown, wet w/ tr. clay		W	PCY-0325-2-3 SB-009@1716
							4	E.O.B @ 3'			
							5				
							6				
							7				
							8				
							9				
							10				
							11				
							12				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

EQUIPMENT CALIBRATION LOG

PROJECT NAME : NSA Panama City

SITE NAME: AOC-2 / BLDG.98 / SITE 325

PROJECT No.:

INSTRUMENT NAME/MODEL: MicroFID I/SC Exia

MANUFACTURER: Photovac, Inc.

SERIAL NUMBER: CEVK306

	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		
AM	4-11-12	#15025	Ed Glinski			99.8	99.8	100 ppm Methane in Air	Pass
PM	4-11-12	#15025	Ed Glinski			99.6	99.7	LTH070-	NM-CM Pass
AM	4-12-12	#15025	Ed Glinski			99.7	99.8	"	Pass
PM	4-12-12	#15025	Ed Glinski			99.6	99.8	"	Pass
AM									
PM									

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
3902 Corporex Park Drive, Suite 450
Tampa, FL 33619
Toll-free: (877) 259-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 15025
Description Photovac Micro FID
Calibrated 4/9/2012

Manufacturer Photovac
Model Number Micro FID
Serial Number/ Lot Number CZVK306
Location Florida
Department

State Certified
Status Pass
Temp °C 24.3
Humidity % 43

Calibration Specifications

Group # 1
Group Name Methane
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	PPM	100.00	PPM	99.80	99.80	-0.20%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
FL CH4 100PPM	FL CH4 100ppm 105L	Liquid Technology	GP12020	LTH070-MM-CM		8/30/2013

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Brandon James

All instruments are calibrated by Pine Environmental Services, Inc. according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
3902 Corporex Park Drive, Suite 450
Tampa, FL 33619
Toll-free: (877) 259-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 17085
Description YSI 556
Calibrated 4/4/2012

Manufacturer YSI
Model Number 556
Serial Number/ Lot Number 10G101446
Location Florida
Department

State Certified
Status Pass
Temp °C 26
Humidity % 41

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	9.99	9.99	-0.10%	Pass

Group # 2
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.413	1.413	0.00%	Pass

Group # 3
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	240.00	240.00	0.00%	Pass

Group # 4
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	99.50	99.50	-0.50%	Pass

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
3902 Corporex Park Drive, Suite 450
Tampa, FL 33619
Toll-free: (877) 259-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 17085
Description YSI 556
Calibrated 4/4/2012

Test Instruments Used During the Calibration

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	(As Of Cal Entry Date) Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
FL COND 1.413 9084	FL COND 1.413	Aurical	SL30005-5G	9084		7/12/2012
FL ORP 240 MV 2459	FL ORP 240 mV	Hanna	SL50005-500	2459		6/30/2015
FL PH 10 2101326	FL pH 10	VWR	SL10010-5G	2105396		11/30/2012
FL PH 4 2007412	FL pH 4	VWR	SL10004-5G	2007412		7/30/2012
FL PH 7 1009524	FL pH 7	VWR	SL10007-5G	1009524		8/21/2012

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Jacob Cleaveland

All instruments are calibrated by Pine Environmental Services, Inc. according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
3902 Corporex Park Drive, Suite 450
Tampa, FL 33619
Toll-free: (877) 259-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 6802
Description LaMotte 2020E
Calibrated 4/6/2012

Manufacturer LaMotte
Model Number 2020E
Serial Number/ Lot Number ME-10741
Location Florida
Department

State Certified
Status Pass
Temp °C 24
Humidity % 48

Calibration Specifications

Group # 1
Group Name Turbidity
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.00 / 1.00	NTU	1.00	NTU	0.98	0.98	-2.00%	Pass
10.00 / 10.00	NTU	10.00	NTU	9.97	9.97	-0.30%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
FL LAMOTTE 2020E 0.0 C145960	FL Lamotte 2020e 0.0	Ricca		C145960		7/31/2012
FL LAMOTTE 2020E 1.0 1108052	FL Lamotte 2020e 1.0	Ricca		1108052		7/31/2012
FL LAMOTTE 2020E 10 1108051	FL Lamotte 2020e 10	Ricca		1108051		7/31/2012

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Jacob Cleaveland

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.
3902 Corporex Park Drive, Suite 450
Tampa, FL 33619
Toll-free: (877) 259-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 6802
Description LaMotte 2020E
Calibrated 4/6/2012

All instruments are calibrated by Pine Environmental Services, Inc. according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: NSA Panama City		SITE LOCATION: Panama City, FL.	
WELL NO: MW-7	SAMPLE ID: PCY-0325-GW-007	DATE: 4/14/12	

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: 5 feet to 15 feet	STATIC DEPTH TO WATER (feet): 5.91	PURGE PUMP TYPE OR BAILER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14.71 feet – 5.91 feet) X 0.16 gallons/foot = 1.40 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8'	PURGING INITIATED AT: 0816	PURGING ENDED AT: 0850	TOTAL VOLUME PURGED (gallons): 6.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0825	2.25	2.25	0.25	5.08	6.70	24.41	185	0.31	44.3	Tan, slightly cloudy	None.
0828	0.75	3.00	sag	5.08	6.92	24.46	184	0.20	41.7	sag	sag
0831	0.75	3.75	sag	5.43	6.92	24.39	181	0.15	27.5	sag	sag
0834	0.75	4.50	sag	5.92	6.69	24.43	182	0.13	23.0	sag	sag
0838	1.00	5.50	sag	5.92	6.67	24.48	182	0.13	9.85	sag	sag
0840	0.50	6.00	sag	5.93	6.68	24.44	182	0.14	6.55	sag	sag

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Ed Glinski / SACAL	SAMPLER(S) SIGNATURE(S): Edward Glinski	SAMPLING INITIATED AT: 0843	SAMPLING ENDED AT: 0854
PUMP OR TUBING DEPTH IN WELL (feet): 8'	TUBING MATERIAL CODE: S, T.	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
007	1	AG	1L	H2SO4		6.68	PAH, TRPH	APP	480
sag	2	CG	40mL	None		sag	BTEX; MTBE	RFPP	sag
sag	1	sag	sag	HCL.		sag	sag	sag	sag.

REMARKS: Ø

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: NSA Panama City		SITE LOCATION: Panama City, FL.	
WELL NO: MW-8	SAMPLE ID: PCY-0325-GW-008	DATE: 4/14/12	

PURGING DATA

WELL DIAMETER (inches): 4"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: 2 feet to 11.1 feet	STATIC DEPTH TO WATER (feet): 5.77	PURGE PUMP TYPE OR BAILER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.10 feet – 5.77 feet) X 0.65 gallons/foot = 3.46 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8'	PURGING INITIATED AT: 0910	PURGING ENDED AT: 0928	TOTAL VOLUME PURGED (gallons): 3.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0914	1.00	1.00	0.25	5.95	6.17	23.96	232	0.48	2.80	tan; muddy	Sulfur
0917	0.75	1.75	sag	5.96	6.16	24.03	234	0.24	1.41	sag	sag
0920	0.75	2.50	sag	5.97	6.16	24.04	235	0.15	3.14	sag	sag
0922	0.50	3.00	sag	5.97	6.16	24.10	235	0.13	1.74	sag	sag

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./FL): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Ed Glinski / SACAL	SAMPLER(S) SIGNATURE(S): Edward Glinski	SAMPLING INITIATED AT: 0924	SAMPLING ENDED AT: 0931
PUMP OR TUBING DEPTH IN WELL (feet): 8'	TUBING MATERIAL CODE: S, T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
008	1	AG	1L	H2SO4		6.16	PAH; TRPH	APP	480
sag	2	CG	40mL	None		sag	BTEX; MTBE	RFPP	sag
sag	1	sag	sag	HCL		sag	sag	sag	sag

REMARKS: Ø Muddy Soft Bottom, Silt?

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: NSA Panama City	SITE LOCATION: Panama City, FL
WELL NO: MW-10	SAMPLE ID: PCY-0325-GW-010 DATE: 04/13/12

PURGING DATA

WELL DIAMETER (inches): 4"	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 2.10 feet to 12.10 feet	STATIC DEPTH TO WATER (feet): 6.20	PURGE PUMP TYPE OR BAILER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.10 feet – 6.20 feet) X 0.65 gallons/foot = 3.84 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8'	PURGING INITIATED AT: 1722	PURGING ENDED AT: 1809	TOTAL VOLUME PURGED (gallons): 4.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1727	1.25	1.25	0.25	6.46	6.32	23.46	149	0.37	14.80	Clear-Red	None.
1730	0.75	2.00	SAA	6.47	6.33	23.40	152	0.35	14.10	SA	SA.
1733	0.75	2.75	SAA	6.48	6.36	23.38	161	0.32	12.00	Clear	SA.
1737	1.00	3.75	SAA.	6.47	6.39	23.40	163	0.28	10.57	SAA	SA.
1740	0.75	4.50	SAA	6.47	6.42	23.52	165	0.27	9.47	SAA	SAA.

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Ed Glinski / SACAL	SAMPLER(S) SIGNATURE(S): Edward Glinski	SAMPLING INITIATED AT: 1751	SAMPLING ENDED AT: 1815
PUMP OR TUBING DEPTH IN WELL (feet): 8'	TUBING MATERIAL CODE: S/T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced)) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
010.	3	AG	1L	H_2SO_4		6.42	PAH; TRPH	APP	480
SAA	~~1~~ 2	CG	40mL	None		SAA	BTEX; MTBE	RFPP	SAA
SAA	~~2~~ 1	SA	SA	HCL		SAA	SAA.	SAA	SAA

REMARKS: Muddy bottom; reddish color; collected MS & MSD at site; VOA broke & replaced with similar one.

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: NSA Panama City		SITE LOCATION: Panama City, FL	
WELL NO: MW-15	SAMPLE ID: PSY-0325-GW-015		DATE: 04/13/12

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: 3.20 feet to 13.20 feet	STATIC DEPTH TO WATER (feet): 5.74	PURGE PUMP TYPE OR BAILER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.20 feet – 5.74 feet) x 0.16 gallons/foot = 1.19 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8'	PURGING INITIATED AT: 1830	PURGING ENDED AT: 1900	TOTAL VOLUME PURGED (gallons): 5.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1841	2.75	2.75	0.25	5.83	6.51	22.51	263	0.32	11.70	Clear; Red	None.
1844	0.75	3.50	SAA	5.84	6.50	22.48	263	0.29	10.99	SAA	SAA
1847	0.75	4.25	SAA	5.83	6.48	22.38	259	0.24	13.80	SAA	SAA
1850	0.75	5.00	SAA	5.83	6.45	22.35	252	0.25	12.5	SAA	SAA
1853	0.75	5.75	SAA	5.83	6.43	22.35	248	0.20	10.67	SAA	SAA

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Ed Glinski / SACAL	SAMPLER(S) SIGNATURE(S): Edward Glinski	SAMPLING INITIATED AT: 1854	SAMPLING ENDED AT: 1910
PUMP OR TUBING DEPTH IN WELL (feet): 8'	TUBING MATERIAL CODE: ST	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N (replaced)) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
015	1	AG	1L	H_2SO_4		6.43	PAH, TRPH	APP	480
SAA	2	CG	40mL	None		SAA	BTEX, MTBE	RFPP	SAA
SAA	1	SAA	SAA	HCL		SAA	SAA	SAA	SAA.

REMARKS: Muddy red bottom.

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: NSA Panama City		SITE LOCATION: Panama City, FL	
WELL NO: MW-19	SAMPLE ID: PCY-0325-GW-019		DATE: 4/13/12

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: 4.7 feet to 13.7 feet	STATIC DEPTH TO WATER (feet): 5.76	PURGE PUMP TYPE OR BAILER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.68 feet – 5.76 feet) x 0.16 gallons/foot = 1.26 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7'	PURGING INITIATED AT: 1549	PURGING ENDED AT: 1605	TOTAL VOLUME PURGED (gallons): 3.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/l or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1553	1.0	1.0	0.25	5.86	5.93	23.34	111	0.87	2.43	Clear; Brown	Sulfur
1557	1.0	2.0	SAA	5.86	5.91	23.26	109	0.27	1.25	SAA	SAA
1600	0.75	2.75	SAA	5.86	5.90	23.07	106	0.24	5.91	SAA	SAA
1602	0.5	3.25	SAA	5.87	5.90	23.01	106	0.21	7.45	SAA	SAA
1604	0.5	3.75	SAA	5.87	5.91	22.99	106	0.19	1.43	SAA	SAA

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Ed Glinski / SACAL	SAMPLER(S) SIGNATURE(S): Edward Glinski	SAMPLING INITIATED AT: 1610	SAMPLING ENDED AT: 1613
PUMP OR TUBING DEPTH IN WELL (feet): 7'	TUBING MATERIAL CODE: S, T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
019	1	AG	1L	H_2SO_4		5.91	PAA, TRPH	APP	480
SAA	2	CG	40mL	None		SAA	BTEX; MTBE	RFPP	SAA
SAA	1	SAA	SAA	HCL.		SAA	SAA	SAA	SAA.

REMARKS: Algae found in water. Soft Bottom, Muddy Bottom

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: NSA Panama City	SITE LOCATION: Panama City, FL.
WELL NO: MW-21	SAMPLE ID: PCY-0325-GW-021 DATE: 4/13/12.

4/12 PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: ~~[illegible]~~ feet to 13.6 feet	STATIC DEPTH TO WATER (feet): 5.08	PURGE PUMP TYPE OR BAILER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.59 feet – 5.08 feet) X 0.16 gallons/foot = 1.36 ~~0.24~~ gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 6'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 6'	PURGING INITIATED AT: 1433	PURGING ENDED AT: 1450	TOTAL VOLUME PURGED (gallons): 4.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1438	1.25	1.25	0.25	5.61	6.83	24.14	90	0.45	10.93	Clear	Odorless
1442	1.0	2.25	SAA	5.65	6.82	24.33	84	0.28	6.09	SAA	SAA
1446	1.0	3.25	SAA	~~5.68~~	6.80	24.23	84	0.20	4.23	SAA	SAA
1449	0.75	4.00	SAA	5.68	6.81	24.06	85	0.17	3.90	SAA	SAA

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Ed Glinski / SACAL	SAMPLER(S) SIGNATURE(S): Edward Glinski	SAMPLING INITIATED AT: 1452.	SAMPLING ENDED AT: 1500
PUMP OR TUBING DEPTH IN WELL (feet): 6'	TUBING MATERIAL CODE: S/T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
021	1	AG	1L	H_2SO_4		6.81	PAH, TRPH	APP	480.
SAA	2	CG	40mL	None		SAA	BTEX, MTBE	RFPP	SAA.
SAA	1	SAA	SAA	HCL		SAA.	SAA	SAA	SAA.

REMARKS: ~~[illegible]~~ Muddy, Soft Bottom

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: NSA Panama City		SITE LOCATION: Panama City, FL	
WELL NO: MW-23	SAMPLE ID: PCY-0325-GW-023	DATE: 4/14/12	

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: 4 feet to 14 feet	STATIC DEPTH TO WATER (feet): 5.73	PURGE PUMP TYPE OR BAILER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.72 feet – 5.73 feet) x 0.16 gallons/foot = 1.27 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10'	PURGING INITIATED AT: 1057	PURGING ENDED AT: 1127	TOTAL VOLUME PURGED (gallons): 2.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1101	1.00	1.00	0.25	6.05	6.07	24.87	170	0.33	3.96	Clear	None.
1104	0.75	1.75	sag	6.07	6.07	24.99	144	0.19.	2.15	sag	sag.
1106	0.50	2.25	sag	6.07	6.07	24.95	140	0.17	1.41	sag	sag
1108	0.50	2.75	sag	6.07	6.07	24.97	137	0.14	2.61	sag	sag

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) (AFFILIATION): Ed Glinski/SACAL	SAMPLER(S) SIGNATURE(S): Edward Glinski	SAMPLING INITIATED AT: 1114	SAMPLING ENDED AT: 1135.

PUMP OR TUBING DEPTH IN WELL (feet): 10'	TUBING MATERIAL CODE: S, T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP (Y) ~~N~~ TUBING Y (N (replaced)) DUPLICATE: (Y) N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
023	3	AG	1L	H2SO4		6.07/NA(EB)	PAH, TRPH	APP	480
sag	6	CG	40mL	None.		sag	BTEX/MTBE	RFPP/NA(EB)	sag
sag	3	sag	sag	HCL.		sag	sag	sag	sag

FD & EB

REMARKS:
FD collected @ 1124; EB collected @ 1128. ~~Pump~~ Flow cell decon'd before collecting EB.

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: NSA Panama City	SITE LOCATION: Panama City, FL
WELL NO: MW-26	SAMPLE ID: PCY-0325-GW-026 DATE: 4/14/12

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: 4 feet to 14 feet	STATIC DEPTH TO WATER (feet): 7.13	PURGE PUMP TYPE OR BAILER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14 feet – 7.13 feet) x 0.16 gallons/foot = 1.09 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9'	PURGING INITIATED AT: 1026	PURGING ENDED AT: 1038	TOTAL VOLUME PURGED (gallons): 2.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1028	0.50	0.5	0.25	8.22	3.03	24.25	1084	3.15	2.76	Clear	None
1031	0.75	1.25	SAA	8.42	3.10	24.33	1086	2.97	1.76	SAA	SAA
1032	0.25	1.50	SAA	8.62	3.13	24.27	1086	2.92	3.00	SAA	SAA
1034	0.50	2.00	SAA	8.77	3.13	24.28	1086	2.86	2.29	SAA	SAA

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Ed Glinski / SACAL	SAMPLER(S) SIGNATURE(S): Edward Glinski	SAMPLING INITIATED AT: 1036	SAMPLING ENDED AT: 1042
PUMP OR TUBING DEPTH IN WELL (feet): 9'	TUBING MATERIAL CODE: S, T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
026	1	AG	1L	H_2SO_4		3.13	PAH; TRPH	APP	480
SAA	2	CG	40ml	None		SAA	BTEX; MTBE	RFPP	SAA
SAA	1	SAA	SAA	HCL		SAA	SAA	SAA	SAA

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

ATTACHMENT 2

LABORATORY ANALYTICAL DATA

Included on the enclosed CD

Advanced Environmental Laboratories, Inc
6601 Southpoint Parkway
Jacksonville, FL 32216
Phone: (904)363-9350
Fax: (904)363-9354

April 20, 2012

Esau Tuberville
Sacal Environmental & Management Co.
2153 Vineville Ave.
Macon, GA 31208

RE: Workorder: J1203138 NSA Panama City

Dear Esau Tuberville:

Enclosed are the analytical results for sample(s) received by the laboratory on Saturday, April 14, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. The analytical results for the samples contained in this report were submitted for analysis as outlined by the Chain of Custody and results pertain only to these samples.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Gunsaulies
pgunsaulies@aellab.com

Enclosures

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SAMPLE SUMMARY

Workorder: J1203138 NSA Panama City

Lab ID	Sample ID	Matrix	Date Collected	Date Received
J1203138001	PCY-0325-4-5-SB-001	Soil	4/12/2012 14:36	4/14/2012 10:00
J1203138002	PCY-0325-4-6-SB-002	Soil	4/12/2012 14:46	4/14/2012 10:00
J1203138003	PCY-0325-3-4-SB-003	Soil	4/12/2012 14:54	4/14/2012 10:00
J1203138004	PCY-0325-4-6-SB-004	Soil	4/12/2012 14:58	4/14/2012 10:00
J1203138005	PCY-0325-3-4-SB-005	Soil	4/12/2012 16:45	4/14/2012 10:00
J1203138006	PCY-0325-2-3-SB-006	Soil	4/12/2012 16:46	4/14/2012 10:00
J1203138007	PCY-0325-0-1-SB-007	Soil	4/12/2012 16:55	4/14/2012 10:00
J1203138008	PCY-0325-4-5-SB-008	Soil	4/12/2012 17:11	4/14/2012 10:00
J1203138009	PCY-0325-2-3-SB-009	Soil	4/12/2012 17:16	4/14/2012 10:00

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138001** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-4-5-SB-001** Date Collected: 04/12/12 14:36

Results for sample J1203138001 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Soil	Preparation Method: FL-PRO Analytical Method: FL-PRO							
TPH	**11000**	**mg/Kg**		**100**	3600	420	4/19/2012 11:00	J
o-Terphenyl (S)	**0**	**%**	**1**	**100**	62-109		4/19/2012 11:00	
Nonatricontane-C39 (S)	**0**	**%**	**1**	**100**	60-118		4/19/2012 11:00	
Analysis Desc: 8270C-SIM Analysis, Soil	Preparation Method: SW-846 3550B Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**130**	**ug/Kg**		**10**	84	60	4/19/2012 13:49	J
2-Methylnaphthalene	**150**	**ug/Kg**		**10**	84	59	4/19/2012 13:49	J
Acenaphthene	**61**	**ug/Kg**	**U,J4**	**10**	84	61	4/19/2012 13:49	J
Acenaphthylene	**58**	**ug/Kg**	**U,J4**	**10**	84	58	4/19/2012 13:49	J
Anthracene	**58**	**ug/Kg**	**U,J4**	**10**	84	58	4/19/2012 13:49	J
Benzo[a]anthracene	**66**	**ug/Kg**	**U,J4**	**10**	84	66	4/19/2012 13:49	J
Benzo[a]pyrene	**44**	**ug/Kg**	**U,J4**	**10**	84	44	4/19/2012 13:49	J
Benzo[b]fluoranthene	**45**	**ug/Kg**	**U,J4**	**10**	84	45	4/19/2012 13:49	J
Benzo[g,h,i]perylene	**57**	**ug/Kg**	**U,J4**	**10**	84	57	4/19/2012 13:49	J
Benzo[k]fluoranthene	**71**	**ug/Kg**	**U**	**10**	84	71	4/19/2012 13:49	J
Chrysene	**73**	**ug/Kg**	**U,J4**	**10**	84	73	4/19/2012 13:49	J
Dibenzo[a,h]anthracene	**43**	**ug/Kg**	**U,J4**	**10**	84	43	4/19/2012 13:49	J
Fluoranthene	**60**	**ug/Kg**	**U,J4**	**10**	84	60	4/19/2012 13:49	J
Fluorene	**110**	**ug/Kg**		**10**	84	59	4/19/2012 13:49	J
Indeno(1,2,3-cd)pyrene	**40**	**ug/Kg**	**U,J4**	**10**	84	40	4/19/2012 13:49	J
Naphthalene	**380**	**ug/Kg**	**J4**	**10**	84	51	4/19/2012 13:49	J
Phenanthrene	**62**	**ug/Kg**	**U,J4**	**10**	84	62	4/19/2012 13:49	J
Pyrene	**72**	**ug/Kg**	**U**	**10**	84	72	4/19/2012 13:49	J
Decafluorobiphenyl (S)	**136**	**%**		**10**	44.8-137		4/19/2012 13:49	
VOLATILES								
Analysis Desc: 8260C Analysis, Soil	Preparation Method: SW-846 5035 Analytical Method: SW-846 8260B							
Benzene	**130**	**ug/Kg**	**U**	**100**	320	130	4/17/2012 06:15	J
Ethylbenzene	**120**	**ug/Kg**	**U**	**100**	320	120	4/17/2012 06:15	J
Methyl tert-butyl Ether (MTBE)	**120**	**ug/Kg**	**U**	**100**	320	120	4/17/2012 06:15	J
Toluene	**150**	**ug/Kg**	**U**	**100**	320	150	4/17/2012 06:15	J
Xylene (Total)	**400**	**ug/Kg**	**U**	**100**	960	400	4/17/2012 06:15	J
1,2-Dichloroethane-d4 (S)	**99**	**%**		**100**	80-120		4/17/2012 06:15	

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138001** Date Received: 04/14/12 10:00 Matrix: Soil
Sample ID: **PCY-0325-4-5-SB-001** Date Collected: 04/12/12 14:36
Results for sample J1203138001 are reported on a dry weight basis.
Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Toluene-d8 (S)	**105**	**%**		**100**	81-117		4/17/2012 06:15	
Bromofluorobenzene (S)	**102**	**%**		**100**	74-121		4/17/2012 06:15	

Lab ID: **J1203138002** Date Received: 04/14/12 10:00 Matrix: Soil
Sample ID: **PCY-0325-4-6-SB-002** Date Collected: 04/12/12 14:46
Results for sample J1203138002 are reported on a dry weight basis.
Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Soil	Preparation Method: FL-PRO Analytical Method: FL-PRO							
TPH	**7.3**	**mg/Kg**	**I**	**1**	36	4.2	4/18/2012 16:28	J
o-Terphenyl (S)	**92**	**%**		**1**	62-109		4/18/2012 16:28	
Nonatricontane-C39 (S)	**76**	**%**		**1**	60-118		4/18/2012 16:28	
Analysis Desc: 8270C-SIM Analysis, Soil	Preparation Method: SW-846 3550B Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**5.9**	**ug/Kg**	**U**	**1**	8.4	5.9	4/19/2012 14:20	J
2-Methylnaphthalene	**5.9**	**ug/Kg**	**U**	**1**	8.4	5.9	4/19/2012 14:20	J
Acenaphthene	**6.1**	**ug/Kg**	**U**	**1**	8.4	6.1	4/19/2012 14:20	J
Acenaphthylene	**5.7**	**ug/Kg**	**U**	**1**	8.4	5.7	4/19/2012 14:20	J
Anthracene	**5.7**	**ug/Kg**	**U**	**1**	8.4	5.7	4/19/2012 14:20	J
Benzo[a]anthracene	**6.6**	**ug/Kg**	**U**	**1**	8.4	6.6	4/19/2012 14:20	J
Benzo[a]pyrene	**4.4**	**ug/Kg**	**U**	**1**	8.4	4.4	4/19/2012 14:20	J
Benzo[b]fluoranthene	**4.5**	**ug/Kg**	**U**	**1**	8.4	4.5	4/19/2012 14:20	J
Benzo[g,h,i]perylene	**5.7**	**ug/Kg**	**U**	**1**	8.4	5.7	4/19/2012 14:20	J
Benzo[k]fluoranthene	**7.0**	**ug/Kg**	**U**	**1**	8.4	7.0	4/19/2012 14:20	J
Chrysene	**7.2**	**ug/Kg**	**U**	**1**	8.4	7.2	4/19/2012 14:20	J
Dibenzo[a,h]anthracene	**4.3**	**ug/Kg**	**U**	**1**	8.4	4.3	4/19/2012 14:20	J
Fluoranthene	**5.9**	**ug/Kg**	**U**	**1**	8.4	5.9	4/19/2012 14:20	J
Fluorene	**5.8**	**ug/Kg**	**U**	**1**	8.4	5.8	4/19/2012 14:20	J
Indeno(1,2,3-cd)pyrene	**3.9**	**ug/Kg**	**U**	**1**	8.4	3.9	4/19/2012 14:20	J
Naphthalene	**5.1**	**ug/Kg**	**U**	**1**	8.4	5.1	4/19/2012 14:20	J
Phenanthrene	**6.1**	**ug/Kg**	**U**	**1**	8.4	6.1	4/19/2012 14:20	J
Pyrene	**7.1**	**ug/Kg**	**U**	**1**	8.4	7.1	4/19/2012 14:20	J

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138002** Date Received: 04/14/12 10:00 Matrix: Soil
Sample ID: **PCY-0325-4-6-SB-002** Date Collected: 04/12/12 14:46
Results for sample J1203138002 are reported on a dry weight basis.
Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Decafluorobiphenyl (S)	**111**	**%**		**1**	44.8-137		4/19/2012 14:20	
VOLATILES								
Analysis Desc: 8260C Analysis, Soil	Preparation Method: SW-846 5035 Analytical Method: SW-846 8260B							
Benzene	**1.4**	**ug/Kg**	**U**	**1**	3.6	1.4	4/17/2012 07:01	J
Ethylbenzene	**1.3**	**ug/Kg**	**U**	**1**	3.6	1.3	4/17/2012 07:01	J
Methyl tert-butyl Ether (MTBE)	**1.3**	**ug/Kg**	**U**	**1**	3.6	1.3	4/17/2012 07:01	J
Toluene	**1.6**	**ug/Kg**	**U**	**1**	3.6	1.6	4/17/2012 07:01	J
Xylene (Total)	**4.5**	**ug/Kg**	**U**	**1**	11	4.5	4/17/2012 07:01	J
1,2-Dichloroethane-d4 (S)	**105**	**%**		**1**	80-120		4/17/2012 07:01	
Toluene-d8 (S)	**102**	**%**		**1**	81-117		4/17/2012 07:01	
Bromofluorobenzene (S)	**107**	**%**		**1**	74-121		4/17/2012 07:01	

Lab ID: **J1203138003** Date Received: 04/14/12 10:00 Matrix: Soil
Sample ID: **PCY-0325-3-4-SB-003** Date Collected: 04/12/12 14:54
Results for sample J1203138003 are reported on a dry weight basis.
Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Soil	Preparation Method: FL-PRO Analytical Method: FL-PRO							
TPH	**4.4**	**mg/Kg**	**U**	**1**	37	4.4	4/18/2012 16:58	J
o-Terphenyl (S)	**89**	**%**		**1**	62-109		4/18/2012 16:58	
Nonatricontane-C39 (S)	**66**	**%**		**1**	60-118		4/18/2012 16:58	
Analysis Desc: 8270C-SIM Analysis, Soil	Preparation Method: SW-846 3550B Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**6.2**	**ug/Kg**	**U**	**1**	8.8	6.2	4/19/2012 14:51	J
2-Methylnaphthalene	**6.2**	**ug/Kg**	**U**	**1**	8.8	6.2	4/19/2012 14:51	J
Acenaphthene	**6.3**	**ug/Kg**	**U**	**1**	8.8	6.3	4/19/2012 14:51	J
Acenaphthylene	**6.0**	**ug/Kg**	**U**	**1**	8.8	6.0	4/19/2012 14:51	J
Anthracene	**6.0**	**ug/Kg**	**U**	**1**	8.8	6.0	4/19/2012 14:51	J
Benzo[a]anthracene	**6.9**	**ug/Kg**	**U**	**1**	8.8	6.9	4/19/2012 14:51	J
Benzo[a]pyrene	**4.6**	**ug/Kg**	**U**	**1**	8.8	4.6	4/19/2012 14:51	J

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138003** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-3-4-SB-003** Date Collected: 04/12/12 14:54

Results for sample J1203138003 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Benzo[b]fluoranthene	**4.7**	**ug/Kg**	**U**	**1**	8.8	4.7	4/19/2012 14:51	J
Benzo[g,h,i]perylene	**5.9**	**ug/Kg**	**U**	**1**	8.8	5.9	4/19/2012 14:51	J
Benzo[k]fluoranthene	**7.3**	**ug/Kg**	**U**	**1**	8.8	7.3	4/19/2012 14:51	J
Chrysene	**7.5**	**ug/Kg**	**U**	**1**	8.8	7.5	4/19/2012 14:51	J
Dibenzo[a,h]anthracene	**4.5**	**ug/Kg**	**U**	**1**	8.8	4.5	4/19/2012 14:51	J
Fluoranthene	**6.2**	**ug/Kg**	**U**	**1**	8.8	6.2	4/19/2012 14:51	J
Fluorene	**6.1**	**ug/Kg**	**U**	**1**	8.8	6.1	4/19/2012 14:51	J
Indeno(1,2,3-cd)pyrene	**4.1**	**ug/Kg**	**U**	**1**	8.8	4.1	4/19/2012 14:51	J
Naphthalene	**5.3**	**ug/Kg**	**U**	**1**	8.8	5.3	4/19/2012 14:51	J
Phenanthrene	**6.4**	**ug/Kg**	**U**	**1**	8.8	6.4	4/19/2012 14:51	J
Pyrene	**7.4**	**ug/Kg**	**U**	**1**	8.8	7.4	4/19/2012 14:51	J
Decafluorobiphenyl (S)	**119**	**%**		**1**	44.8-137		4/19/2012 14:51	

VOLATILES

Analysis Desc: 8260C Analysis, Soil — Preparation Method: SW-846 5035

Analytical Method: SW-846 8260B

Benzene	**1.2**	**ug/Kg**	**U**	**1**	2.9	1.2	4/17/2012 07:46	J
Ethylbenzene	**1.1**	**ug/Kg**	**U**	**1**	2.9	1.1	4/17/2012 07:46	J
Methyl tert-butyl Ether (MTBE)	**1.1**	**ug/Kg**	**U**	**1**	2.9	1.1	4/17/2012 07:46	J
Toluene	**1.3**	**ug/Kg**	**U**	**1**	2.9	1.3	4/17/2012 07:46	J
Xylene (Total)	**3.7**	**ug/Kg**	**U**	**1**	8.7	3.7	4/17/2012 07:46	J
1,2-Dichloroethane-d4 (S)	**101**	**%**		**1**	80-120		4/17/2012 07:46	
Toluene-d8 (S)	**101**	**%**		**1**	81-117		4/17/2012 07:46	
Bromofluorobenzene (S)	**113**	**%**		**1**	74-121		4/17/2012 07:46	

Lab ID: **J1203138004** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-4-6-SB-004** Date Collected: 04/12/12 14:58

Results for sample J1203138004 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Soil — Preparation Method: FL-PRO								
Analytical Method: FL-PRO								
TPH	**5.2**	**mg/Kg**	**I**	**1**	37	4.3	4/18/2012 17:29	J
o-Terphenyl (S)	**89**	**%**		**1**	62-109		4/18/2012 17:29	

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138004** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-4-6-SB-004** Date Collected: 04/12/12 14:58

Results for sample J1203138004 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Nonatricontane-C39 (S)	**74**	**%**		**1**	60-118		4/18/2012 17:29	
Analysis Desc: 8270C-SIM Analysis, Soil	Preparation Method: SW-846 3550B Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**5.9**	**ug/Kg**	**U**	**1**	8.3	5.9	4/19/2012 15:23	J
2-Methylnaphthalene	**5.9**	**ug/Kg**	**U**	**1**	8.3	5.9	4/19/2012 15:23	J
Acenaphthene	**6.0**	**ug/Kg**	**U**	**1**	8.3	6.0	4/19/2012 15:23	J
Acenaphthylene	**5.7**	**ug/Kg**	**U**	**1**	8.3	5.7	4/19/2012 15:23	J
Anthracene	**5.7**	**ug/Kg**	**U**	**1**	8.3	5.7	4/19/2012 15:23	J
Benzo[a]anthracene	**6.5**	**ug/Kg**	**U**	**1**	8.3	6.5	4/19/2012 15:23	J
Benzo[a]pyrene	**4.4**	**ug/Kg**	**U**	**1**	8.3	4.4	4/19/2012 15:23	J
Benzo[b]fluoranthene	**4.5**	**ug/Kg**	**U**	**1**	8.3	4.5	4/19/2012 15:23	J
Benzo[g,h,i]perylene	**5.6**	**ug/Kg**	**U**	**1**	8.3	5.6	4/19/2012 15:23	J
Benzo[k]fluoranthene	**7.0**	**ug/Kg**	**U**	**1**	8.3	7.0	4/19/2012 15:23	J
Chrysene	**7.1**	**ug/Kg**	**U**	**1**	8.3	7.1	4/19/2012 15:23	J
Dibenzo[a,h]anthracene	**4.2**	**ug/Kg**	**U**	**1**	8.3	4.2	4/19/2012 15:23	J
Fluoranthene	**5.9**	**ug/Kg**	**U**	**1**	8.3	5.9	4/19/2012 15:23	J
Fluorene	**5.8**	**ug/Kg**	**U**	**1**	8.3	5.8	4/19/2012 15:23	J
Indeno(1,2,3-cd)pyrene	**3.9**	**ug/Kg**	**U**	**1**	8.3	3.9	4/19/2012 15:23	J
Naphthalene	**5.0**	**ug/Kg**	**U**	**1**	8.3	5.0	4/19/2012 15:23	J
Phenanthrene	**6.1**	**ug/Kg**	**U**	**1**	8.3	6.1	4/19/2012 15:23	J
Pyrene	**7.0**	**ug/Kg**	**U**	**1**	8.3	7.0	4/19/2012 15:23	J
Decafluorobiphenyl (S)	**94**	**%**		**1**	44.8-137		4/19/2012 15:23	
VOLATILES								
Analysis Desc: 8260C Analysis, Soil	Preparation Method: SW-846 5035 Analytical Method: SW-846 8260B							
Benzene	**1.6**	**ug/Kg**	**U**	**1**	3.8	1.6	4/17/2012 08:31	J
Ethylbenzene	**1.4**	**ug/Kg**	**U**	**1**	3.8	1.4	4/17/2012 08:31	J
Methyl tert-butyl Ether (MTBE)	**1.4**	**ug/Kg**	**U**	**1**	3.8	1.4	4/17/2012 08:31	J
Toluene	**1.8**	**ug/Kg**	**U**	**1**	3.8	1.8	4/17/2012 08:31	J
Xylene (Total)	**4.8**	**ug/Kg**	**U**	**1**	11	4.8	4/17/2012 08:31	J
1,2-Dichloroethane-d4 (S)	**104**	**%**		**1**	80-120		4/17/2012 08:31	
Toluene-d8 (S)	**101**	**%**		**1**	81-117		4/17/2012 08:31	
Bromofluorobenzene (S)	**107**	**%**		**1**	74-121		4/17/2012 08:31	

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138005** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-3-4-SB-005** Date Collected: 04/12/12 16:45

Results for sample J1203138005 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Soil	Preparation Method: FL-PRO Analytical Method: FL-PRO							
TPH	**8900**	**mg/Kg**		**100**	3700	440	4/19/2012 11:30	J
o-Terphenyl (S)	**0**	**%**	**1**	**100**	62-109		4/19/2012 11:30	
Nonatricontane-C39 (S)	**0**	**%**	**1**	**100**	60-118		4/19/2012 11:30	
Analysis Desc: 8270C-SIM Analysis, Soil	Preparation Method: SW-846 3550B Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**2300**	**ug/Kg**		**10**	88	62	4/19/2012 15:54	J
2-Methylnaphthalene	**2400**	**ug/Kg**		**10**	88	62	4/19/2012 15:54	J
Acenaphthene	**63**	**ug/Kg**	**U**	**10**	88	63	4/19/2012 15:54	J
Acenaphthylene	**60**	**ug/Kg**	**U**	**10**	88	60	4/19/2012 15:54	J
Anthracene	**60**	**ug/Kg**	**U**	**10**	88	60	4/19/2012 15:54	J
Benzo[a]anthracene	**69**	**ug/Kg**	**U**	**10**	88	69	4/19/2012 15:54	J
Benzo[a]pyrene	**46**	**ug/Kg**	**U**	**10**	88	46	4/19/2012 15:54	J
Benzo[b]fluoranthene	**47**	**ug/Kg**	**U**	**10**	88	47	4/19/2012 15:54	J
Benzo[g,h,i]perylene	**59**	**ug/Kg**	**U**	**10**	88	59	4/19/2012 15:54	J
Benzo[k]fluoranthene	**74**	**ug/Kg**	**U**	**10**	88	74	4/19/2012 15:54	J
Chrysene	**76**	**ug/Kg**	**U**	**10**	88	76	4/19/2012 15:54	J
Dibenzo[a,h]anthracene	**45**	**ug/Kg**	**U**	**10**	88	45	4/19/2012 15:54	J
Fluoranthene	**62**	**ug/Kg**	**U**	**10**	88	62	4/19/2012 15:54	J
Fluorene	**130**	**ug/Kg**		**10**	88	61	4/19/2012 15:54	J
Indeno(1,2,3-cd)pyrene	**41**	**ug/Kg**	**U**	**10**	88	41	4/19/2012 15:54	J
Naphthalene	**900**	**ug/Kg**		**10**	88	53	4/19/2012 15:54	J
Phenanthrene	**64**	**ug/Kg**	**U**	**10**	88	64	4/19/2012 15:54	J
Pyrene	**75**	**ug/Kg**	**U**	**10**	88	75	4/19/2012 15:54	J
Decafluorobiphenyl (S)	**108**	**%**		**10**	44.8-137		4/19/2012 15:54	
VOLATILES								
Analysis Desc: 8260C Analysis, Soil	Preparation Method: SW-846 5035 Analytical Method: SW-846 8260B							
Benzene	**130**	**ug/Kg**	**U**	**100**	330	130	4/18/2012 01:20	J
Ethylbenzene	**120**	**ug/Kg**	**U**	**100**	330	120	4/18/2012 01:20	J
Methyl tert-butyl Ether (MTBE)	**130**	**ug/Kg**	**U**	**100**	330	130	4/18/2012 01:20	J
Toluene	**150**	**ug/Kg**	**U**	**100**	330	150	4/18/2012 01:20	J
Xylene (Total)	**420**	**ug/Kg**	**U**	**100**	1000	420	4/18/2012 01:20	J
1,2-Dichloroethane-d4 (S)	**99**	**%**		**100**	80-120		4/18/2012 01:20	

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138005** Date Received: 04/14/12 10:00 Matrix: Soil
Sample ID: **PCY-0325-3-4-SB-005** Date Collected: 04/12/12 16:45
Results for sample J1203138005 are reported on a dry weight basis.
Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Toluene-d8 (S)	**100**	**%**		**100**	81-117		4/18/2012 01:20	
Bromofluorobenzene (S)	**105**	**%**		**100**	74-121		4/18/2012 01:20	

Lab ID: **J1203138006** Date Received: 04/14/12 10:00 Matrix: Soil
Sample ID: **PCY-0325-2-3-SB-006** Date Collected: 04/12/12 16:46
Results for sample J1203138006 are reported on a dry weight basis.
Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Soil	Preparation Method: FL-PRO Analytical Method: FL-PRO							
TPH	**61**	**mg/Kg**	**I**	**1**	80	9.3	4/18/2012 18:33	J
o-Terphenyl (S)	**97**	**%**		**1**	62-109		4/18/2012 18:33	
Nonatricontane-C39 (S)	**81**	**%**		**1**	60-118		4/18/2012 18:33	
Analysis Desc: 8270C-SIM Analysis, Soil	Preparation Method: SW-846 3550B Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**96**	**ug/Kg**		**1**	19	13	4/19/2012 16:25	J
2-Methylnaphthalene	**190**	**ug/Kg**		**1**	19	13	4/19/2012 16:25	J
Acenaphthene	**14**	**ug/Kg**	**U**	**1**	19	14	4/19/2012 16:25	J
Acenaphthylene	**13**	**ug/Kg**	**U**	**1**	19	13	4/19/2012 16:25	J
Anthracene	**13**	**ug/Kg**	**U**	**1**	19	13	4/19/2012 16:25	J
Benzo[a]anthracene	**15**	**ug/Kg**	**U**	**1**	19	15	4/19/2012 16:25	J
Benzo[a]pyrene	**9.8**	**ug/Kg**	**U**	**1**	19	9.8	4/19/2012 16:25	J
Benzo[b]fluoranthene	**10**	**ug/Kg**	**U**	**1**	19	10	4/19/2012 16:25	J
Benzo[g,h,i]perylene	**13**	**ug/Kg**	**U**	**1**	19	13	4/19/2012 16:25	J
Benzo[k]fluoranthene	**16**	**ug/Kg**	**U**	**1**	19	16	4/19/2012 16:25	J
Chrysene	**16**	**ug/Kg**	**U**	**1**	19	16	4/19/2012 16:25	J
Dibenzo[a,h]anthracene	**9.5**	**ug/Kg**	**U**	**1**	19	9.5	4/19/2012 16:25	J
Fluoranthene	**13**	**ug/Kg**	**U**	**1**	19	13	4/19/2012 16:25	J
Fluorene	**15**	**ug/Kg**	**I**	**1**	19	13	4/19/2012 16:25	J
Indeno(1,2,3-cd)pyrene	**8.8**	**ug/Kg**	**U**	**1**	19	8.8	4/19/2012 16:25	J
Naphthalene	**50**	**ug/Kg**		**1**	19	11	4/19/2012 16:25	J
Phenanthrene	**14**	**ug/Kg**	**U**	**1**	19	14	4/19/2012 16:25	J
Pyrene	**16**	**ug/Kg**	**U**	**1**	19	16	4/19/2012 16:25	J

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138006** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-2-3-SB-006** Date Collected: 04/12/12 16:46

Results for sample J1203138006 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Decafluorobiphenyl (S)	**104**	**%**		**1**	44.8-137		4/19/2012 16:25	
VOLATILES								
Analysis Desc: 8260C Analysis, Soil	Preparation Method: SW-846 5035 Analytical Method: SW-846 8260B							
Benzene	**6.6**	**ug/Kg**	**U**	**1**	16	6.6	4/18/2012 09:36	J
Ethylbenzene	**5.9**	**ug/Kg**	**U**	**1**	16	5.9	4/18/2012 09:36	J
Methyl tert-butyl Ether (MTBE)	**6.1**	**ug/Kg**	**U**	**1**	16	6.1	4/18/2012 09:36	J
Toluene	**7.5**	**ug/Kg**	**U**	**1**	16	7.5	4/18/2012 09:36	J
Xylene (Total)	**21**	**ug/Kg**	**U**	**1**	49	21	4/18/2012 09:36	J
1,2-Dichloroethane-d4 (S)	**103**	**%**		**1**	80-120		4/18/2012 09:36	
Toluene-d8 (S)	**108**	**%**		**1**	81-117		4/18/2012 09:36	
Bromofluorobenzene (S)	**129**	**%**	**J4**	**1**	74-121		4/18/2012 09:36	

Lab ID: **J1203138007** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-0-1-SB-007** Date Collected: 04/12/12 16:55

Results for sample J1203138007 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Soil	Preparation Method: FL-PRO Analytical Method: FL-PRO							
TPH	**4.4**	**mg/Kg**	**U**	**1**	38	4.4	4/18/2012 19:04	J
o-Terphenyl (S)	**88**	**%**		**1**	62-109		4/18/2012 19:04	
Nonatricontane-C39 (S)	**85**	**%**		**1**	60-118		4/18/2012 19:04	
Analysis Desc: 8270C-SIM Analysis, Soil	Preparation Method: SW-846 3550B Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**6.3**	**ug/Kg**	**U**	**1**	8.9	6.3	4/19/2012 16:57	J
2-Methylnaphthalene	**6.2**	**ug/Kg**	**U**	**1**	8.9	6.2	4/19/2012 16:57	J
Acenaphthene	**6.4**	**ug/Kg**	**U**	**1**	8.9	6.4	4/19/2012 16:57	J
Acenaphthylene	**30**	**ug/Kg**		**1**	8.9	6.1	4/19/2012 16:57	J
Anthracene	**32**	**ug/Kg**		**1**	8.9	6.1	4/19/2012 16:57	J
Benzo[a]anthracene	**22**	**ug/Kg**		**1**	8.9	6.9	4/19/2012 16:57	J
Benzo[a]pyrene	**61**	**ug/Kg**		**1**	8.9	4.6	4/19/2012 16:57	J

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138007** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-0-1-SB-007** Date Collected: 04/12/12 16:55

Results for sample J1203138007 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Benzo[b]fluoranthene	**85**	**ug/Kg**		**1**	8.9	4.8	4/19/2012 16:57	J
Benzo[g,h,i]perylene	**180**	**ug/Kg**		**1**	8.9	6.0	4/19/2012 16:57	J
Benzo[k]fluoranthene	**26**	**ug/Kg**		**1**	8.9	7.4	4/19/2012 16:57	J
Chrysene	**22**	**ug/Kg**		**1**	8.9	7.6	4/19/2012 16:57	J
Dibenzo[a,h]anthracene	**49**	**ug/Kg**		**1**	8.9	4.5	4/19/2012 16:57	J
Fluoranthene	**32**	**ug/Kg**		**1**	8.9	6.3	4/19/2012 16:57	J
Fluorene	**6.2**	**ug/Kg**	**U**	**1**	8.9	6.2	4/19/2012 16:57	J
Indeno(1,2,3-cd)pyrene	**130**	**ug/Kg**		**1**	8.9	4.2	4/19/2012 16:57	J
Naphthalene	**5.3**	**ug/Kg**	**U**	**1**	8.9	5.3	4/19/2012 16:57	J
Phenanthrene	**11**	**ug/Kg**		**1**	8.9	6.5	4/19/2012 16:57	J
Pyrene	**29**	**ug/Kg**		**1**	8.9	7.5	4/19/2012 16:57	J
Decafluorobiphenyl (S)	**92**	**%**		**1**	44.8-137		4/19/2012 16:57	

VOLATILES

Analysis Desc: 8260C Analysis, Soil — Preparation Method: SW-846 5035

Analytical Method: SW-846 8260B

Benzene	**1.2**	**ug/Kg**	**U**	**1**	3.0	1.2	4/17/2012 16:18	J
Ethylbenzene	**1.1**	**ug/Kg**	**U**	**1**	3.0	1.1	4/17/2012 16:18	J
Methyl tert-butyl Ether (MTBE)	**1.1**	**ug/Kg**	**U**	**1**	3.0	1.1	4/17/2012 16:18	J
Toluene	**1.9**	**ug/Kg**	**I**	**1**	3.0	1.4	4/17/2012 16:18	J
Xylene (Total)	**3.9**	**ug/Kg**	**U**	**1**	9.1	3.9	4/17/2012 16:18	J
1,2-Dichloroethane-d4 (S)	**105**	**%**		**1**	80-120		4/17/2012 16:18	
Toluene-d8 (S)	**102**	**%**		**1**	81-117		4/17/2012 16:18	
Bromofluorobenzene (S)	**110**	**%**		**1**	74-121		4/17/2012 16:18	

Lab ID: **J1203138008** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-4-5-SB-008** Date Collected: 04/12/12 17:11

Results for sample J1203138008 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Soil	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
TPH	**30**	**mg/Kg**	**I**	**1**	35	4.1	4/18/2012 19:35	J
o-Terphenyl (S)	**95**	**%**		**1**	62-109		4/18/2012 19:35	

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138008** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-4-5-SB-008** Date Collected: 04/12/12 17:11

Results for sample J1203138008 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Nonatricontane-C39 (S)	**77**	**%**		**1**	60-118		4/18/2012 19:35	
Analysis Desc: 8270C-SIM Analysis, Soil	Preparation Method: SW-846 3550B Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**5.8**	**ug/Kg**	**U**	**1**	8.2	5.8	4/19/2012 17:28	J
2-Methylnaphthalene	**5.8**	**ug/Kg**	**U**	**1**	8.2	5.8	4/19/2012 17:28	J
Acenaphthene	**5.9**	**ug/Kg**	**U**	**1**	8.2	5.9	4/19/2012 17:28	J
Acenaphthylene	**5.6**	**ug/Kg**	**U**	**1**	8.2	5.6	4/19/2012 17:28	J
Anthracene	**5.6**	**ug/Kg**	**U**	**1**	8.2	5.6	4/19/2012 17:28	J
Benzo[a]anthracene	**6.4**	**ug/Kg**	**U**	**1**	8.2	6.4	4/19/2012 17:28	J
Benzo[a]pyrene	**4.3**	**ug/Kg**	**U**	**1**	8.2	4.3	4/19/2012 17:28	J
Benzo[b]fluoranthene	**4.4**	**ug/Kg**	**U**	**1**	8.2	4.4	4/19/2012 17:28	J
Benzo[g,h,i]perylene	**5.5**	**ug/Kg**	**U**	**1**	8.2	5.5	4/19/2012 17:28	J
Benzo[k]fluoranthene	**6.8**	**ug/Kg**	**U**	**1**	8.2	6.8	4/19/2012 17:28	J
Chrysene	**7.0**	**ug/Kg**	**U**	**1**	8.2	7.0	4/19/2012 17:28	J
Dibenzo[a,h]anthracene	**4.1**	**ug/Kg**	**U**	**1**	8.2	4.1	4/19/2012 17:28	J
Fluoranthene	**5.8**	**ug/Kg**	**U**	**1**	8.2	5.8	4/19/2012 17:28	J
Fluorene	**5.7**	**ug/Kg**	**U**	**1**	8.2	5.7	4/19/2012 17:28	J
Indeno(1,2,3-cd)pyrene	**3.8**	**ug/Kg**	**U**	**1**	8.2	3.8	4/19/2012 17:28	J
Naphthalene	**4.9**	**ug/Kg**	**U**	**1**	8.2	4.9	4/19/2012 17:28	J
Phenanthrene	**6.0**	**ug/Kg**	**U**	**1**	8.2	6.0	4/19/2012 17:28	J
Pyrene	**6.9**	**ug/Kg**	**U**	**1**	8.2	6.9	4/19/2012 17:28	J
Decafluorobiphenyl (S)	**112**	**%**		**1**	44.8-137		4/19/2012 17:28	
VOLATILES								
Analysis Desc: 8260C Analysis, Soil	Preparation Method: SW-846 5035 Analytical Method: SW-846 8260B							
Benzene	**1.5**	**ug/Kg**	**U**	**1**	3.8	1.5	4/18/2012 02:50	J
Ethylbenzene	**1.4**	**ug/Kg**	**U**	**1**	3.8	1.4	4/18/2012 02:50	J
Methyl tert-butyl Ether (MTBE)	**1.4**	**ug/Kg**	**U**	**1**	3.8	1.4	4/18/2012 02:50	J
Toluene	**1.7**	**ug/Kg**	**U**	**1**	3.8	1.7	4/18/2012 02:50	J
Xylene (Total)	**4.8**	**ug/Kg**	**U**	**1**	11	4.8	4/18/2012 02:50	J
1,2-Dichloroethane-d4 (S)	**104**	**%**		**1**	80-120		4/18/2012 02:50	
Toluene-d8 (S)	**100**	**%**		**1**	81-117		4/18/2012 02:50	
Bromofluorobenzene (S)	**107**	**%**		**1**	74-121		4/18/2012 02:50	

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138009** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-2-3-SB-009** Date Collected: 04/12/12 17:16

Results for sample J1203138009 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Soil	Preparation Method: FL-PRO Analytical Method: FL-PRO							
TPH	**4.9**	**mg/Kg**	**U**	**1**	42	4.9	4/18/2012 20:06	J
o-Terphenyl (S)	**87**	**%**		**1**	62-109		4/18/2012 20:06	
Nonatricontane-C39 (S)	**81**	**%**		**1**	60-118		4/18/2012 20:06	
Analysis Desc: 8270C-SIM Analysis, Soil	Preparation Method: SW-846 3550B Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**7.0**	**ug/Kg**	**U**	**1**	9.9	7.0	4/19/2012 18:00	J
2-Methylnaphthalene	**7.0**	**ug/Kg**	**U**	**1**	9.9	7.0	4/19/2012 18:00	J
Acenaphthene	**7.1**	**ug/Kg**	**U**	**1**	9.9	7.1	4/19/2012 18:00	J
Acenaphthylene	**6.7**	**ug/Kg**	**U**	**1**	9.9	6.7	4/19/2012 18:00	J
Anthracene	**6.7**	**ug/Kg**	**U**	**1**	9.9	6.7	4/19/2012 18:00	J
Benzo[a]anthracene	**7.7**	**ug/Kg**	**U**	**1**	9.9	7.7	4/19/2012 18:00	J
Benzo[a]pyrene	**5.2**	**ug/Kg**	**U**	**1**	9.9	5.2	4/19/2012 18:00	J
Benzo[b]fluoranthene	**5.3**	**ug/Kg**	**U**	**1**	9.9	5.3	4/19/2012 18:00	J
Benzo[g,h,i]perylene	**6.7**	**ug/Kg**	**U**	**1**	9.9	6.7	4/19/2012 18:00	J
Benzo[k]fluoranthene	**8.3**	**ug/Kg**	**U**	**1**	9.9	8.3	4/19/2012 18:00	J
Chrysene	**8.5**	**ug/Kg**	**U**	**1**	9.9	8.5	4/19/2012 18:00	J
Dibenzo[a,h]anthracene	**5.0**	**ug/Kg**	**U**	**1**	9.9	5.0	4/19/2012 18:00	J
Fluoranthene	**7.0**	**ug/Kg**	**U**	**1**	9.9	7.0	4/19/2012 18:00	J
Fluorene	**6.9**	**ug/Kg**	**U**	**1**	9.9	6.9	4/19/2012 18:00	J
Indeno(1,2,3-cd)pyrene	**4.6**	**ug/Kg**	**U**	**1**	9.9	4.6	4/19/2012 18:00	J
Naphthalene	**6.0**	**ug/Kg**	**U**	**1**	9.9	6.0	4/19/2012 18:00	J
Phenanthrene	**7.2**	**ug/Kg**	**U**	**1**	9.9	7.2	4/19/2012 18:00	J
Pyrene	**8.4**	**ug/Kg**	**U**	**1**	9.9	8.4	4/19/2012 18:00	J
Decafluorobiphenyl (S)	**99**	**%**		**1**	44.8-137		4/19/2012 18:00	
VOLATILES								
Analysis Desc: 8260C Analysis, Soil	Preparation Method: SW-846 5035 Analytical Method: SW-846 8260B							
Benzene	**1.5**	**ug/Kg**	**U**	**1**	3.8	1.5	4/17/2012 22:20	J
Ethylbenzene	**1.4**	**ug/Kg**	**U**	**1**	3.8	1.4	4/17/2012 22:20	J
Methyl tert-butyl Ether (MTBE)	**1.4**	**ug/Kg**	**U**	**1**	3.8	1.4	4/17/2012 22:20	J
Toluene	**1.7**	**ug/Kg**	**U**	**1**	3.8	1.7	4/17/2012 22:20	J
Xylene (Total)	**4.8**	**ug/Kg**	**U**	**1**	11	4.8	4/17/2012 22:20	J
1,2-Dichloroethane-d4 (S)	**102**	**%**		**1**	80-120		4/17/2012 22:20	

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ANALYTICAL RESULTS

Workorder: J1203138 NSA Panama City

Lab ID: **J1203138009** Date Received: 04/14/12 10:00 Matrix: Soil

Sample ID: **PCY-0325-2-3-SB-009** Date Collected: 04/12/12 17:16

Results for sample J1203138009 are reported on a dry weight basis.

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Toluene-d8 (S)	**106**	**%**		**1**	81-117		4/17/2012 22:20	
Bromofluorobenzene (S)	**117**	**%**		**1**	74-121		4/17/2012 22:20	

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ANALYTICAL RESULTS QUALIFIERS

Workorder: J1203138 NSA Panama City

PARAMETER QUALIFIERS

U	The compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
[1]	Surrogate Diluted Out
J4	Estimated Result

LAB QUALIFIERS

J	DOH Certification #E82574(AEL-JAX)(FL NELAC Certification)

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QUALITY CONTROL DATA

Workorder: J1203138 NSA Panama City

QC Batch: MSVj/1364 Analysis Method: SW-846 8260B
QC Batch Method: SW-846 5035 Prepared: 04/16/2012 11:28
Associated Lab Samples: J1203138001, J1203138002, J1203138003, J1203138004

METHOD BLANK: 945302

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
VOLATILES				
Methyl tert-butyl Ether (MTBE)	ug/Kg	1.1	1.1	U
Benzene	ug/Kg	1.2	1.2	U
Toluene	ug/Kg	1.4	1.4	U
Ethylbenzene	ug/Kg	1.1	1.1	U
Xylene (Total)	ug/Kg	3.8	3.8	U
1,2-Dichloroethane-d4 (S)	%	110	80-120	
Toluene-d8 (S)	%	98	81-117	
Bromofluorobenzene (S)	%	105	74-121	

LABORATORY CONTROL SAMPLE: 945303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
VOLATILES						
Methyl tert-butyl Ether (MTBE)	ug/Kg	20	18	92	70-130	
Benzene	ug/Kg	20	19	93	70-130	
Toluene	ug/Kg	20	18	90	70-130	
Ethylbenzene	ug/Kg	20	19	95	70-130	
Xylene (Total)	ug/Kg	60	57	94	70-130	
1,2-Dichloroethane-d4 (S)	%			104	80-120	
Toluene-d8 (S)	%			98	81-117	
Bromofluorobenzene (S)	%			105	74-121	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945304 945305 Original: J1203124001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
VOLATILES											
Methyl tert-butyl Ether (MTBE)	ug/Kg	0	20	20	19	88	86	70-130	4	30	
Benzene	ug/Kg	0	20	22	21	98	96	70-130	5	30	
Toluene	ug/Kg	0	20	23	20	103	90	70-130	15	30	

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QUALITY CONTROL DATA

Workorder: J1203138 NSA Panama City

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 945304 945305 Original: J1203124001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Ethylbenzene	ug/Kg	0	20	24	21	106	96	70-130	12	30	
Xylene (Total)	ug/Kg	0	60	71	62	104	93	70-130	13	30	
1,2-Dichloroethane-d4 (S)	%	102				99	100	80-120	1		
Toluene-d8 (S)	%	100				99	98	81-117	3		
Bromofluorobenzene (S)	%	104				107	106	74-121	3		

QC Batch: MSVj/1368 Analysis Method: SW-846 8260B

QC Batch Method: SW-846 5035 Prepared: 04/17/2012 11:02

Associated Lab Samples: J1203138005, J1203138006, J1203138007, J1203138008, J1203138009

METHOD BLANK: 946364

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
VOLATILES				
Methyl tert-butyl Ether (MTBE)	ug/Kg	1.1	1.1	U
Benzene	ug/Kg	1.2	1.2	U
Toluene	ug/Kg	1.4	1.4	U
Ethylbenzene	ug/Kg	1.1	1.1	U
Xylene (Total)	ug/Kg	3.8	3.8	U
1,2-Dichloroethane-d4 (S)	%	115	80-120	
Toluene-d8 (S)	%	100	81-117	
Bromofluorobenzene (S)	%	105	74-121	

LABORATORY CONTROL SAMPLE: 946365

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
VOLATILES						
Methyl tert-butyl Ether (MTBE)	ug/Kg	20	20	101	70-130	
Benzene	ug/Kg	20	20	99	70-130	
Toluene	ug/Kg	20	20	99	70-130	
Ethylbenzene	ug/Kg	20	21	107	70-130	
Xylene (Total)	ug/Kg	60	61	102	70-130	
1,2-Dichloroethane-d4 (S)	%			101	80-120	
Toluene-d8 (S)	%			99	81-117	
Bromofluorobenzene (S)	%			103	74-121	

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QUALITY CONTROL DATA

Workorder: J1203138 NSA Panama City

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 946373 946374 Original: J1203138007

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
VOLATILES											
Methyl tert-butyl Ether (MTBE)	ug/Kg	0	19	19	19	90	87	70-130	1	30	
Benzene	ug/Kg	0	19	20	20	96	93	70-130	0	30	
Toluene	ug/Kg	1.8	19	19	19	79	78	70-130	3	30	
Ethylbenzene	ug/Kg	0	19	18	18	87	81	70-130	3	30	
Xylene (Total)	ug/Kg	0	58	54	52	86	79	70-130	4	30	
1,2-Dichloroethane-d4 (S)	%	105				103	104	80-120	5		
Toluene-d8 (S)	%	102				100	99	81-117	3		
Bromofluorobenzene (S)	%	110				106	108	74-121	5		

QC Batch: EXTj/1348 Analysis Method: SW-846 8270C (SIM)

QC Batch Method: SW-846 3550B Prepared: 04/18/2012 08:00

Associated Lab Samples: J1203138001, J1203138002, J1203138003, J1203138004, J1203138005, J1203138006, J1203138007, J1203138008,

METHOD BLANK: 946596

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
SEMIVOLATILES				
Naphthalene	ug/Kg	4.0	4.0	U
2-Methylnaphthalene	ug/Kg	4.7	4.7	U
1-Methylnaphthalene	ug/Kg	4.7	4.7	U
Acenaphthylene	ug/Kg	4.6	4.6	U
Acenaphthene	ug/Kg	4.8	4.8	U
Fluorene	ug/Kg	4.6	4.6	U
Phenanthrene	ug/Kg	4.9	4.9	U
Anthracene	ug/Kg	4.6	4.6	U
Fluoranthene	ug/Kg	4.7	4.7	U
Pyrene	ug/Kg	5.6	5.6	U
Benzo[a]anthracene	ug/Kg	5.2	5.2	U
Chrysene	ug/Kg	5.7	5.7	U
Benzo[b]fluoranthene	ug/Kg	3.6	3.6	U
Benzo[k]fluoranthene	ug/Kg	5.6	5.6	U
Benzo[a]pyrene	ug/Kg	3.5	3.5	U
Indeno(1,2,3-cd)pyrene	ug/Kg	3.1	3.1	U
Dibenzo[a,h]anthracene	ug/Kg	3.4	3.4	U
Benzo[g,h,i]perylene	ug/Kg	4.5	4.5	U
Decafluorobiphenyl (S)	%	111	44.8-137	

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QUALITY CONTROL DATA

Workorder: J1203138 NSA Panama City

LABORATORY CONTROL SAMPLE: 946597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
SEMIVOLATILES						
Naphthalene	ug/Kg	170	140	87	40-105	
2-Methylnaphthalene	ug/Kg	170	150	90	45-105	
1-Methylnaphthalene	ug/Kg	170	150	90	45-105	
Acenaphthylene	ug/Kg	170	140	87	45-105	
Acenaphthene	ug/Kg	170	140	86	45-110	
Fluorene	ug/Kg	170	150	91	50-110	
Phenanthrene	ug/Kg	170	170	100	50-110	
Anthracene	ug/Kg	170	170	104	55-105	
Fluoranthene	ug/Kg	170	190	112	55-115	
Pyrene	ug/Kg	170	170	99	45-125	
Benzo[a]anthracene	ug/Kg	170	180	105	50-110	
Chrysene	ug/Kg	170	170	105	55-110	
Benzo[b]fluoranthene	ug/Kg	170	170	104	45-115	
Benzo[k]fluoranthene	ug/Kg	170	160	99	45-125	
Benzo[a]pyrene	ug/Kg	170	180	109	50-110	
Indeno(1,2,3-cd)pyrene	ug/Kg	170	190	116	40-120	
Dibenzo[a,h]anthracene	ug/Kg	170	200	119	40-125	
Benzo[g,h,i]perylene	ug/Kg	170	190	116	40-125	
Decafluorobiphenyl (S)	%			103	44.8-137	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 946598 946599 Original: J1203138001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
SEMIVOLATILES											
Naphthalene	ug/Kg	360	200	150	140	-110	-116	40-105	9	30	
2-Methylnaphthalene	ug/Kg	140	200	310	310	80	79	45-105	0	30	
1-Methylnaphthalene	ug/Kg	130	200	320	290	90	74	45-105	11	30	
Acenaphthylene	ug/Kg	0	200	230	190	108	88	45-105	21	30	
Acenaphthene	ug/Kg	0	200	230	220	111	106	45-110	5	30	
Fluorene	ug/Kg	110	200	330	310	101	91	50-110	7	30	
Phenanthrene	ug/Kg	0	200	240	220	113	107	50-110	6	30	
Anthracene	ug/Kg	0	200	260	240	125	116	55-105	8	30	
Fluoranthene	ug/Kg	0	200	250	250	121	121	55-115	0	30	
Pyrene	ug/Kg	0	200	220	210	106	102	45-125	4	30	
Benzo[a]anthracene	ug/Kg	0	200	250	230	118	110	50-110	8	30	
Chrysene	ug/Kg	0	200	250	230	117	109	55-110	8	30	
Benzo[b]fluoranthene	ug/Kg	0	200	240	220	116	104	45-115	11	30	
Benzo[k]fluoranthene	ug/Kg	0	200	240	220	113	104	45-125	8	30	
Benzo[a]pyrene	ug/Kg	0	200	250	220	116	107	50-110	9	30	

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QUALITY CONTROL DATA

Workorder: J1203138 NSA Panama City

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 946598 946599 Original: J1203138001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Indeno(1,2,3-cd)pyrene	ug/Kg	0	200	270	250	127	120	40-120	6	30	
Dibenzo[a,h]anthracene	ug/Kg	0	200	280	250	131	119	40-125	10	30	
Benzo[g,h,i]perylene	ug/Kg	0	200	270	260	129	123	40-125	5	30	
Decafluorobiphenyl (S)	%	136				115	110	44.8-137	4		

QC Batch: EXTj/1349 Analysis Method: FL-PRO

QC Batch Method: FL-PRO Prepared: 04/18/2012 08:00

Associated Lab Samples: J1203138001, J1203138002, J1203138003, J1203138004, J1203138005, J1203138006, J1203138007, J1203138008,

METHOD BLANK: 946608

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
SEMIVOLATILES				
TPH	mg/Kg	4.0	4.0	U
o-Terphenyl (S)	%	96	62-109	
Nonatricontane-C39 (S)	%	89	60-118	

LABORATORY CONTROL SAMPLE: 946609

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
SEMIVOLATILES						
TPH	mg/Kg	34	30	89	63-153	
o-Terphenyl (S)	%			98	62-109	
Nonatricontane-C39 (S)	%			82	60-118	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 946610 946611 Original: J1203138001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
SEMIVOLATILES											
TPH	mg/Kg	9900	34	1100	1100	-25900	-25900	62-204	2	25	
o-Terphenyl (S)	%	0				107	108	62-109	1	25	
Nonatricontane-C39 (S)	%	0				83	81	60-118	2	25	

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Advanced Environmental Laboratories, Inc
6601 Southpoint Parkway
Jacksonville, FL 32216
Phone: (904)363-9350
Fax: (904)363-9354

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: J1203138 NSA Panama City

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
J1203138001	PCY-0325-4-5-SB-001	SW-846 5035	MSVj/1364	SW-846 8260B	MSVj/1365
J1203138002	PCY-0325-4-6-SB-002	SW-846 5035	MSVj/1364	SW-846 8260B	MSVj/1365
J1203138003	PCY-0325-3-4-SB-003	SW-846 5035	MSVj/1364	SW-846 8260B	MSVj/1365
J1203138004	PCY-0325-4-6-SB-004	SW-846 5035	MSVj/1364	SW-846 8260B	MSVj/1365
J1203138005	PCY-0325-3-4-SB-005	SW-846 5035	MSVj/1368	SW-846 8260B	MSVj/1369
J1203138006	PCY-0325-2-3-SB-006	SW-846 5035	MSVj/1368	SW-846 8260B	MSVj/1369
J1203138007	PCY-0325-0-1-SB-007	SW-846 5035	MSVj/1368	SW-846 8260B	MSVj/1369
J1203138008	PCY-0325-4-5-SB-008	SW-846 5035	MSVj/1368	SW-846 8260B	MSVj/1369
J1203138009	PCY-0325-2-3-SB-009	SW-846 5035	MSVj/1368	SW-846 8260B	MSVj/1369
J1203138001	PCY-0325-4-5-SB-001	SW-846 3550B	EXTj/1348	SW-846 8270C (SIM)	MSSj/1149
J1203138002	PCY-0325-4-6-SB-002	SW-846 3550B	EXTj/1348	SW-846 8270C (SIM)	MSSj/1149
J1203138003	PCY-0325-3-4-SB-003	SW-846 3550B	EXTj/1348	SW-846 8270C (SIM)	MSSj/1149
J1203138004	PCY-0325-4-6-SB-004	SW-846 3550B	EXTj/1348	SW-846 8270C (SIM)	MSSj/1149
J1203138005	PCY-0325-3-4-SB-005	SW-846 3550B	EXTj/1348	SW-846 8270C (SIM)	MSSj/1149
J1203138006	PCY-0325-2-3-SB-006	SW-846 3550B	EXTj/1348	SW-846 8270C (SIM)	MSSj/1149
J1203138007	PCY-0325-0-1-SB-007	SW-846 3550B	EXTj/1348	SW-846 8270C (SIM)	MSSj/1149
J1203138008	PCY-0325-4-5-SB-008	SW-846 3550B	EXTj/1348	SW-846 8270C (SIM)	MSSj/1149
J1203138009	PCY-0325-2-3-SB-009	SW-846 3550B	EXTj/1348	SW-846 8270C (SIM)	MSSj/1149
J1203138001	PCY-0325-4-5-SB-001	FL-PRO	EXTj/1349	FL-PRO	GCSj/1250
J1203138002	PCY-0325-4-6-SB-002	FL-PRO	EXTj/1349	FL-PRO	GCSj/1250
J1203138003	PCY-0325-3-4-SB-003	FL-PRO	EXTj/1349	FL-PRO	GCSj/1250
J1203138004	PCY-0325-4-6-SB-004	FL-PRO	EXTj/1349	FL-PRO	GCSj/1250
J1203138005	PCY-0325-3-4-SB-005	FL-PRO	EXTj/1349	FL-PRO	GCSj/1250
J1203138006	PCY-0325-2-3-SB-006	FL-PRO	EXTj/1349	FL-PRO	GCSj/1250
J1203138007	PCY-0325-0-1-SB-007	FL-PRO	EXTj/1349	FL-PRO	GCSj/1250
J1203138008	PCY-0325-4-5-SB-008	FL-PRO	EXTj/1349	FL-PRO	GCSj/1250
J1203138009	PCY-0325-2-3-SB-009	FL-PRO	EXTj/1349	FL-PRO	GCSj/1250

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Page 1 of 1

LAB NUMBER **J1203138**

CLIENT NAME: SACAL Env. & Management
ADDRESS: 2153 Vineville Ave.
Macon, GA 31204
PHONE: (478) 745-9352
FAX: (478) 743-7686
CONTACT: Ed Glinski
SAMPLED BY: Ed Glinski

TURN AROUND TIME:
☑ STANDARD _____ ☐ RUSH _____

PROJECT NAME: NSA Panama City
P.O. NUMBER/PROJECT NUMBER:
PROJECT LOCATION: Panama City, FL

REMARKS/SPECIAL INSTRUCTIONS:
* Please email results to edward.glinski@sacalglobal.com

*Hold samples for CWG pending TRPH results

SAMPLE ID	SAMPLE DESCRIPTION	Grab Comp	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. COUNT	PRESERVATION	BOTTLE SIZE & TYPE	8260 BTEX/MTBE	8270 PAHs	TRPH - FLPRO	TPH - CWG*						LABORATORY I.D. NUMBER
								ANALYSIS REQUIRED	I	I	I	I						
PCY-0325	-4-5-SB-001	G	4/12/12	1436	SO	6			X	X	X							001
PCY-0325	-4-6-SB-002	G	4/12/12	1446	SO	6			X	X	X							002
PCY-0325	-3-4-SB-003	G	4/12/12	1454	SO	6			X	X	X							003
PCY-0325	-4-6-SB-004	G	4/12/12	1458	SO	6			X	X	X							004
PCY-0325	-3-4-SB-005	G	4/12/12	1645	SO	6			X	X	X							005
PCY-0325	-2-3-SB-006	G	4/12/12	1646	SO	6			X	X	X							006
PCY-0325	-0-1-SB-007	G	4/12/12	1655	SO	6			X	X	X							007
PCY-0325	-4-5-SB-008	G	4/12/12	1711	SO	6			X	X	X							008
PCY-0325	-2-3-SB-009	G	4/12/12	1716	SO	6			X	X	X							009

Matrix Code: WW = wastewater SW = surface water GW = ground water DW = drinking water O = oil A = air SO = soil SL = sludge

Preservation Code: I = ice H=(HCl) S = (H2SO4) N = (HNO3) T = (Sodium Thiosulfate)

Received on Ice ☒ Yes ☐ No ☒ Temp taken from sample ☐ Temp from blank ☐ Where required, pH checked

Temperature when received 2 (in degrees celcius)

Form revised 2/8/08

Device used for measuring Temp by unique identifier (circle IR temp gun used) J : 9A G: LT-1 LT-2 T: 10A A: 3A

	Relinquished by:	Date	Time	Received by:	Date	Time
1	[signature]	4/13/12	1435	[signature]	4/13/12	1435
2	[signature]	4/13/12	1815	[signature]		
3	[signature]	4-14-12	10:00	[signature]	4-14-12	10:00
4						

FOR DRINKING WATER USE:
(When PWS Information not otherwise supplied) PWS ID: _____
Contact Person: _____ Phone: _____
Supplier of Water: _____
Site-Address: _____

Tetra Tech, Inc. **INTERNAL CORRESPONDENCE**

TO:	**G. WALKER**	**DATE:**	**APRIL 11, 2013**
FROM:	**MICHELLE ALLEN**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOC/PAH/TPH**
CTO JM73, NSA PANAMA CITY
SDG J1203184

SAMPLES: 10/Aqueous/VOC/PAH/TPH

EB	FD	PCY-0325-GW-007
PCY-0325-GW-008	PCY-0325-GW-010	PCY-0325-GW-015
PCY-0325-GW-019	PCY-0325-GW-021	PCY-0325-GW-023
PCY-0325-GW-026		

OVERVIEW

The sample set for NSA Panama City SDG J1203184 consisted of nine (9) aqueous environmental samples and one (1) equipment blank. All ten (10) samples were analyzed for select volatile organic compounds (VOC), polynuclear aromatic hydrocarbons (PAH), and total petroleum hydrocarbons (TPH). One field duplicate sample pair was associated with this Sample Delivery Group (SDG): FD/PCY-0325-GW-023.

The samples were collected by SACAL on April 13 and 14, 2012 and analyzed by Advanced Environmental Laboratories, Inc. All analyses were conducted in accordance with SW846 Methods 8260B, 8270C SIM, and FL-PRO analytical and reporting protocols.

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

* • Data Completeness
* • Holding Times/Sample Preservation
* • Laboratory Method Blank Results
* • Surrogate Spike Recoveries
* • Laboratory Control Sample Results
* • Matrix Spike/Matrix Spike Duplicate Results
* • Field Duplicate Precision
* • Detection Limits

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

VOC

No issues were identified.

PAH

No issues were identified.

TPH

No issues were identified.

NOTES

The following samples were analyzed at dilutions:

Sample	Fraction	Dilution
PCY-0325-GW-023	VOC	3X
FD	VOC	3X

The reporting limits of the non-detected results were elevated in these samples.

Detected results reported below the Practical Quantitation Limit (PQL) but above the Method Detection Limit (MDL) were qualified as estimated, (J). Non-detected results were reported to the MDL.

The text of this report is formatted to address only the data provided by Advanced Environmental Laboratories, Inc. Full data packages including raw data were not provided to the data reviewer.

EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: Two samples were diluted for the VOC and TPH fractions. Detected results reported below the PQL but above the MDL were qualified as estimated.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October, 1999), SW846 Methods 8260B, 8270C SIM, and FL-PRO analytical and reporting protocols, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (October, 2010). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech, Inc.
Michelle L. Allen
Chemist/Data Validator

Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Quality Assurance Manager

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 04292	NSAMPLE	EB			FD			PCY-0325-GW-007			PCY-0325-GW-008		
SDG: J1203184	LAB_ID	J1203184010			J1203184009			J1203184005			J1203184006		
FRACTION: OV	SAMP_DATE	4/14/2012			4/14/2012			4/14/2012			4/14/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				PCY-0325-GW-023								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZENE		0.21	U		0.63	U		0.21	U		0.63	U	
ETHYLBENZENE		0.24	U		0.72	U		0.24	U		0.72	U	
METHYL TERT-BUTYL ETHER		0.32	U		0.96	U		0.32	U		0.96	U	
TOLUENE		0.28	U		0.84	U		0.28	U		0.84	U	
TOTAL XYLENES		0.62	U		1.9	U		0.62	U		1.9	U	

PROJ_NO: 04292	NSAMPLE	PCY-0325-GW-010			PCY-0325-GW-015			PCY-0325-GW-019			PCY-0325-GW-021		
SDG: J1203184	LAB_ID	J1203184003			J1203184004			J1203184002			J1203184001		
FRACTION: OV	SAMP_DATE	4/13/2012			4/13/2012			4/13/2012			4/13/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZENE		0.21	U		0.21	U		0.21	U		0.21	U	
ETHYLBENZENE		0.24	U		0.24	U		0.24	U		0.24	U	
METHYL TERT-BUTYL ETHER		0.32	U		0.32	U		0.32	U		0.32	U	
TOLUENE		0.28	U		0.28	U		0.28	U		0.28	U	
TOTAL XYLENES		0.62	U		0.62	U		0.62	U		0.62	U	

PROJ_NO: 04292	NSAMPLE	PCY-0325-GW-023			PCY-0325-GW-026		
SDG: J1203184	LAB_ID	J1203184008			J1203184007		
FRACTION: OV	SAMP_DATE	4/14/2012			4/14/2012		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZENE		0.63	U		0.21	U	
ETHYLBENZENE		0.72	U		0.24	U	
METHYL TERT-BUTYL ETHER		0.96	U		0.32	U	
TOLUENE		0.84	U		0.28	U	
TOTAL XYLENES		1.9	U		0.62	U	

PROJ_NO: 04292	NSAMPLE	EB			FD			PCY-0325-GW-007			PCY-0325-GW-008		
SDG: J1203184	LAB_ID	J1203184010			J1203184009			J1203184005			J1203184006		
FRACTION: PAH	SAMP_DATE	4/14/2012			4/14/2012			4/14/2012			4/14/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				PCY-0325-GW-023								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1-METHYLNAPHTHALENE		0.018	U		3.8			0.018	U		0.74		
2-METHYLNAPHTHALENE		0.045	U		3.5			0.045	U		0.68		
ACENAPHTHENE		0.034	U		0.18	J	P	0.034	U		0.36		
ACENAPHTHYLENE		0.03	U		0.03	U		0.03	U		0.03	U	
ANTHRACENE		0.028	U		0.74			0.028	U		0.028	U	
BENZO(A)ANTHRACENE		0.026	U		0.026	U		0.026	U		0.026	U	
BENZO(A)PYRENE		0.024	U		0.024	U		0.024	U		0.024	U	
BENZO(B)FLUORANTHENE		0.04	U		0.04	U		0.04	U		0.04	U	
BENZO(G,H,I)PERYLENE		0.034	U		0.034	U		0.034	U		0.034	U	
BENZO(K)FLUORANTHENE		0.058	U		0.058	U		0.058	U		0.058	U	
CHRYSENE		0.041	U		0.041	U		0.041	U		0.041	U	
DIBENZO(A,H)ANTHRACENE		0.042	U		0.042	U		0.042	U		0.042	U	
FLUORANTHENE		0.027	U		0.027	U		0.027	U		0.027	U	
FLUORENE		0.03	U		0.19	J	P	0.03	U		0.03	U	
INDENO(1,2,3-CD)PYRENE		0.048	U		0.048	U		0.048	U		0.048	U	
NAPHTHALENE		0.053	U		1.6			0.053	U		0.53		
PHENANTHRENE		0.036	U		0.036	U		0.036	U		0.036	U	
PYRENE		0.033	U		0.033	U		0.033	U		0.033	U	

PROJ_NO: 04292	NSAMPLE	PCY-0325-GW-010			PCY-0325-GW-015			PCY-0325-GW-019			PCY-0325-GW-021		
SDG: J1203184	LAB_ID	J1203184003			J1203184004			J1203184002			J1203184001		
FRACTION: PAH	SAMP_DATE	4/13/2012			4/13/2012			4/13/2012			4/13/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1-METHYLNAPHTHALENE		0.018	U		0.018	U		0.018	U		0.018	U	
2-METHYLNAPHTHALENE		0.045	U		0.045	U		0.045	U		0.045	U	
ACENAPHTHENE		0.034	U		0.2			0.034	U		0.034	U	
ACENAPHTHYLENE		0.03	U		0.03	U		0.03	U		0.03	U	
ANTHRACENE		0.028	U		0.028	U		0.028	U		0.028	U	
BENZO(A)ANTHRACENE		0.026	U		0.026	U		0.026	U		0.026	U	
BENZO(A)PYRENE		0.024	U		0.024	U		0.024	U		0.024	U	
BENZO(B)FLUORANTHENE		0.04	U		0.04	U		0.04	U		0.04	U	
BENZO(G,H,I)PERYLENE		0.034	U		0.034	U		0.034	U		0.034	U	
BENZO(K)FLUORANTHENE		0.058	U		0.058	U		0.058	U		0.058	U	
CHRYSENE		0.041	U		0.041	U		0.041	U		0.041	U	
DIBENZO(A,H)ANTHRACENE		0.042	U		0.042	U		0.042	U		0.042	U	
FLUORANTHENE		0.027	U		0.027	U		0.027	U		0.027	U	
FLUORENE		0.03	U		0.16	J	P	0.03	U		0.03	U	
INDENO(1,2,3-CD)PYRENE		0.048	U		0.048	U		0.048	U		0.048	U	
NAPHTHALENE		0.053	U		0.18	J	P	0.053	U		0.053	U	
PHENANTHRENE		0.036	U		0.036	U		0.036	U		0.036	U	
PYRENE		0.033	U		0.033	U		0.033	U		0.033	U	

PROJ_NO: 04292	NSAMPLE	PCY-0325-GW-023			PCY-0325-GW-026		
SDG: J1203184	LAB_ID	J1203184008			J1203184007		
FRACTION: PAH	SAMP_DATE	4/14/2012			4/14/2012		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1-METHYLNAPHTHALENE		4.3			0.018	U	
2-METHYLNAPHTHALENE		3.8			0.045	U	
ACENAPHTHENE		0.15	J	P	0.034	U	
ACENAPHTHYLENE		0.03	U		0.03	U	
ANTHRACENE		0.75			0.028	U	
BENZO(A)ANTHRACENE		0.026	U		0.026	U	
BENZO(A)PYRENE		0.024	U		0.024	U	
BENZO(B)FLUORANTHENE		0.04	U		0.04	U	
BENZO(G,H,I)PERYLENE		0.034	U		0.034	U	
BENZO(K)FLUORANTHENE		0.058	U		0.058	U	
CHRYSENE		0.041	U		0.041	U	
DIBENZO(A,H)ANTHRACENE		0.042	U		0.042	U	
FLUORANTHENE		0.027	U		0.027	U	
FLUORENE		0.15	J	P	0.03	U	
INDENO(1,2,3-CD)PYRENE		0.048	U		0.048	U	
NAPHTHALENE		1.7			0.053	U	
PHENANTHRENE		0.036	U		0.036	U	
PYRENE		0.033	U		0.033	U	

PROJ_NO: 04292	NSAMPLE	EB			FD			PCY-0325-GW-007			PCY-0325-GW-008		
SDG: J1203184	LAB_ID	J1203184010			J1203184009			J1203184005			J1203184006		
FRACTION: PET	SAMP_DATE	4/14/2012			4/14/2012			4/14/2012			4/14/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				PCY-0325-GW-023								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL PETROLEUM HYDROCARBONS		100	U		8300			350	J	P	5600		

PROJ_NO: 04292	NSAMPLE	PCY-0325-GW-010			PCY-0325-GW-015			PCY-0325-GW-019			PCY-0325-GW-021		
SDG: J1203184	LAB_ID	J1203184003			J1203184004			J1203184002			J1203184001		
FRACTION: PET	SAMP_DATE	4/13/2012			4/13/2012			4/13/2012			4/13/2012		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL PETROLEUM HYDROCARBONS		100	U		1600			100	U		100	U	

PROJ_NO: 04292	NSAMPLE	PCY-0325-GW-023			PCY-0325-GW-026		
SDG: J1203184	LAB_ID	J1203184008			J1203184007		
FRACTION: PET	SAMP_DATE	4/14/2012			4/14/2012		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL PETROLEUM HYDROCARBONS		6500			100	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184001** Date Received: 04/17/12 09:00 Matrix: Water

Sample ID: **021** PCY-0325-GW-021 Date Collected: 04/13/12 14:52

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Water	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
TPH	**100**	**ug/L**	**U**	**1**	420	100	4/19/2012 16:37	J
o-Terphenyl (S)	**90**	**%**		**1**	82-142		4/19/2012 16:37	
Nonatricontane-C39 (S)	**71**	**%**		**1**	42-193		4/19/2012 16:37	
Analysis Desc: 8270C-SIM Analysis, Water	Preparation Method: SW-846 3510C							
	Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**0.018**	**ug/L**	**U**	**1**	0.20	0.018	4/20/2012 16:11	J
2-Methylnaphthalene	**0.045**	**ug/L**	**U**	**1**	0.20	0.045	4/20/2012 16:11	J
Acenaphthene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 16:11	J
Acenaphthylene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 16:11	J
Anthracene	**0.028**	**ug/L**	**U**	**1**	0.20	0.028	4/20/2012 16:11	J
Benzo[a]anthracene	**0.026**	**ug/L**	**U**	**1**	0.20	0.026	4/20/2012 16:11	J
Benzo[a]pyrene	**0.024**	**ug/L**	**U**	**1**	0.20	0.024	4/20/2012 16:11	J
Benzo[b]fluoranthene	**0.040**	**ug/L**	**U**	**1**	0.20	0.040	4/20/2012 16:11	J
Benzo[g,h,i]perylene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 16:11	J
Benzo[k]fluoranthene	**0.058**	**ug/L**	**U**	**1**	0.20	0.058	4/20/2012 16:11	J
Chrysene	**0.041**	**ug/L**	**U**	**1**	0.20	0.041	4/20/2012 16:11	J
Dibenzo[a,h]anthracene	**0.042**	**ug/L**	**U**	**1**	0.20	0.042	4/20/2012 16:11	J
Fluoranthene	**0.027**	**ug/L**	**U**	**1**	0.20	0.027	4/20/2012 16:11	J
Fluorene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 16:11	J
Indeno(1,2,3-cd)pyrene	**0.048**	**ug/L**	**U**	**1**	0.20	0.048	4/20/2012 16:11	J
Naphthalene	**0.053**	**ug/L**	**U**	**1**	0.20	0.053	4/20/2012 16:11	J
Phenanthrene	**0.036**	**ug/L**	**U**	**1**	0.20	0.036	4/20/2012 16:11	J
Pyrene	**0.033**	**ug/L**	**U**	**1**	0.20	0.033	4/20/2012 16:11	J
Decafluorobiphenyl (S)	**95**	**%**		**1**	21-122		4/20/2012 16:11	
VOLATILES								
Analysis Desc: 8260C Analysis, Water	Preparation Method: SW-846 5030B							
	Analytical Method: SW-846 8260B							
Benzene	**0.21**	**ug/L**	**U**	**1**	1.0	0.21	4/18/2012 21:21	J
Ethylbenzene	**0.24**	**ug/L**	**U**	**1**	1.0	0.24	4/18/2012 21:21	J
Methyl tert-butyl Ether (MTBE)	**0.32**	**ug/L**	**U**	**1**	1.0	0.32	4/18/2012 21:21	J
Toluene	**0.28**	**ug/L**	**U**	**1**	1.0	0.28	4/18/2012 21:21	J
Xylene (Total)	**0.62**	**ug/L**	**U**	**1**	3.0	0.62	4/18/2012 21:21	J
1,2-Dichloroethane-d4 (S)	**102**	**%**		**1**	80-120		4/18/2012 21:21	

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184001** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **021** Date Collected: 04/13/12 14:52

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Toluene-d8 (S)	**102**	**%**		**1**	88-110		4/18/2012 21:21	
Bromofluorobenzene (S)	**102**	**%**		**1**	86-115		4/18/2012 21:21	

Lab ID: **J1203184002** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **019** PCY_0325-GW-019 Date Collected: 04/13/12 16:10

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Water	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
TPH	**100**	**ug/L**	**U**	**1**	420	100	4/19/2012 17:08	J
o-Terphenyl (S)	**91**	**%**		**1**	82-142		4/19/2012 17:08	
Nonatricontane-C39 (S)	**68**	**%**		**1**	42-193		4/19/2012 17:08	
Analysis Desc: 8270C-SIM Analysis, Water	Preparation Method: SW-846 3510C							
	Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**0.018**	**ug/L**	**U**	**1**	0.20	0.018	4/20/2012 16:42	J
2-Methylnaphthalene	**0.045**	**ug/L**	**U**	**1**	0.20	0.045	4/20/2012 16:42	J
Acenaphthene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 16:42	J
Acenaphthylene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 16:42	J
Anthracene	**0.028**	**ug/L**	**U**	**1**	0.20	0.028	4/20/2012 16:42	J
Benzo[a]anthracene	**0.026**	**ug/L**	**U**	**1**	0.20	0.026	4/20/2012 16:42	J
Benzo[a]pyrene	**0.024**	**ug/L**	**U**	**1**	0.20	0.024	4/20/2012 16:42	J
Benzo[b]fluoranthene	**0.040**	**ug/L**	**U**	**1**	0.20	0.040	4/20/2012 16:42	J
Benzo[g,h,i]perylene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 16:42	J
Benzo[k]fluoranthene	**0.058**	**ug/L**	**U**	**1**	0.20	0.058	4/20/2012 16:42	J
Chrysene	**0.041**	**ug/L**	**U**	**1**	0.20	0.041	4/20/2012 16:42	J
Dibenzo[a,h]anthracene	**0.042**	**ug/L**	**U**	**1**	0.20	0.042	4/20/2012 16:42	J
Fluoranthene	**0.027**	**ug/L**	**U**	**1**	0.20	0.027	4/20/2012 16:42	J
Fluorene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 16:42	J
Indeno(1,2,3-cd)pyrene	**0.048**	**ug/L**	**U**	**1**	0.20	0.048	4/20/2012 16:42	J
Naphthalene	**0.053**	**ug/L**	**U**	**1**	0.20	0.053	4/20/2012 16:42	J
Phenanthrene	**0.036**	**ug/L**	**U**	**1**	0.20	0.036	4/20/2012 16:42	J
Pyrene	**0.033**	**ug/L**	**U**	**1**	0.20	0.033	4/20/2012 16:42	J

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184002** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **019** Date Collected: 04/13/12 16:10

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Decafluorobiphenyl (S)	**89**	**%**		**1**	21-122		4/20/2012 16:42	
VOLATILES								
Analysis Desc: 8260C Analysis, Water	Preparation Method: SW-846 5030B							
	Analytical Method: SW-846 8260B							
Benzene	**0.21**	**ug/L**	**U**	**1**	1.0	0.21	4/18/2012 22:06	J
Ethylbenzene	**0.24**	**ug/L**	**U**	**1**	1.0	0.24	4/18/2012 22:06	J
Methyl tert-butyl Ether (MTBE)	**0.32**	**ug/L**	**U**	**1**	1.0	0.32	4/18/2012 22:06	J
Toluene	**0.28**	**ug/L**	**U**	**1**	1.0	0.28	4/18/2012 22:06	J
Xylene (Total)	**0.62**	**ug/L**	**U**	**1**	3.0	0.62	4/18/2012 22:06	J
1,2-Dichloroethane-d4 (S)	**101**	**%**		**1**	80-120		4/18/2012 22:06	
Toluene-d8 (S)	**102**	**%**		**1**	88-110		4/18/2012 22:06	
Bromofluorobenzene (S)	**99**	**%**		**1**	86-115		4/18/2012 22:06	

Lab ID: **J1203184003** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **010** PCY-0525-GW-010 Date Collected: 04/13/12 17:51

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Water	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
TPH	**100**	**ug/L**	**U**	**1**	420	100	4/19/2012 17:40	J
o-Terphenyl (S)	**91**	**%**		**1**	82-142		4/19/2012 17:40	
Nonatricontane-C39 (S)	**74**	**%**		**1**	42-193		4/19/2012 17:40	
Analysis Desc: 8270C-SIM Analysis, Water	Preparation Method: SW-846 3510C							
	Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**0.018**	**ug/L**	**U**	**1**	0.20	0.018	4/20/2012 17:14	J
2-Methylnaphthalene	**0.045**	**ug/L**	**U**	**1**	0.20	0.045	4/20/2012 17:14	J
Acenaphthene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 17:14	J
Acenaphthylene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 17:14	J
Anthracene	**0.028**	**ug/L**	**U**	**1**	0.20	0.028	4/20/2012 17:14	J
Benzo[a]anthracene	**0.026**	**ug/L**	**U**	**1**	0.20	0.026	4/20/2012 17:14	J
Benzo[a]pyrene	**0.024**	**ug/L**	**U**	**1**	0.20	0.024	4/20/2012 17:14	J

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184003** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **010** Date Collected: 04/13/12 17:51

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Benzo[b]fluoranthene	**0.040**	**ug/L**	**U**	**1**	0.20	0.040	4/20/2012 17:14	J
Benzo[g,h,i]perylene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 17:14	J
Benzo[k]fluoranthene	**0.058**	**ug/L**	**U**	**1**	0.20	0.058	4/20/2012 17:14	J
Chrysene	**0.041**	**ug/L**	**U**	**1**	0.20	0.041	4/20/2012 17:14	J
Dibenzo[a,h]anthracene	**0.042**	**ug/L**	**U**	**1**	0.20	0.042	4/20/2012 17:14	J
Fluoranthene	**0.027**	**ug/L**	**U**	**1**	0.20	0.027	4/20/2012 17:14	J
Fluorene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 17:14	J
Indeno(1,2,3-cd)pyrene	**0.048**	**ug/L**	**U**	**1**	0.20	0.048	4/20/2012 17:14	J
Naphthalene	**0.053**	**ug/L**	**U**	**1**	0.20	0.053	4/20/2012 17:14	J
Phenanthrene	**0.036**	**ug/L**	**U**	**1**	0.20	0.036	4/20/2012 17:14	J
Pyrene	**0.033**	**ug/L**	**U**	**1**	0.20	0.033	4/20/2012 17:14	J
Decafluorobiphenyl (S)	**97**	**%**		**1**	21-122		4/20/2012 17:14	

VOLATILES

Analysis Desc: 8260C Analysis, Water Preparation Method: SW-846 5030B

Analytical Method: SW-846 8260B

Benzene	**0.21**	**ug/L**	**U**	**1**	1.0	0.21	4/18/2012 22:52	J
Ethylbenzene	**0.24**	**ug/L**	**U**	**1**	1.0	0.24	4/18/2012 22:52	J
Methyl tert-butyl Ether (MTBE)	**0.32**	**ug/L**	**U**	**1**	1.0	0.32	4/18/2012 22:52	J
Toluene	**0.28**	**ug/L**	**U**	**1**	1.0	0.28	4/18/2012 22:52	J
Xylene (Total)	**0.62**	**ug/L**	**U**	**1**	3.0	0.62	4/18/2012 22:52	J
1,2-Dichloroethane-d4 (S)	**101**	**%**		**1**	80-120		4/18/2012 22:52	
Toluene-d8 (S)	**102**	**%**		**1**	88-110		4/18/2012 22:52	
Bromofluorobenzene (S)	**103**	**%**		**1**	86-115		4/18/2012 22:52	

Lab ID: **J1203184004** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **015** PCY-0325-GW-015 Date Collected: 04/13/12 18:54

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Water		Preparation Method: FL-PRO						
		Analytical Method: FL-PRO						
TPH	**1600**	**ug/L**		**1**	420	100	4/19/2012 18:11	J
o-Terphenyl (S)	**103**	**%**		**1**	82-142		4/19/2012 18:11	

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184004** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **015** Date Collected: 04/13/12 18:54

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Nonatricontane-C39 (S)	**72**	%		1	42-193		4/19/2012 18:11	
Analysis Desc: 8270C-SIM Analysis, Water	Preparation Method: SW-846 3510C							
	Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**0.018**	ug/L	U	1	0.20	0.018	4/20/2012 17:45	J
2-Methylnaphthalene	**0.045**	ug/L	U	1	0.20	0.045	4/20/2012 17:45	J
Acenaphthene	**0.20**	ug/L		1	0.20	0.034	4/20/2012 17:45	J
Acenaphthylene	**0.030**	ug/L	U	1	0.20	0.030	4/20/2012 17:45	J
Anthracene	**0.028**	ug/L	U	1	0.20	0.028	4/20/2012 17:45	J
Benzo[a]anthracene	**0.026**	ug/L	U	1	0.20	0.026	4/20/2012 17:45	J
Benzo[a]pyrene	**0.024**	ug/L	U	1	0.20	0.024	4/20/2012 17:45	J
Benzo[b]fluoranthene	**0.040**	ug/L	U	1	0.20	0.040	4/20/2012 17:45	J
Benzo[g,h,i]perylene	**0.034**	ug/L	U	1	0.20	0.034	4/20/2012 17:45	J
Benzo[k]fluoranthene	**0.058**	ug/L	U	1	0.20	0.058	4/20/2012 17:45	J
Chrysene	**0.041**	ug/L	U	1	0.20	0.041	4/20/2012 17:45	J
Dibenzo[a,h]anthracene	**0.042**	ug/L	U	1	0.20	0.042	4/20/2012 17:45	J
Fluoranthene	**0.027**	ug/L	U	1	0.20	0.027	4/20/2012 17:45	J
Fluorene	**0.16**	ug/L	I	1	0.20	0.030	4/20/2012 17:45	J
Indeno(1,2,3-cd)pyrene	**0.048**	ug/L	U	1	0.20	0.048	4/20/2012 17:45	J
Naphthalene	**0.18**	ug/L	I	1	0.20	0.053	4/20/2012 17:45	J
Phenanthrene	**0.036**	ug/L	U	1	0.20	0.036	4/20/2012 17:45	J
Pyrene	**0.033**	ug/L	U	1	0.20	0.033	4/20/2012 17:45	J
Decafluorobiphenyl (S)	**84**	%		1	21-122		4/20/2012 17:45	
VOLATILES								
Analysis Desc: 8260C Analysis, Water	Preparation Method: SW-846 5030B							
	Analytical Method: SW-846 8260B							
Benzene	**0.21**	ug/L	U	1	1.0	0.21	4/18/2012 23:37	J
Ethylbenzene	**0.24**	ug/L	U	1	1.0	0.24	4/18/2012 23:37	J
Methyl tert-butyl Ether (MTBE)	**0.32**	ug/L	U	1	1.0	0.32	4/18/2012 23:37	J
Toluene	**0.28**	ug/L	U	1	1.0	0.28	4/18/2012 23:37	J
Xylene (Total)	**0.62**	ug/L	U	1	3.0	0.62	4/18/2012 23:37	J
1,2-Dichloroethane-d4 (S)	**101**	%		1	80-120		4/18/2012 23:37	
Toluene-d8 (S)	**100**	%		1	88-110		4/18/2012 23:37	
Bromofluorobenzene (S)	**101**	%		1	86-115		4/18/2012 23:37	

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184005** Date Received: 04/17/12 09:00 Matrix: Water

Sample ID: **007** PCY-0325-GW-007 Date Collected: 04/14/12 08:43

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Water	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
TPH	**350**	**ug/L**	I	**1**	420	100	4/19/2012 18:42	J
o-Terphenyl (S)	**100**	**%**		**1**	82-142		4/19/2012 18:42	
Nonatricontane-C39 (S)	**70**	**%**		**1**	42-193		4/19/2012 18:42	
Analysis Desc: 8270C-SIM Analysis, Water	Preparation Method: SW-846 3510C							
	Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**0.018**	**ug/L**	U	**1**	0.20	0.018	4/20/2012 18:17	J
2-Methylnaphthalene	**0.045**	**ug/L**	U	**1**	0.20	0.045	4/20/2012 18:17	J
Acenaphthene	**0.034**	**ug/L**	U	**1**	0.20	0.034	4/20/2012 18:17	J
Acenaphthylene	**0.030**	**ug/L**	U	**1**	0.20	0.030	4/20/2012 18:17	J
Anthracene	**0.028**	**ug/L**	U	**1**	0.20	0.028	4/20/2012 18:17	J
Benzo[a]anthracene	**0.026**	**ug/L**	U	**1**	0.20	0.026	4/20/2012 18:17	J
Benzo[a]pyrene	**0.024**	**ug/L**	U	**1**	0.20	0.024	4/20/2012 18:17	J
Benzo[b]fluoranthene	**0.040**	**ug/L**	U	**1**	0.20	0.040	4/20/2012 18:17	J
Benzo[g,h,i]perylene	**0.034**	**ug/L**	U	**1**	0.20	0.034	4/20/2012 18:17	J
Benzo[k]fluoranthene	**0.058**	**ug/L**	U	**1**	0.20	0.058	4/20/2012 18:17	J
Chrysene	**0.041**	**ug/L**	U	**1**	0.20	0.041	4/20/2012 18:17	J
Dibenzo[a,h]anthracene	**0.042**	**ug/L**	U	**1**	0.20	0.042	4/20/2012 18:17	J
Fluoranthene	**0.027**	**ug/L**	U	**1**	0.20	0.027	4/20/2012 18:17	J
Fluorene	**0.030**	**ug/L**	U	**1**	0.20	0.030	4/20/2012 18:17	J
Indeno(1,2,3-cd)pyrene	**0.048**	**ug/L**	U	**1**	0.20	0.048	4/20/2012 18:17	J
Naphthalene	**0.053**	**ug/L**	U	**1**	0.20	0.053	4/20/2012 18:17	J
Phenanthrene	**0.036**	**ug/L**	U	**1**	0.20	0.036	4/20/2012 18:17	J
Pyrene	**0.033**	**ug/L**	U	**1**	0.20	0.033	4/20/2012 18:17	J
Decafluorobiphenyl (S)	**103**	**%**		**1**	21-122		4/20/2012 18:17	
VOLATILES								
Analysis Desc: 8260C Analysis, Water	Preparation Method: SW-846 5030B							
	Analytical Method: SW-846 8260B							
Benzene	**0.21**	**ug/L**	U	**1**	1.0	0.21	4/19/2012 04:09	J
Ethylbenzene	**0.24**	**ug/L**	U	**1**	1.0	0.24	4/19/2012 04:09	J
Methyl tert-butyl Ether (MTBE)	**0.32**	**ug/L**	U	**1**	1.0	0.32	4/19/2012 04:09	J
Toluene	**0.28**	**ug/L**	U	**1**	1.0	0.28	4/19/2012 04:09	J
Xylene (Total)	**0.62**	**ug/L**	U	**1**	3.0	0.62	4/19/2012 04:09	J
1,2-Dichloroethane-d4 (S)	**103**	**%**		**1**	80-120		4/19/2012 04:09	

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184005** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **007** Date Collected: 04/14/12 08:43

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Toluene-d8 (S)	**101**	**%**		**1**	88-110		4/19/2012 04:09	
Bromofluorobenzene (S)	**100**	**%**		**1**	86-115		4/19/2012 04:09	

Lab ID: **J1203184006** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **008** PCY-0325-GW-008 Date Collected: 04/14/12 09:24

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Water	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
TPH	**5600**	**ug/L**		**1**	420	100	4/19/2012 19:14	J
o-Terphenyl (S)	**97**	**%**		**1**	82-142		4/19/2012 19:14	
Nonatricontane-C39 (S)	**79**	**%**		**1**	42-193		4/19/2012 19:14	
Analysis Desc: 8270C-SIM Analysis, Water	Preparation Method: SW-846 3510C							
	Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**0.74**	**ug/L**		**1**	0.20	0.018	4/20/2012 18:48	J
2-Methylnaphthalene	**0.68**	**ug/L**		**1**	0.20	0.045	4/20/2012 18:48	J
Acenaphthene	**0.36**	**ug/L**		**1**	0.20	0.034	4/20/2012 18:48	J
Acenaphthylene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 18:48	J
Anthracene	**0.028**	**ug/L**	**U**	**1**	0.20	0.028	4/20/2012 18:48	J
Benzo[a]anthracene	**0.026**	**ug/L**	**U**	**1**	0.20	0.026	4/20/2012 18:48	J
Benzo[a]pyrene	**0.024**	**ug/L**	**U**	**1**	0.20	0.024	4/20/2012 18:48	J
Benzo[b]fluoranthene	**0.040**	**ug/L**	**U**	**1**	0.20	0.040	4/20/2012 18:48	J
Benzo[g,h,i]perylene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 18:48	J
Benzo[k]fluoranthene	**0.058**	**ug/L**	**U**	**1**	0.20	0.058	4/20/2012 18:48	J
Chrysene	**0.041**	**ug/L**	**U**	**1**	0.20	0.041	4/20/2012 18:48	J
Dibenzo[a,h]anthracene	**0.042**	**ug/L**	**U**	**1**	0.20	0.042	4/20/2012 18:48	J
Fluoranthene	**0.027**	**ug/L**	**U**	**1**	0.20	0.027	4/20/2012 18:48	J
Fluorene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 18:48	J
Indeno(1,2,3-cd)pyrene	**0.048**	**ug/L**	**U**	**1**	0.20	0.048	4/20/2012 18:48	J
Naphthalene	**0.53**	**ug/L**		**1**	0.20	0.053	4/20/2012 18:48	J
Phenanthrene	**0.036**	**ug/L**	**U**	**1**	0.20	0.036	4/20/2012 18:48	J
Pyrene	**0.033**	**ug/L**	**U**	**1**	0.20	0.033	4/20/2012 18:48	J

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184006** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **008** Date Collected: 04/14/12 09:24

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Decafluorobiphenyl (S)	**91**	**%**		**1**	21-122		4/20/2012 18:48	
VOLATILES								
Analysis Desc: 8260C Analysis, Water	Preparation Method: SW-846 5030B							
	Analytical Method: SW-846 8260B							
Benzene	**0.63**	**ug/L**	**U**	**3**	3.0	0.63	4/19/2012 04:55	J
Ethylbenzene	**0.72**	**ug/L**	**U**	**3**	3.0	0.72	4/19/2012 04:55	J
Methyl tert-butyl Ether (MTBE)	**0.96**	**ug/L**	**U**	**3**	3.0	0.96	4/19/2012 04:55	J
Toluene	**0.84**	**ug/L**	**U**	**3**	3.0	0.84	4/19/2012 04:55	J
Xylene (Total)	**1.9**	**ug/L**	**U**	**3**	9.0	1.9	4/19/2012 04:55	J
1,2-Dichloroethane-d4 (S)	**100**	**%**		**3**	80-120		4/19/2012 04:55	
Toluene-d8 (S)	**101**	**%**		**3**	88-110		4/19/2012 04:55	
Bromofluorobenzene (S)	**104**	**%**		**3**	86-115		4/19/2012 04:55	

Lab ID: **J1203184007** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **026** PCY-0325-GW-026 Date Collected: 04/14/12 10:36

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Water	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
TPH	**100**	**ug/L**	**U**	**1**	420	100	4/19/2012 19:45	J
o-Terphenyl (S)	**88**	**%**		**1**	82-142		4/19/2012 19:45	
Nonatricontane-C39 (S)	**71**	**%**		**1**	42-193		4/19/2012 19:45	
Analysis Desc: 8270C-SIM Analysis, Water	Preparation Method: SW-846 3510C							
	Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**0.018**	**ug/L**	**U**	**1**	0.20	0.018	4/20/2012 19:20	J
2-Methylnaphthalene	**0.045**	**ug/L**	**U**	**1**	0.20	0.045	4/20/2012 19:20	J
Acenaphthene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 19:20	J
Acenaphthylene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 19:20	J
Anthracene	**0.028**	**ug/L**	**U**	**1**	0.20	0.028	4/20/2012 19:20	J
Benzo[a]anthracene	**0.026**	**ug/L**	**U**	**1**	0.20	0.026	4/20/2012 19:20	J
Benzo[a]pyrene	**0.024**	**ug/L**	**U**	**1**	0.20	0.024	4/20/2012 19:20	J

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184007** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **026** Date Collected: 04/14/12 10:36

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Benzo[b]fluoranthene	**0.040**	**ug/L**	**U**	**1**	0.20	0.040	4/20/2012 19:20	J
Benzo[g,h,i]perylene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 19:20	J
Benzo[k]fluoranthene	**0.058**	**ug/L**	**U**	**1**	0.20	0.058	4/20/2012 19:20	J
Chrysene	**0.041**	**ug/L**	**U**	**1**	0.20	0.041	4/20/2012 19:20	J
Dibenzo[a,h]anthracene	**0.042**	**ug/L**	**U**	**1**	0.20	0.042	4/20/2012 19:20	J
Fluoranthene	**0.027**	**ug/L**	**U**	**1**	0.20	0.027	4/20/2012 19:20	J
Fluorene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 19:20	J
Indeno(1,2,3-cd)pyrene	**0.048**	**ug/L**	**U**	**1**	0.20	0.048	4/20/2012 19:20	J
Naphthalene	**0.053**	**ug/L**	**U**	**1**	0.20	0.053	4/20/2012 19:20	J
Phenanthrene	**0.036**	**ug/L**	**U**	**1**	0.20	0.036	4/20/2012 19:20	J
Pyrene	**0.033**	**ug/L**	**U**	**1**	0.20	0.033	4/20/2012 19:20	J
Decafluorobiphenyl (S)	**85**	**%**		**1**	21-122		4/20/2012 19:20	

VOLATILES

Analysis Desc: 8260C Analysis, Water Preparation Method: SW-846 5030B

Analytical Method: SW-846 8260B

Benzene	**0.21**	**ug/L**	**U**	**1**	1.0	0.21	4/19/2012 05:40	J
Ethylbenzene	**0.24**	**ug/L**	**U**	**1**	1.0	0.24	4/19/2012 05:40	J
Methyl tert-butyl Ether (MTBE)	**0.32**	**ug/L**	**U**	**1**	1.0	0.32	4/19/2012 05:40	J
Toluene	**0.28**	**ug/L**	**U**	**1**	1.0	0.28	4/19/2012 05:40	J
Xylene (Total)	**0.62**	**ug/L**	**U**	**1**	3.0	0.62	4/19/2012 05:40	J
1,2-Dichloroethane-d4 (S)	**103**	**%**		**1**	80-120		4/19/2012 05:40	
Toluene-d8 (S)	**102**	**%**		**1**	88-110		4/19/2012 05:40	
Bromofluorobenzene (S)	**104**	**%**		**1**	86-115		4/19/2012 05:40	

Lab ID: **J1203184008** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **023** PCY-0325-GW-023 Date Collected: 04/14/12 11:14

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Water		Preparation Method: FL-PRO						
		Analytical Method: FL-PRO						
TPH	**6500**	**ug/L**		**10**	4200	1000	4/20/2012 13:20	J

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184008** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **023** Date Collected: 04/14/12 11:14

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: 8270C-SIM Analysis, Water	Preparation Method: SW-846 3510C							
	Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**4.3**	**ug/L**		**1**	0.20	0.018	4/20/2012 19:51	J
2-Methylnaphthalene	**3.8**	**ug/L**		**1**	0.20	0.045	4/20/2012 19:51	J
Acenaphthene	**0.15**	**ug/L**	**I**	**1**	0.20	0.034	4/20/2012 19:51	J
Acenaphthylene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 19:51	J
Anthracene	**0.75**	**ug/L**		**1**	0.20	0.028	4/20/2012 19:51	J
Benzo[a]anthracene	**0.026**	**ug/L**	**U**	**1**	0.20	0.026	4/20/2012 19:51	J
Benzo[a]pyrene	**0.024**	**ug/L**	**U**	**1**	0.20	0.024	4/20/2012 19:51	J
Benzo[b]fluoranthene	**0.040**	**ug/L**	**U**	**1**	0.20	0.040	4/20/2012 19:51	J
Benzo[g,h,i]perylene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 19:51	J
Benzo[k]fluoranthene	**0.058**	**ug/L**	**U**	**1**	0.20	0.058	4/20/2012 19:51	J
Chrysene	**0.041**	**ug/L**	**U**	**1**	0.20	0.041	4/20/2012 19:51	J
Dibenzo[a,h]anthracene	**0.042**	**ug/L**	**U**	**1**	0.20	0.042	4/20/2012 19:51	J
Fluoranthene	**0.027**	**ug/L**	**U**	**1**	0.20	0.027	4/20/2012 19:51	J
Fluorene	**0.15**	**ug/L**	**I**	**1**	0.20	0.030	4/20/2012 19:51	J
Indeno(1,2,3-cd)pyrene	**0.048**	**ug/L**	**U**	**1**	0.20	0.048	4/20/2012 19:51	J
Naphthalene	**1.7**	**ug/L**		**1**	0.20	0.053	4/20/2012 19:51	J
Phenanthrene	**0.036**	**ug/L**	**U**	**1**	0.20	0.036	4/20/2012 19:51	J
Pyrene	**0.033**	**ug/L**	**U**	**1**	0.20	0.033	4/20/2012 19:51	J
Decafluorobiphenyl (S)	**78**	**%**		**1**	21-122		4/20/2012 19:51	
VOLATILES								
Analysis Desc: 8260C Analysis, Water	Preparation Method: SW-846 5030B							
	Analytical Method: SW-846 8260B							
Benzene	**0.63**	**ug/L**	**U**	**3**	3.0	0.63	4/19/2012 06:25	J
Ethylbenzene	**0.72**	**ug/L**	**U**	**3**	3.0	0.72	4/19/2012 06:25	J
Methyl tert-butyl Ether (MTBE)	**0.96**	**ug/L**	**U**	**3**	3.0	0.96	4/19/2012 06:25	J
Toluene	**0.84**	**ug/L**	**U**	**3**	3.0	0.84	4/19/2012 06:25	J
Xylene (Total)	**1.9**	**ug/L**	**U**	**3**	9.0	1.9	4/19/2012 06:25	J
1,2-Dichloroethane-d4 (S)	**106**	**%**		**3**	80-120		4/19/2012 06:25	
Toluene-d8 (S)	**101**	**%**		**3**	88-110		4/19/2012 06:25	
Bromofluorobenzene (S)	**99**	**%**		**3**	86-115		4/19/2012 06:25	
VOLATILES								
Analysis Desc: Flo-Pro Analysis, Water	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
o-Terphenyl (S)	**124**	**%**		**1**	82-142		4/19/2012 20:48	

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184008** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **023** Date Collected: 04/14/12 11:14

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Nonatricontane-C39 (S)	**83**	**%**		**1**	42-193		4/19/2012 20:48	

Lab ID: **J1203184009** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **FD** Date Collected: 04/14/12 11:24

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Water	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
TPH	**8300**	**ug/L**		**10**	4200	1000	4/20/2012 13:51	J
Analysis Desc: 8270C-SIM Analysis, Water	Preparation Method: SW-846 3510C							
	Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**3.8**	**ug/L**		**1**	0.20	0.018	4/20/2012 20:23	J
2-Methylnaphthalene	**3.5**	**ug/L**		**1**	0.20	0.045	4/20/2012 20:23	J
Acenaphthene	**0.18**	**ug/L**	**I**	**1**	0.20	0.034	4/20/2012 20:23	J
Acenaphthylene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 20:23	J
Anthracene	**0.74**	**ug/L**		**1**	0.20	0.028	4/20/2012 20:23	J
Benzo[a]anthracene	**0.026**	**ug/L**	**U**	**1**	0.20	0.026	4/20/2012 20:23	J
Benzo[a]pyrene	**0.024**	**ug/L**	**U**	**1**	0.20	0.024	4/20/2012 20:23	J
Benzo[b]fluoranthene	**0.040**	**ug/L**	**U**	**1**	0.20	0.040	4/20/2012 20:23	J
Benzo[g,h,i]perylene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 20:23	J
Benzo[k]fluoranthene	**0.058**	**ug/L**	**U**	**1**	0.20	0.058	4/20/2012 20:23	J
Chrysene	**0.041**	**ug/L**	**U**	**1**	0.20	0.041	4/20/2012 20:23	J
Dibenzo[a,h]anthracene	**0.042**	**ug/L**	**U**	**1**	0.20	0.042	4/20/2012 20:23	J
Fluoranthene	**0.027**	**ug/L**	**U**	**1**	0.20	0.027	4/20/2012 20:23	J
Fluorene	**0.19**	**ug/L**	**I**	**1**	0.20	0.030	4/20/2012 20:23	J
Indeno(1,2,3-cd)pyrene	**0.048**	**ug/L**	**U**	**1**	0.20	0.048	4/20/2012 20:23	J
Naphthalene	**1.6**	**ug/L**		**1**	0.20	0.053	4/20/2012 20:23	J
Phenanthrene	**0.036**	**ug/L**	**U**	**1**	0.20	0.036	4/20/2012 20:23	J
Pyrene	**0.033**	**ug/L**	**U**	**1**	0.20	0.033	4/20/2012 20:23	J
Decafluorobiphenyl (S)	**76**	**%**		**1**	21-122		4/20/2012 20:23	
VOLATILES								

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184009** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **FD** Date Collected: 04/14/12 11:24

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: 8260C Analysis, Water	Preparation Method: SW-846 5030B							
	Analytical Method: SW-846 8260B							
Benzene	**0.63**	**ug/L**	**U**	**3**	3.0	0.63	4/19/2012 07:11	J
Ethylbenzene	**0.72**	**ug/L**	**U**	**3**	3.0	0.72	4/19/2012 07:11	J
Methyl tert-butyl Ether (MTBE)	**0.96**	**ug/L**	**U**	**3**	3.0	0.96	4/19/2012 07:11	J
Toluene	**0.84**	**ug/L**	**U**	**3**	3.0	0.84	4/19/2012 07:11	J
Xylene (Total)	**1.9**	**ug/L**	**U**	**3**	9.0	1.9	4/19/2012 07:11	J
1,2-Dichloroethane-d4 (S)	**103**	**%**		**3**	80-120		4/19/2012 07:11	
Toluene-d8 (S)	**99**	**%**		**3**	88-110		4/19/2012 07:11	
Bromofluorobenzene (S)	**100**	**%**		**3**	86-115		4/19/2012 07:11	
VOLATILES								
Analysis Desc: Flo-Pro Analysis, Water	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
o-Terphenyl (S)	**115**	**%**		**1**	82-142		4/19/2012 21:19	
Nonatricontane-C39 (S)	**79**	**%**		**1**	42-193		4/19/2012 21:19	

Lab ID: **J1203184010** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **EB** Date Collected: 04/14/12 11:48

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
SEMIVOLATILES								
Analysis Desc: Flo-Pro Analysis, Water	Preparation Method: FL-PRO							
	Analytical Method: FL-PRO							
TPH	**100**	**ug/L**	**U**	**1**	420	100	4/19/2012 21:50	J
o-Terphenyl (S)	**88**	**%**		**1**	82-142		4/19/2012 21:50	
Nonatricontane-C39 (S)	**67**	**%**		**1**	42-193		4/19/2012 21:50	
Analysis Desc: 8270C-SIM Analysis, Water	Preparation Method: SW-846 3510C							
	Analytical Method: SW-846 8270C (SIM)							
1-Methylnaphthalene	**0.018**	**ug/L**	**U**	**1**	0.20	0.018	4/20/2012 20:54	J
2-Methylnaphthalene	**0.045**	**ug/L**	**U**	**1**	0.20	0.045	4/20/2012 20:54	J
Acenaphthene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 20:54	J

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ANALYTICAL RESULTS

Workorder: J1203184 NSA Panama City

Lab ID: **J1203184010** Date Received: 04/17/12 09:00 Matrix: Water
Sample ID: **EB** Date Collected: 04/14/12 11:48

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Acenaphthylene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 20:54	J
Anthracene	**0.028**	**ug/L**	**U**	**1**	0.20	0.028	4/20/2012 20:54	J
Benzo[a]anthracene	**0.026**	**ug/L**	**U**	**1**	0.20	0.026	4/20/2012 20:54	J
Benzo[a]pyrene	**0.024**	**ug/L**	**U**	**1**	0.20	0.024	4/20/2012 20:54	J
Benzo[b]fluoranthene	**0.040**	**ug/L**	**U**	**1**	0.20	0.040	4/20/2012 20:54	J
Benzo[g,h,i]perylene	**0.034**	**ug/L**	**U**	**1**	0.20	0.034	4/20/2012 20:54	J
Benzo[k]fluoranthene	**0.058**	**ug/L**	**U**	**1**	0.20	0.058	4/20/2012 20:54	J
Chrysene	**0.041**	**ug/L**	**U**	**1**	0.20	0.041	4/20/2012 20:54	J
Dibenzo[a,h]anthracene	**0.042**	**ug/L**	**U**	**1**	0.20	0.042	4/20/2012 20:54	J
Fluoranthene	**0.027**	**ug/L**	**U**	**1**	0.20	0.027	4/20/2012 20:54	J
Fluorene	**0.030**	**ug/L**	**U**	**1**	0.20	0.030	4/20/2012 20:54	J
Indeno(1,2,3-cd)pyrene	**0.048**	**ug/L**	**U**	**1**	0.20	0.048	4/20/2012 20:54	J
Naphthalene	**0.053**	**ug/L**	**U**	**1**	0.20	0.053	4/20/2012 20:54	J
Phenanthrene	**0.036**	**ug/L**	**U**	**1**	0.20	0.036	4/20/2012 20:54	J
Pyrene	**0.033**	**ug/L**	**U**	**1**	0.20	0.033	4/20/2012 20:54	J
Decafluorobiphenyl (S)	**86**	**%**		**1**	21-122		4/20/2012 20:54	

VOLATILES

Analysis Desc: 8260C Analysis, Water Preparation Method: SW-846 5030B

Analytical Method: SW-846 8260B

Benzene	**0.21**	**ug/L**	**U**	**1**	1.0	0.21	4/19/2012 07:56	J
Ethylbenzene	**0.24**	**ug/L**	**U**	**1**	1.0	0.24	4/19/2012 07:56	J
Methyl tert-butyl Ether (MTBE)	**0.32**	**ug/L**	**U**	**1**	1.0	0.32	4/19/2012 07:56	J
Toluene	**0.28**	**ug/L**	**U**	**1**	1.0	0.28	4/19/2012 07:56	J
Xylene (Total)	**0.62**	**ug/L**	**U**	**1**	3.0	0.62	4/19/2012 07:56	J
1,2-Dichloroethane-d4 (S)	**101**	**%**		**1**	80-120		4/19/2012 07:56	
Toluene-d8 (S)	**103**	**%**		**1**	88-110		4/19/2012 07:56	
Bromofluorobenzene (S)	**103**	**%**		**1**	86-115		4/19/2012 07:56	

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APPENDIX C

SUPPORT DOCUMENTATION

NSA PANAMA CITY
WATER DATA
J1203184

FRACTION	CHEMICAL	PCY-0325-GW-023	UNITS	FD	RPD	D
PAH	1-METHYLNAPHTHALENE	4.3	UG/L	3.8	12.35	0.50
PAH	2-METHYLNAPHTHALENE	3.8	UG/L	3.5	8.22	0.30
PAH	ACENAPHTHENE	0.15 J	UG/L	0.18 J	18.18	0.03
PAH	ANTHRACENE	0.75	UG/L	0.74	1.34	0.01
PAH	FLUORENE	0.15 J	UG/L	0.19 J	23.53	0.04
PAH	NAPHTHALENE	1.7	UG/L	1.6	6.06	0.10
PET	TOTAL PETROLEUM HYDROCARBON	6500	UG/L	8300	24.32	1800.00

Current RPD Quality Control Limit: 30 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

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☐ 6815 SW Archer Road • Gainesville, FL 32608 • 352.377.2349 • Fax 352.395.6639 • E82001
☐ 528 S. North Lake Blvd., Ste. 1016 • Altamonte Springs, FL 32701 • 407.937.1594 • Fax 407.937.1...

Page 1 of 1 LAB NUMB **J1203184**

CLIENT NAME: SACAL Env. & Management
ADDRESS: 2153 Vineville Ave.
Macon, GA 31204
PHONE: (478) 745-9352
FAX: (478) 743-7686
CONTACT: Ed Glinski
SAMPLED BY: Ed Glinski
TURN AROUND TIME: ☑ STANDARD ☐ RUSH

PROJECT NAME: NSA Panama City
P.O. NUMBER/PROJECT NUMBER:
PROJECT LOCATION: Panama City, FL
REMARKS/SPECIAL INSTRUCTIONS: Please e-mail results to: edwardglinskie sacalglobal.com

ANALYSIS REQUIRED

SAMPLE ID	SAMPLE DESCRIPTION	Grab Comp	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. COUNT	PRESERVATION	8260 H4A (HCL None)	8260 BTEX/MTBE (None)	8270 PAH & TRPH-FL-Pro (H2SO4)	Soil EDB (NaOH)	6010 Lead (HNO3)			MS/MSD	FD	EB	LABORATORY I.D. NUMBER
021	PCY-0325-GW	G	4/13/12	1452	GW	4			X	X								001
019	SAA	G	SAA	1610	GW	4			X	X								002
010	SAA	G	SAA	1751	GW	6			X	X					X			003
015	SAA	G	SAA	1854	GW	4			X	X								004
007	SAA	G	4/14/12	0843	GW	4			X	X								005
008	SAA	G	SAA	0924	GW	4			X	X								006
026	SAA	G	SAA	1030	GW	4			X	X								007
023	SAA	G	SAA	1114 1126	GW	12			X	X						X	X	008
~~003~~	~~PCY-SOD0-GW~~	~~G~~	~~SAA~~	~~1300 1300~~	~~GW~~	~~4D~~		X		X	X	X			X	X	X	
FD EB				1124 1145					X	X								009 010

Matrix Code: WW = wastewater SW = surface water GW = ground water DW = drinking water O = oil A = air SO = soil SL = sludge

Preservation Code: I = ice H=(HCl) S = (H2SO4) N = (HNO3) T = (Sodium Thiosulfate)

Received on Ice ☒ Yes ☐ No ☒ Temp taken from sample ☐ Temp from blank ☐ Where required, pH checked Temperature when received 2 (in degrees celcius)

Form revised 2/8/08

Device used for measuring Temp by unique identifier (circle IR temp gun used) J: 9A G/LT-1 LT-2 T: 10A A: 3A

	Relinquished by:	Date	Time	Received by:	Date	Time
1	Edward D. Glinski	4/14/12	1842	Charles R. Tuttle	4/14/12	1842
2	Charles R. Tuttle	4/16/12	18:05			
3	FS	4-17-12	09:00	[illegible]	4-17-12	09:00
4						

FOR DRINKING WATER USE:
(When PWS information not otherwise supplied) PWS ID:
Contact Person: Phone:
Supplier of Water:
Site Address:

Tuesday, April 24, 2012 2:16:40 PM
Page 22 of 22

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Phone: (904)363-9350
Fax: (904)363-9354

April 24, 2012

Esau Tuberville
Sacal Environmental & Management Co.
2153 Vineville Ave.
Macon, GA 31208

RE: Workorder: J1203184 NSA Panama City

Dear Esau Tuberville:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, April 17, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. The analytical results for the samples contained in this report were submitted for analysis as outlined by the Chain of Custody and results pertain only to these samples.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Gunsaulies
pgunsaulies@aellab.com

Enclosures

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SAMPLE SUMMARY

Workorder: J1203184 NSA Panama City

Lab ID	Sample ID	Matrix	Date Collected	Date Received
J1203184001	021	Water	4/13/2012 14:52	4/17/2012 09:00
J1203184002	019	Water	4/13/2012 16:10	4/17/2012 09:00
J1203184003	010	Water	4/13/2012 17:51	4/17/2012 09:00
J1203184004	015	Water	4/13/2012 18:54	4/17/2012 09:00
J1203184005	007	Water	4/14/2012 08:43	4/17/2012 09:00
J1203184006	008	Water	4/14/2012 09:24	4/17/2012 09:00
J1203184007	026	Water	4/14/2012 10:36	4/17/2012 09:00
J1203184008	023	Water	4/14/2012 11:14	4/17/2012 09:00
J1203184009	FD	Water	4/14/2012 11:24	4/17/2012 09:00
J1203184010	EB	Water	4/14/2012 11:48	4/17/2012 09:00

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ANALYTICAL RESULTS QUALIFIERS

Workorder: J1203184 NSA Panama City

PARAMETER QUALIFIERS

U The compound was analyzed for but not detected.

I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

LAB QUALIFIERS

J DOH Certification #E82574(AEL-JAX)(FL NELAC Certification)

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QUALITY CONTROL DATA

Workorder: J1203184 NSA Panama City

QC Batch:	EXTj/1350	Analysis Method:	SW-846 8270C (SIM)
QC Batch Method:	SW-846 3510C	Prepared:	04/18/2012 14:00

Associated Lab Samples: J1203184001, J1203184002, J1203184003, J1203184004, J1203184005, J1203184006, J1203184007, J1203184008,

METHOD BLANK: 946938

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
SEMIVOLATILES				
Naphthalene	ug/L	0.053	0.053	U
2-Methylnaphthalene	ug/L	0.045	0.045	U
1-Methylnaphthalene	ug/L	0.018	0.018	U
Acenaphthylene	ug/L	0.030	0.030	U
Acenaphthene	ug/L	0.034	0.034	U
Fluorene	ug/L	0.030	0.030	U
Phenanthrene	ug/L	0.036	0.036	U
Anthracene	ug/L	0.028	0.028	U
Fluoranthene	ug/L	0.027	0.027	U
Pyrene	ug/L	0.033	0.033	U
Benzo[a]anthracene	ug/L	0.026	0.026	U
Chrysene	ug/L	0.041	0.041	U
Benzo[b]fluoranthene	ug/L	0.040	0.040	U
Benzo[k]fluoranthene	ug/L	0.058	0.058	U
Benzo[a]pyrene	ug/L	0.024	0.024	U
Indeno(1,2,3-cd)pyrene	ug/L	0.048	0.048	U
Dibenzo[a,h]anthracene	ug/L	0.042	0.042	U
Benzo[g,h,i]perylene	ug/L	0.034	0.034	U
Decafluorobiphenyl (S)	%	104	21-122	

LABORATORY CONTROL SAMPLE: 946939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
SEMIVOLATILES						
Naphthalene	ug/L	5	4.1	81	63-128	
2-Methylnaphthalene	ug/L	5	4.2	84	70-137	
1-Methylnaphthalene	ug/L	5	4.2	85	67-133	
Acenaphthylene	ug/L	5	3.9	79	69-128	
Acenaphthene	ug/L	5	3.9	78	66-128	
Fluorene	ug/L	5	4.2	84	71-136	
Phenanthrene	ug/L	5	4.4	88	74-130	
Anthracene	ug/L	5	4.7	95	82-132	
Fluoranthene	ug/L	5	5.0	100	69-152	
Pyrene	ug/L	5	4.1	83	80-151	
Benzo[a]anthracene	ug/L	5	4.5	90	72-149	

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QUALITY CONTROL DATA

Workorder: J1203184 NSA Panama City

LABORATORY CONTROL SAMPLE: 946939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chrysene	ug/L	5	4.6	92	71-152	
Benzo[b]fluoranthene	ug/L	5	4.5	91	73-123	
Benzo[k]fluoranthene	ug/L	5	4.4	88	75-150	
Benzo[a]pyrene	ug/L	5	4.5	91	75-149	
Indeno(1,2,3-cd)pyrene	ug/L	5	4.6	92	52-141	
Dibenzo[a,h]anthracene	ug/L	5	3.7	75	18-147	
Benzo[g,h,i]perylene	ug/L	5	4.2	84	26-142	
Decafluorobiphenyl (S)	%			101	21-122	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 946940 946941 Original: J1203197001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
SEMIVOLATILES											
Naphthalene	ug/L	0	10	8.5	7.7	85	77	63-128	10	30	
2-Methylnaphthalene	ug/L	0	10	8.9	8.1	89	81	70-137	9	30	
1-Methylnaphthalene	ug/L	0	10	8.8	8.1	88	81	67-133	9	30	
Acenaphthylene	ug/L	0	10	8.7	8.2	87	82	69-128	6	30	
Acenaphthene	ug/L	0	10	8.6	8.0	86	80	66-128	8	30	
Fluorene	ug/L	0	10	9.3	8.7	93	87	71-136	6	30	
Phenanthrene	ug/L	0	10	9.5	8.9	95	89	74-130	7	30	
Anthracene	ug/L	0	10	10	9.4	101	94	82-132	7	30	
Fluoranthene	ug/L	0	10	11	10	106	103	69-152	3	30	
Pyrene	ug/L	0	10	9.0	8.4	91	84	80-151	7	30	
Benzo[a]anthracene	ug/L	0	10	9.9	9.3	99	93	72-149	6	30	
Chrysene	ug/L	0	10	9.6	9.2	96	92	71-152	4	30	
Benzo[b]fluoranthene	ug/L	0	10	9.8	9.2	98	92	73-123	6	30	
Benzo[k]fluoranthene	ug/L	0	10	9.2	8.8	92	88	75-150	4	30	
Benzo[a]pyrene	ug/L	0	10	9.7	8.8	97	88	75-149	10	30	
Indeno(1,2,3-cd)pyrene	ug/L	0	10	10	9.4	100	94	52-141	6	30	
Dibenzo[a,h]anthracene	ug/L	0	10	10	9.8	103	98	18-147	6	30	
Benzo[g,h,i]perylene	ug/L	0	10	9.8	9.2	98	92	26-142	6	30	
Decafluorobiphenyl (S)	%					102	95	21-122	7		

QC Batch: EXTj/1351 Analysis Method: FL-PRO

QC Batch Method: FL-PRO Prepared: 04/18/2012 14:00

Associated Lab Samples: J1203184001, J1203184002, J1203184003, J1203184004, J1203184005, J1203184006, J1203184007, J1203184008,

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QUALITY CONTROL DATA

Workorder: J1203184 NSA Panama City

METHOD BLANK: 946950

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
SEMIVOLATILES				
TPH	ug/L	100	100	U
o-Terphenyl (S)	%	91	82-142	
Nonatricontane-C39 (S)	%	73	42-193	

LABORATORY CONTROL SAMPLE: 946951

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
SEMIVOLATILES						
TPH	ug/L	850	660	78	55-118	
o-Terphenyl (S)	%			93	82-142	
Nonatricontane-C39 (S)	%			74	42-193	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 946952 946953 Original: J1203197001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
SEMIVOLATILES											
TPH	ug/L	4.3	1700	1400	1500	83	88	41-101	6	20	
o-Terphenyl (S)	%					97	100	82-142	2	20	
Nonatricontane-C39 (S)	%					71	72	42-193	2	20	

QC Batch: MSVj/1375 Analysis Method: SW-846 8260B

QC Batch Method: SW-846 5030B Prepared: 04/18/2012 13:47

Associated Lab Samples: J1203184001, J1203184002, J1203184003, J1203184004, J1203184005, J1203184006, J1203184007, J1203184008,

METHOD BLANK: 947499

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
VOLATILES				
Methyl tert-butyl Ether (MTBE)	ug/L	0.32	0.32	U
Benzene	ug/L	0.21	0.21	U
Toluene	ug/L	0.28	0.28	U
Ethylbenzene	ug/L	0.24	0.24	U

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QUALITY CONTROL DATA

Workorder: J1203184 NSA Panama City

METHOD BLANK: 947499

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Xylene (Total)	ug/L	0.62	0.62	U
1,2-Dichloroethane-d4 (S)	%	101	80-120	
Toluene-d8 (S)	%	103	88-110	
Bromofluorobenzene (S)	%	104	86-115	

LABORATORY CONTROL SAMPLE: 947500

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
VOLATILES						
Methyl tert-butyl Ether (MTBE)	ug/L	20	17	86	70-130	
Benzene	ug/L	20	21	105	70-130	
Toluene	ug/L	20	23	113	70-130	
Ethylbenzene	ug/L	20	22	112	70-130	
Xylene (Total)	ug/L	60	69	115	70-130	
1,2-Dichloroethane-d4 (S)	%			95	80-120	
Toluene-d8 (S)	%			99	88-110	
Bromofluorobenzene (S)	%			93	86-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 947501 947502 Original: J1203197001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
VOLATILES											
Methyl tert-butyl Ether (MTBE)	ug/L	0	20	19	19	93	93	70-130	0	30	
Benzene	ug/L	0	20	22	23	110	113	70-130	2	30	
Toluene	ug/L	0	20	23	24	116	118	70-130	1	30	
Ethylbenzene	ug/L	0	20	22	23	112	113	70-130	1	30	
Xylene (Total)	ug/L	0	60	69	70	114	117	70-130	2	30	
1,2-Dichloroethane-d4 (S)	%					96	91	80-120	5		
Toluene-d8 (S)	%					96	97	88-110	2		
Bromofluorobenzene (S)	%					94	94	86-115	0		

CERTIFICATE OF ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: J1203184 NSA Panama City

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
J1203184001	021	SW-846 3510C	EXTj/1350	SW-846 8270C (SIM)	MSSj/1150
J1203184002	019	SW-846 3510C	EXTj/1350	SW-846 8270C (SIM)	MSSj/1150
J1203184003	010	SW-846 3510C	EXTj/1350	SW-846 8270C (SIM)	MSSj/1150
J1203184004	015	SW-846 3510C	EXTj/1350	SW-846 8270C (SIM)	MSSj/1150
J1203184005	007	SW-846 3510C	EXTj/1350	SW-846 8270C (SIM)	MSSj/1150
J1203184006	008	SW-846 3510C	EXTj/1350	SW-846 8270C (SIM)	MSSj/1150
J1203184007	026	SW-846 3510C	EXTj/1350	SW-846 8270C (SIM)	MSSj/1150
J1203184008	023	SW-846 3510C	EXTj/1350	SW-846 8270C (SIM)	MSSj/1150
J1203184009	FD	SW-846 3510C	EXTj/1350	SW-846 8270C (SIM)	MSSj/1150
J1203184010	EB	SW-846 3510C	EXTj/1350	SW-846 8270C (SIM)	MSSj/1150
J1203184001	021	FL-PRO	EXTj/1351	FL-PRO	GCSj/1251
J1203184002	019	FL-PRO	EXTj/1351	FL-PRO	GCSj/1251
J1203184003	010	FL-PRO	EXTj/1351	FL-PRO	GCSj/1251
J1203184004	015	FL-PRO	EXTj/1351	FL-PRO	GCSj/1251
J1203184005	007	FL-PRO	EXTj/1351	FL-PRO	GCSj/1251
J1203184006	008	FL-PRO	EXTj/1351	FL-PRO	GCSj/1251
J1203184007	026	FL-PRO	EXTj/1351	FL-PRO	GCSj/1251
J1203184008	023	FL-PRO	EXTj/1351	FL-PRO	GCSj/1251
J1203184009	FD	FL-PRO	EXTj/1351	FL-PRO	GCSj/1251
J1203184010	EB	FL-PRO	EXTj/1351	FL-PRO	GCSj/1251
J1203184001	021	SW-846 5030B	MSVj/1375	SW-846 8260B	MSVj/1376
J1203184002	019	SW-846 5030B	MSVj/1375	SW-846 8260B	MSVj/1376
J1203184003	010	SW-846 5030B	MSVj/1375	SW-846 8260B	MSVj/1376
J1203184004	015	SW-846 5030B	MSVj/1375	SW-846 8260B	MSVj/1376
J1203184005	007	SW-846 5030B	MSVj/1375	SW-846 8260B	MSVj/1376
J1203184006	008	SW-846 5030B	MSVj/1375	SW-846 8260B	MSVj/1376
J1203184007	026	SW-846 5030B	MSVj/1375	SW-846 8260B	MSVj/1376
J1203184008	023	SW-846 5030B	MSVj/1375	SW-846 8260B	MSVj/1376
J1203184009	FD	SW-846 5030B	MSVj/1375	SW-846 8260B	MSVj/1376
J1203184010	EB	SW-846 5030B	MSVj/1375	SW-846 8260B	MSVj/1376

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HOLDTIME

SDG J1203184

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	UG/L	15	J1203184004	NM	4/13/2012	4/18/2012	4/18/2012	5	0	5
OV	UG/L	19	J1203184002	NM	4/13/2012	4/18/2012	4/18/2012	5	0	5
OV	UG/L	21	J1203184001	NM	4/13/2012	4/18/2012	4/18/2012	5	0	5
OV	UG/L	23	J1203184008	NM	4/14/2012	4/18/2012	4/19/2012	4	1	5
OV	UG/L	26	J1203184007	NM	4/14/2012	4/18/2012	4/19/2012	4	1	5
OV	UG/L	7	J1203184005	NM	4/14/2012	4/18/2012	4/19/2012	4	1	5
OV	UG/L	8	J1203184006	NM	4/14/2012	4/18/2012	4/19/2012	4	1	5
OV	UG/L	EB	J1203184010	NM	4/14/2012	4/18/2012	4/19/2012	4	1	5
OV	UG/L	FD	J1203184009	NM	4/14/2012	4/18/2012	4/19/2012	4	1	5
OV	UG/L	10	J1203184003	NM	4/13/2012	4/18/2012	4/18/2012	5	0	5
SIM	UG/L	26	J1203184007	NM	4/14/2012	4/18/2012	4/20/2012	4	2	6
SIM	UG/L	10	J1203184003	NM	4/13/2012	4/18/2012	4/20/2012	5	2	7
SIM	UG/L	15	J1203184004	NM	4/13/2012	4/18/2012	4/20/2012	5	2	7
SIM	UG/L	19	J1203184002	NM	4/13/2012	4/18/2012	4/20/2012	5	2	7
SIM	UG/L	23	J1203184008	NM	4/14/2012	4/18/2012	4/20/2012	4	2	6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/L	7	J1203184005	NM	4/14/2012	4/18/2012	4/20/2012	4	2	6
SIM	UG/L	8	J1203184006	NM	4/14/2012	4/18/2012	4/20/2012	4	2	6
SIM	UG/L	EB	J1203184010	NM	4/14/2012	4/18/2012	4/20/2012	4	2	6
SIM	UG/L	FD	J1203184009	NM	4/14/2012	4/18/2012	4/20/2012	4	2	6
SIM	UG/L	21	J1203184001	NM	4/13/2012	4/18/2012	4/20/2012	5	2	7
TPH	UG/L	FD	J1203184009	NM	4/14/2012	4/18/2012	4/20/2012	4	2	6
TPH	UG/L	10	J1203184003	NM	4/13/2012	4/18/2012	4/19/2012	5	1	6
TPH	UG/L	15	J1203184004	NM	4/13/2012	4/18/2012	4/19/2012	5	1	6
TPH	UG/L	19	J1203184002	NM	4/13/2012	4/18/2012	4/19/2012	5	1	6
TPH	UG/L	21	J1203184001	NM	4/13/2012	4/18/2012	4/19/2012	5	1	6
TPH	UG/L	23	J1203184008	NM	4/14/2012	4/18/2012	4/20/2012	4	2	6
TPH	UG/L	26	J1203184007	NM	4/14/2012	4/18/2012	4/19/2012	4	1	5
TPH	UG/L	7	J1203184005	NM	4/14/2012	4/18/2012	4/19/2012	4	1	5
TPH	UG/L	8	J1203184006	NM	4/14/2012	4/18/2012	4/19/2012	4	1	5
TPH	UG/L	EB	J1203184010	NM	4/14/2012	4/18/2012	4/19/2012	4	1	5