CORRECTIVE ACTION MONITORING REPORT
2013 FIRST SEMIANNUAL EVENT

FORMER HOUSTON WOOD PRESERVING WORKS
4910 LIBERTY ROAD
HOUSTON, TEXAS

July 1, 2013

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CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature

7-5-2013

Date

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GENERAL MANAGER
ENVIRONMENTAL MANAGEMENT

Name

Title

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1.0 EXECUTIVE SUMMARY

This semi-annual report presents a summary and evaluation of the Corrective Action Groundwater Monitoring for January through June 2013 for the Closed Surface Impoundment (Solid Waste Management Unit (SWMU) No. 1) at the former Wood Preserving Works facility (the Site) located in Houston, Texas. The groundwater monitoring activities for this period were performed by Pastor, Behling & Wheeler, LLC (PBW) on behalf of Union Pacific Railroad (UPRR) in January 2013.

The two uppermost groundwater bearing units, the A-Transmissive Zone (A-TZ) and the B-Transmissive Zone (B-TZ), were monitored during this period. Groundwater elevation data collected during the January 2013 sampling event show groundwater flow in the A-TZ to the northeast with a hydraulic gradient of approximately 0.014 ft/ft. Groundwater flow during the previous event (2012 second semi-annual monitoring event) was observed to have an inward gradient towards MW-10A.

Groundwater elevation data collected in the B-TZ show groundwater flow to the northeast at SWMU No. 1 with a hydraulic gradient of approximately 0.0125 ft/ft. Groundwater flow during the previous event (2012 second semi-annual monitoring event) was observed to have an inward gradient towards MW-10B.

Analytical results from the January 2013 sampling event were compared to Texas Commission on Environmental Quality Texas Risk Reduction Program Protective Concentration Limits, as designated in Section IV.D of the Compliance Plan, dated June 10, 2005. Constituent concentrations were below their respective PCLs for the fourteenth consecutive semi-annual monitoring event. Monitoring wells in both the A-TZ and B-TZ are considered to be compliant for this monitoring period.

2.0 INTRODUCTION

This semi-annual report presents a summary and evaluation of groundwater monitoring data collected during the 2013 first semi-annual monitoring period (January through June) at the Union Pacific Railroad (UPRR) former Houston Wood Preserving Works facility (the Site) located at 4910 Liberty Road in Houston, Texas (Figure 1). Semi-annual groundwater monitoring is required for the Site as a condition of the Texas Commission on Environmental Quality (TCEQ) Hazardous Waste Permit No. 50343 and associated Compliance Plan (CP) No. 50343, both renewed and issued on June 10, 2005. Groundwater monitoring at the Site is performed to monitor groundwater quality beneath the Closed Surface Impoundment Unit No. 001 (Solid Waste Management Unit (SWMU) No. 1).

On behalf of UPRR, Pastor, Behling & Wheeler, LLC. (PBW) conducted groundwater monitoring activities at the Site on January 7-8, 2013. Groundwater monitoring activities included sampling and gauging the background and point of compliance (POC) wells and piezometers associated with SWMU No. 1. The sampling event, analytical data, and data evaluation provided in this report fulfill the semi-annual corrective action reporting requirements for the first half of 2013 as described in the CP, Section VII.C.2. This section requires the following reporting elements:

Semi-Annual Corrective Action Report Requirements	**Report Section, Table(s) and/or Figure(s)**
A narrative summary of the evaluations made in accordance with CP Sections V, VI, and VII for the preceding six-month period. These periods shall be January 1 through June 30 and July 1 through December 31 (VII.C.2.a.)	3.0
Summary of Methods utilized for management of recovered/purged water (VII.C.2.b.)	3.2
An updated table and map of the monitoring and corrective action system wells (VII.C.2.c.)	Section 3.1.1 and Figure 2
The results of the chemical analyses, submitted in a tabulated format in a form acceptable to the Executive Director, which clearly indicates each parameter that exceeds the Groundwater Protection Standard (GWPS). Copies of the original laboratory report for chemical analyses showing detection limits and quality control and quality assurance data shall be provided if requested by the Executive Director (VII.C.2.d.)	Tables 1 & 2 Appendix C
Tabulation of the water level elevations (relative to mean sea level), depth to water measurements, and total depth of well measurements collected since the data that was submitted in the previous semiannual report (VII.C.2.e.)	Table 4
Potentiometric surface maps showing the elevation of the water table at the time of sampling and direction of groundwater flow gradients (VII.C.2.f.)	Figures 3 & 4
A notation of the presence or absence of non-aqueous phase liquids (NAPLs), both light and dense phases, in each well during each sampling event since the last event covered in the previous semiannual report and tabulation of depth and thickness of NAPLs, if detected (VII.C.2.g.)	Table 4

Semi-Annual Corrective Action Report Requirements (cont'd)	Report Section, Table(s) and/or Figure(s)
Quarterly tabulations of quantities of recovered groundwater and NAPLs, and graphs of monthly recorded flow rates versus time for the recovery wells during each period. A narrative summary describing and evaluating the NAPL recovery program shall also be included (VII.C.2.h.)	Not Applicable
Tabulation of the total contaminant mass recovered from each recovery system for each reporting period, if such a system is installed (VII.C.2.i.)	Not Applicable
Tabulation of the data evaluation results pursuant to Section VI.D and status of each well listed on CP Table V with regard to compliance with the corrective action objectives and compliance with the GWPSs (VII.C.2.j.)	Table 5
Maps of the contaminated area depicting concentrations of constituents listed in Table IV and any newly detected Table III constituents as isopleths contours or discrete concentrations if isopleths contours cannot be inferred (VII.C.2.k.)	Not Applicable
Maps indicating the extent and thickness of the LNAPLs and DNAPLs, if detected (VII.C.2.l.)	Not Detected
An updated schedule summary as required by Section X (VII.C.2.m.)	Appendix D
Summary of any changes made to the monitoring/corrective action program and a summary of recovery well inspections, repairs, and any operational difficulties (VII.C.2.n.)	None
A table of the modifications and amendments made to this Compliance Plan with their corresponding approval dates by the executive director or the Commission and a brief description of each action (VII.C.2.o.)	None
Corrective Measures Implementation (CMI) Report to be submitted in accordance with Section VIII.F, if necessary (VII.C.2.p.)	Not Applicable
Tabulation of well casing elevations in accordance with Attachment B No. 16 (VII.C.2.q.)	Table 4
Recommendation for any changes (VII.C.2.r.)	None
Certification and well installation diagram for any new well installation or replacement and certification for any well plugging and abandonment (VII.C.2.s.)	Not Applicable
A summary of any activity within an area subject to institutional control (VII.C.2.t.)	None
Any other items requested by the Executive Director (VII.C.2.u.)	None

As of January 2013, a recovery system had not been installed and is not necessary for the regulated unit. Therefore, Provisions 8, 9, and 10 that relate to recovery wells or recovery system, are not applicable for this reporting period.

Responses to each of the semi-annual report provisions required by CP Section VII.C.2 are provided in Section 3.0. Conclusions and recommendations are provided in Section 4.0.

3.0 2013 FIRST SEMI-ANNUAL GROUNDWATER MONITORING EVENT

A discussion of each of the semi-annual report provisions required by CP Section VII.C.2 is presented below by reference number to the list of provisions in Section 2.0.

3.1 Narrative Summary of First Semi-Annual Monitoring Activities

The CP requires an evaluation of the Corrective Action Program (Section V) and Groundwater Monitoring Program summarizing the overall effectiveness of the Corrective Action Program (Section VI). This narrative summary includes provisions for response and reporting requirements as detailed in the CP Section VII, as discussed below.

3.11 Corrective Action Program

Groundwater samples were collected from the Background and POC wells (as detailed in CP Table V, which is provided in Appendix A) to assess potentially affected groundwater quality in the A-Transmissive Zone (A-TZ) and the B-Transmissive Zone (B-TZ). These water-bearing zones are defined as:

- A-TZ refers to the first sand unit encountered at approximately 13 feet below ground surface (bgs) and averages 7 feet in thickness; and
- B-TZ refers to the second sand unit encountered at approximately 30 feet bgs and averages 9 feet in thickness.

The definitions of the A-TZ and B-TZ are consistent with the Uppermost Transmissive Zone (UTZ) and Second Transmissive Zone (STZ), respectively, as defined in CP Provision I.A.

The following monitoring wells were sampled during this event (Figure 2):

- A-TZ POC wells: MW-01A, MW-02, MW-07, MW-10A, and MW-11A;
- A-TZ Background well: MW-08;
- B-TZ POC wells: MW-10B, MW-11B, and P-10; and
- B-TZ background well: P-12.

3.1.2 Groundwater Monitoring

PBW performed quarterly inspections of SWMU No. 1 in January and April, 2013 and conducted semi-annual groundwater sampling activities on January 7-8, 2013. Groundwater sampling was performed using procedures outlined in a U.S. Environmental Protection Agency (EPA) document titled *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (EPA/540/S-95/504) published in April 1996 and approved in the CP application. Groundwater samples were analyzed for the Detected Hazardous and Solid Waste Constituents listed in the CP, Table III (Appendix A).

Monitoring wells are equipped with dedicated polytetrafluoroethylene (PTFE) tubing for groundwater sampling. A peristaltic pump was used to purge and collect the groundwater samples. An approximate one-foot section of disposable silicon tubing was placed around the pump head and attached to the PTFE tubing for proper operation of the pump. Groundwater was pumped from the screened interval of each well at a flow rate of less than 0.5 L/min using a flow-through cell. Field parameters including temperature, pH, specific conductivity, dissolved oxygen, and turbidity were measured during purging and sampling activities. When field parameters had stabilized to the EPA-specified criteria, a sample was then collected for analysis. The samples were also collected at a flow rate of less than 0.5 L/min. Recorded field parameters are summarized in Appendix B.

For each well, sample bottles were filled directly from the pumping apparatus described above, and were sealed and packed in coolers with sufficient ice to maintain a sample temperature of approximately 4°C. The sample coolers were delivered to TestAmerica Laboratories, in Houston, Texas for analysis. Chain-of-Custody (COC) forms were completed and kept with their respective samples. Copies of the analytical data and COCs are included in Appendix C. Groundwater samples were then analyzed for the Detected Hazardous and Solid Waste Constituents listed in the CP, Table III (Appendix A).

3.2 Purge Water Management

Approximately 5 gallons of purge water were generated during the January 2013 low-flow groundwater sampling event. The purge water was containerized in a Department of Transportation (DOT) certified, 55-gallon steel drum and temporarily stored on site in a fenced and locked container storage area (NOR 006). Since the groundwater sampled and analyzed during this event did not contain hazardous constituents above the applicable health-based levels (i.e. PCLs discussed in Section 3.10), the purge water generated was not considered hazardous in accordance with the EPA “contained-in determination”

detailed in the 1986 EPA memorandum "RCRA Regulatory Status of Contaminated Groundwater". However, wastes generated during the 2013 first semi-annual monitoring event were transported from the Site by USA Waste Transportation Services to the Clean Harbors Deer Park, LLC facility, located in La Porte, Texas on March 20, 2013 for disposal under EPA waste code F034 and TCEQ Notice of Registration (NOR) waste code 0914101H (purge water). Waste manifests are provided in Appendix D.

3.3 Monitoring and Corrective Action System Wells

A summary of the current monitoring and corrective action groundwater wells is discussed in Section 3.1.1. Configuration of the current monitoring and corrective action well network is presented on Figure 2.

3.4 Analytical Results

The 2013 first semi-annual groundwater analytical results from the A-TZ and B-TZ are summarized in Tables 1 and 2, respectively and the laboratory analytical report is provided in Appendix C. The analytical results were compared to the Detected Hazardous and Solid Waste Constituent limits, which are taken from the current TCEQ Texas Risk Reduction Program (TRRP) Tier 1 Protective Concentration Levels (PCLs). TRRP PCLs serve as the Groundwater Protection Standard (GWPS), as detailed in Section IV.D and Table III of the CP. If any concentrations exceeded the concentration limits of this report, the concentration is bolded within the table.

Quality assurance/quality control (QA/QC) samples (matrix spike and matrix spike duplicate results) are summarized in Table 3.

3.5 Well Measurements

During the sampling event, the following information was recorded at each monitoring well:

Before Sampling

- The presence of light NAPLs was evaluated; and
- Depth to groundwater below the top of casing was measured to the nearest 0.01 foot.

After Sampling

- The presence of dense non-aqueous phase liquids (DNAPLs) were evaluated using visual observations and an oil-water interface probe; and
- Total well depths of the wells were measured.

Table 4 provides a summary of these measurements. None of the compliance wells had measurable amounts or any indication of LNAPL or DNAPL.

3.6 Potentiometric Surface Maps

Groundwater elevation data recorded during the 2013 first semi-annual monitoring event were used to create potentiometric surface maps of the A-TZ and B-TZ, presented on Figures 3 and 4, respectively.

The two uppermost groundwater bearing units, the A-Transmissive Zone (A-TZ) and the B-Transmissive Zone (B-TZ), were monitored during this period. Groundwater elevation data collected during the January 2013 sampling event show groundwater flow in the A-TZ to the northeast with a hydraulic gradient of approximately 0.014 ft/ft. Groundwater flow during the previous event (2012 second semi-annual monitoring event) was observed to have an inward gradient towards MW-10A.

Groundwater elevation data collected in the B-TZ show groundwater flow to the northeast at SWMU No. 1 with a hydraulic gradient of approximately 0.0125 ft/ft. Groundwater flow during the previous event (2012 second semi-annual monitoring event) was observed to have an inward gradient towards MW-10B.

3.7 Non-Aqueous Phase Liquids

Measurable amounts of LNAPL and/or DNAPL were not observed in any of the compliance wells.

3.8 Recovered Groundwater and NAPL

To date, a recovery system has not been installed nor is necessary at the SWMU No. 1; therefore, this provision is not applicable.

3.9 Contaminant Mass Recovered

With the groundwater analytical data for the POC wells in compliance and no groundwater recovery system installed, or necessary, this provision is not applicable for the Site.

3.10 Analytical Data Evaluation

Section VI.D of the CP describes two methods which may be used to determine the compliance status of a given well:

1) Analytical results may be either directly compared with PCLs (CP Table III; included in Appendix A), or
2) Analytical results can be statistically compared PCLs using the Confidence Interval Procedure for the mean concentration based on normal, log-normal, or non-parametric distribution, which the 95% confidence coefficient of the t-distribution will be used in construction of the confidence interval.

Direct comparison to PCLs was used to evaluate the analytical data. Tables 1 (A-TZ) and 2 (B-TZ) show the results of a direct comparison of data for this sampling event to the respective PCLs. Wells and piezometers are in compliance if each of the constituents listed in the CP Table III was reported at a concentration less than or equal to the PCL. Based on the analytical results from the January 2013 monitoring event, the compliance wells completed in both transmissive zones are compliant with GWPSs; therefore the monitoring wells are considered to be compliant for this monitoring period. Compliance status for each of the monitoring wells is provided in Table 5.

Monitoring wells in A-TZ and B-TZ have not exceeded the established CP PCLs since July 2005, at which time dibenzofuran exceeded its respective PCL of 0.098 mg/L in MW-01A (0.11 mg/L). Including the 2013 first semi-annual analytical data, the SMWU No. 1 monitoring wells have been compliant for fifteen consecutive semi-annual monitoring events (7.5 years). Concentration versus time graphs for COCs in the A-TZ (2-methylnaphthalene (Figure E-1), dibenzofuran (Figure E-2), and naphthalene (Figure E-3)) and the B-TZ (dibenzofuran (Figure E-4) and naphthalene (Figure E-5)) are provided in Appendix E. The graphs demonstrate that COC concentrations in the A-TZ and B-TZ POC wells have shown a steady decrease over time, and are currently compliant with the TCEQ Remedy Standard A requirements for groundwater protection.

A QA/QC review and Data Usability Summary (DUS) were prepared for the January 2013 analytical data by Conestoga-Rovers & Associates (CRA) (Appendix C). The laboratory qualified analytes with concentrations above the sample detection limits (SDLs) but below the method quantitation limits (MQLs) as estimated on analytical tables (Tables 1 and 2). In addition to the laboratory qualifiers, CRA qualified the following results:

- P-12 – The bis(2-ethylhexyl)phthalate concentration at P-12 was J flagged due to outlying matrix spike/matrix spike duplicate recoveries.
- MW-01A – The anthracene and phenanthrene concentrations at MW-01A were J flagged due to variability in field duplicate results.
- P-10 – Anthracene, which was not detected at P-10, was UJ flagged due to variability in field duplicate results.
- DUP-1 - The anthracene and phenanthrene concentrations at DUP-1 were J flagged due to variability in field duplicate results.
- DUP-2 - The anthracene concentration at DUP-2 was J flagged due to variability in field duplicate results.

Based on the QA/QC data review, CRA noted that the analytical data are usable for the intended use with the above qualifications.

3.11 Reported Concentration Maps

Reported concentrations of each constituent analyzed for the 2013 first semi-annual monitoring event are presented on Figures 5 and 6 for the A-TZ and B-TZ compliance wells, respectively. In the event a constituent exceeded their respective PCL, the value would be highlighted on the figures. There were no exceedances of PCLs for any of the required constituents.

3.12 Extent of NAPL

No measurable amounts of LNAPL or DNAPL were detected in any of the compliance wells.

3.13 Updated Compliance Schedule

Section X of the CP requires that the Permittee submit a schedule summarizing the activities required by the Compliance Plan issued on June 10, 2005, which was originally submitted to the TCEQ on August 4, 2004. An updated compliance schedule is included as Appendix F of this report.

3.14 Summary of Changes Made to Corrective Action Program

No changes have been made to the corrective action program.

3.15 Modifications and Amendments to Compliance Plan

A compliance plan renewal application was submitted to TCEQ on December 23, 2003 consistent with the renewal requirements for the RCRA permit at the site. The RCRA permit and CP were issued June 10, 2005. There have been no modifications or amendments to the Compliance Plan since the last permit issued.

3.16 Corrective Measures Implementation (CMI) Report

A Response Action Plan (RAP) has not been submitted; therefore, this provision does not apply.

3.17 Well Casing Elevations

In accordance with the facility Groundwater Sampling and Analysis Plan (GWSAP) dated May 13, 2004 (Revision 1), which requires SWMU No. 1 monitoring well elevations to be resurveyed every five years, the six A-TZ and four B-TZ monitoring well elevations were most recently surveyed on December 2, 2010.

3.18 Recommendation for Changes

There are no recommendations for changes to the monitoring program or to the Corrective Action Program.

3.19 Well Installation and/or Abandonment

No monitoring wells were installed or abandoned as part of the monitoring program or the Corrective Action Program during the reporting period.

3.20 Activity Within Area Subject to Institutional Control

No areas are under institutional control; therefore, this provision does not apply.

3.21 Other Requested Items

No other items have been requested by the executive director.

TABLES

Table 1
Summary of Analytical Results for the A-Transmissive Zone (A-TZ)
Semiannual Monitoring Report: 2013 First Semiannual Event

Houston Wood Preserving Works
Houston, Texas

Analyte	PCL (mg/L)	Monitoring Well IDs (Concentrations mg/L)																				
		MW-01A			DUP-01			MW-02			MW-07			MW-08			MW-10A			MW-11A		
		1/9/2013	LQ	VQ	1/9/2013	LQ	VQ	1/9/2013	LQ	VQ	1/10/2013	LQ	VQ	1/10/2013		VQ	1/9/2013	LQ	VQ	1/9/2013	LQ	VQ
Acenaphthene	1.5	0.117			0.119			0.038			0.002			<0.00008	U		<0.00008	U		0.002		
Acenaphthylene	1.5	0.0022			0.0019			0.0006			0.0001	J		<0.00006	U		<0.00006	U		<0.00006	U	
Anthracene	7.3	0.00029	J	J	0.0037		J	0.0013			0.00083			0.00044	J		0.00047	J		0.00050		
bis(2-ethylhexyl)phthalate	0.006	0.0016			0.0016			0.0009			<0.0004	U		<0.0004	U		0.0017			<0.0004	U	
Dibenzofuran	0.098	0.0141			0.0134			0.0178			<0.00008	U		<0.00008	U		<0.00008	U		<0.00008	U	
Fluoranthene	0.98	0.0060			0.0054			0.0015			<0.00007	U		<0.00007	U		<0.00007	U		<0.00007	U	
Fluorene	0.98	0.0564			0.0556			0.0201			0.0001	J		<0.00007	U		<0.00007	U		<0.00007	U	
2-Methylnaphthalene	0.098	0.0013			0.0013			0.0032			<0.00007	U		<0.00007	U		<0.00007	U		<0.00007	U	
Naphthalene	0.49	0.0022			0.0025			0.0211			<0.00008	U		<0.00008	U		<0.00008	U		<0.00008	U	
Phenanthrene	0.73	0.0039		J	0.0012		J	0.0024			<0.00006	U		<0.00006	U		<0.00006	U		<0.00006	U	
Pyrene	0.73	0.0026			0.0020			0.0009			<0.0001	U		<0.0001	U		<0.0001	U		<0.0001	U	

Notes:
PCL = Protective Concentration Level
The Compliance Plan Section IV.D defines the Groundwater Protection Standard (GWPS) as the PCL
DUP-01 = Duplicate sample collected at MW-01A

LQ - Lab Qualifier
J = Estimated value between the SDL and the MQL
U = Value not detected greater than the MQL

VQ - Validation Qualifier
J = Estimated concentration

Table 2
Summary of Analytical Results for the B-Transmissive Zone (B-TZ)
Semiannual Monitoring Report: 2013 First Semiannual Event

Houston Wood Preserving Works
Houston, Texas

Analyte	PCL (mg/L)	Monitoring Well IDs (Concentrations mg/L)														
		MW-10B			MW-11B			P-10			DUP-02			P-12		
		1/9/2013	LQ	VQ	1/9/2013	LQ	VQ	1/10/2013	LQ	VQ	1/10/2013	LQ	VQ	1/9/2013	LQ	VQ
Acenaphthene	1.5	0.12			0.0631			<0.00008	U		<0.00008	U		<0.00008	U	
Acenaphthylene	1.5	0.0011			0.0014			<0.00006	U		<0.00006	U		<0.00006	U	
Anthracene	7.3	0.0055			0.0002	J		<0.00005	U	UJ	0.000148	J	J	<0.00005	U	
bis(2-ethylhexyl)phthalate	0.006	<0.0004	U		0.0020			0.0009			0.0011			0.0014		J
Dibenzofuran	0.098	0.0401			0.0035			<0.00008	U		<0.00008	U		<0.00008	U	
Di-n-butyl phthalate	2.4	<0.0001	U		<0.0001	U		<0.0001	U		<0.0001	U		<0.0001	U	
Fluoranthene	0.98	0.0043			0.0031			<0.00007	U		<0.00007	U		<0.00007	U	
Fluorene	0.98	0.0652			0.0021			<0.00007	U		<0.00007	U		<0.00007	U	
Naphthalene	0.49	0.0040			<0.00008	U		<0.00008	U		<0.00008	U		<0.00008	U	
Phenol	7.3	<0.00004	U		<0.00004	U		<0.00004	U		<0.00004	U		<0.00004	U	
Pyrene	0.73	0.0015			0.0015			<0.0001	U		<0.0001	U		<0.0001	U	

Notes:
PCL = Protective Concentration Level
The Compliance Plan Section IV.D defines the Groundwater Protection Standard (GWPS) as the PCL
DUP-02 = Duplicate sample collected at P-10

LQ - Lab Qualifier
J = Estimated value between the SDL and the MDQ
U = Value not detected greater than the MQL

VQ - Validation Qualifier
J = Estimated concentration
UJ = Not detected; associated reporting limit is estimated

Table 3
Summary of Analytical Results for Quality Assurance/Quality Control Samples
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Houston Wood Preserving Works
Houston, Texas

Analyte	PCL (mg/L)	P-12(MS)[1] Matrix Spike 1/9/2013		P-12(MSD)[1] Matrix Spike Duplicate 1/9/13	
Acenaphthene	1.5	0.009755		0.01	
Acenaphthylene	1.5	0.01033		0.01154	
Anthracene	7.3	0.01046		0.01239	
bis(2-ethylhexyl)phthalate	0.006	0.01055		0.01385	N
Dibenzofuran	0.098	0.00997		0.01144	
Di-n-butyl phthalate	2.4	0.01033		0.01225	
Fluoranthene	0.98	0.01140		0.01336	
Fluorene	0.98	0.01029		0.01185	
2-Methylnaphthalene	0.098	0.01010		0.01102	
Naphthalene	0.49	0.00994		0.01093	
Phenanthrene	0.73	0.00977		0.01167	
Phenol	7.3	0.00572		0.006519	
Pyrene	0.73	0.00995		0.01228	N

Notes:
PCL = Protective Concentration Level
(1) = P-12(MS) and P-12(MSD) are matrix spike and matrix spike duplicate samples collected at P-12, respectively.
N = Relative percent difference of the MS and MSD exceeds the control limits.

Table 4

Water Level Measurements
Semiannual Monitoring Report: 2013 First Semiannual Event

Houston Wood Preserving Works
Houston, Texas

Well ID	Top of Casing Elevation (TOC) (ft MSL)*	Date Measured	Water Depth (ft. BTOC)	Depth to NAPL (ft. BTOC)	Total Well Depth as Completed (ft. BTOC)	Total Well Depth (ft. BTOC)	Potentiometric Elevation (ft. MSL)
A-TZ Monitoring Locations							
MW-01A	47.88	1/7/2013	6.96	ND	20.2	19.85	40.92
MW-02	48.00	1/7/2013	7.54	ND	20.3	20.30	40.46
MW-07	48.92	1/7/2013	6.49	ND	NA	25.25	42.43
MW-08	49.33	1/7/2013	7.06	ND	26.8	25.05	42.27
MW-10A	49.82	1/7/2013	8.91	ND	25.9	25.05	40.91
MW-11A	50.07	1/7/2013	8.78	ND	24.4	24.05	41.29
B-TZ Monitoring Locations							
MW-10B	49.95	1/7/2013	9.04	ND	48.8	46.50	40.91
MW-11B	50.23	1/7/2013	8.96	ND	46.8	46.65	41.27
P-10	47.73	1/7/2013	5.56	ND	40.0	42.80	42.17
P-12	48.80	1/7/2013	6.81	ND	40.0	42.80	41.99

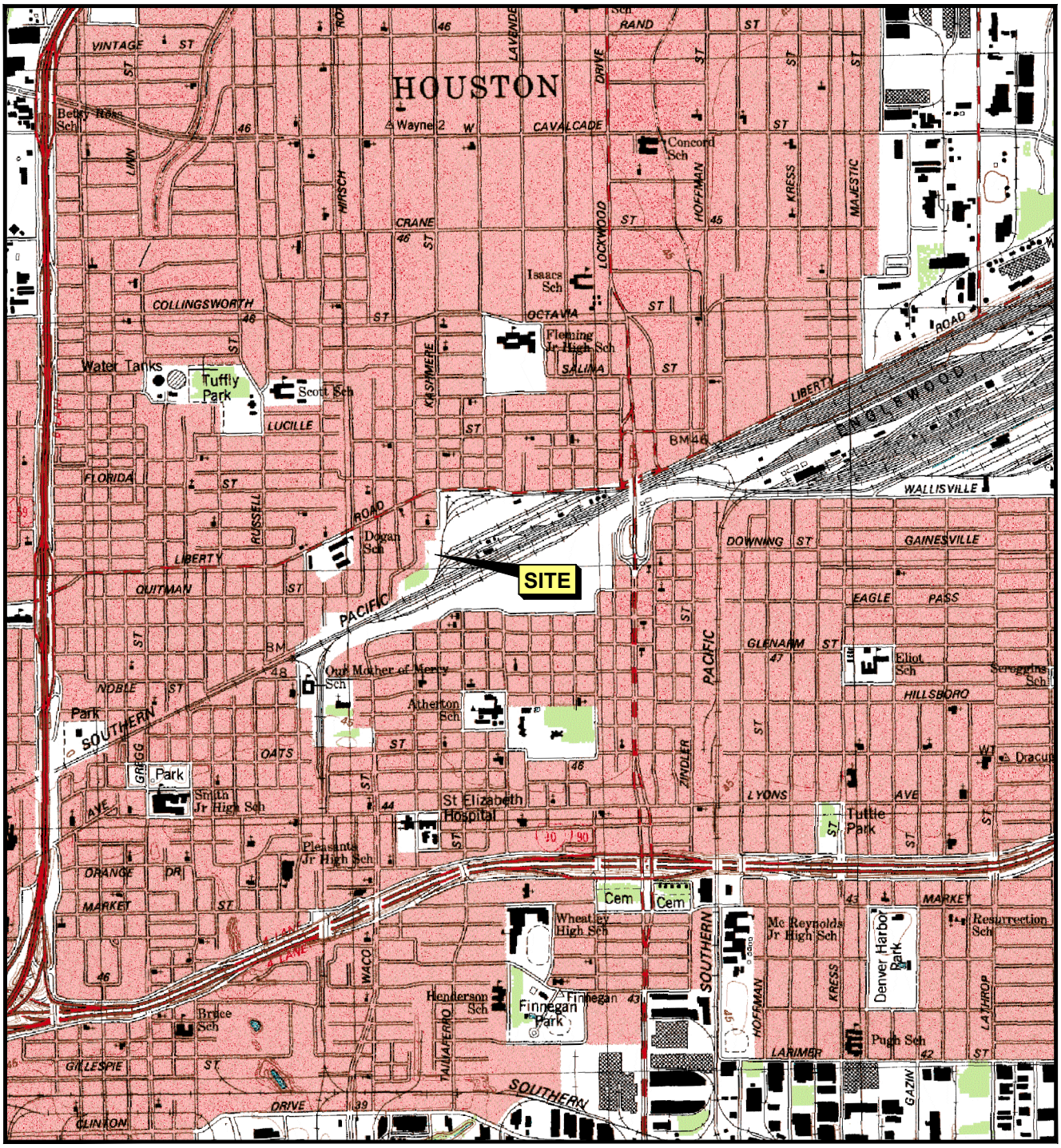
Notes
BTOC = feet below the top of the well casing
ft. MSL = feet above Mean Sea Level
NA = Not Available
*TOC elevations based on December 2010 survey (see Section 3.17)

Table 5
Compliance Status of Wells and Piezometers
Semiannual Monitoring Report: 2013 First Semiannual Event

Houston Wood Preserving Works
Houston, Texas

Zone	Monitoring Well Location	Well Designation	Compliance Status
A-TZ Monitoring Location	MW-01A	Point of Compliance	Compliant
	MW-02	Point of Compliance	Compliant
	MW-07	Point of Compliance	Compliant
	MW-08	Background Well	Compliant
	MW-10A	Point of Compliance	Compliant
	MW-11A	Point of Compliance	Compliant
B-TZ Monitoring Location	MW-10B	Point of Compliance	Compliant
	MW-11B	Point of Compliance	Compliant
	P-10	Point of Compliance	Compliant
	P-12	Background Well	Compliant

FIGURES



QUADRANGLE LOCATION

Scale in Feet

0 1000 2000

Source:
U.S.G.S. 7.5 minute quadrangle, Settegast, Texas, 1982.

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HOUSTON WOOD PRESERVING WORKS

Figure 1

SITE LOCATION MAP

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JUNE, 2013	CHECKED: ECM	

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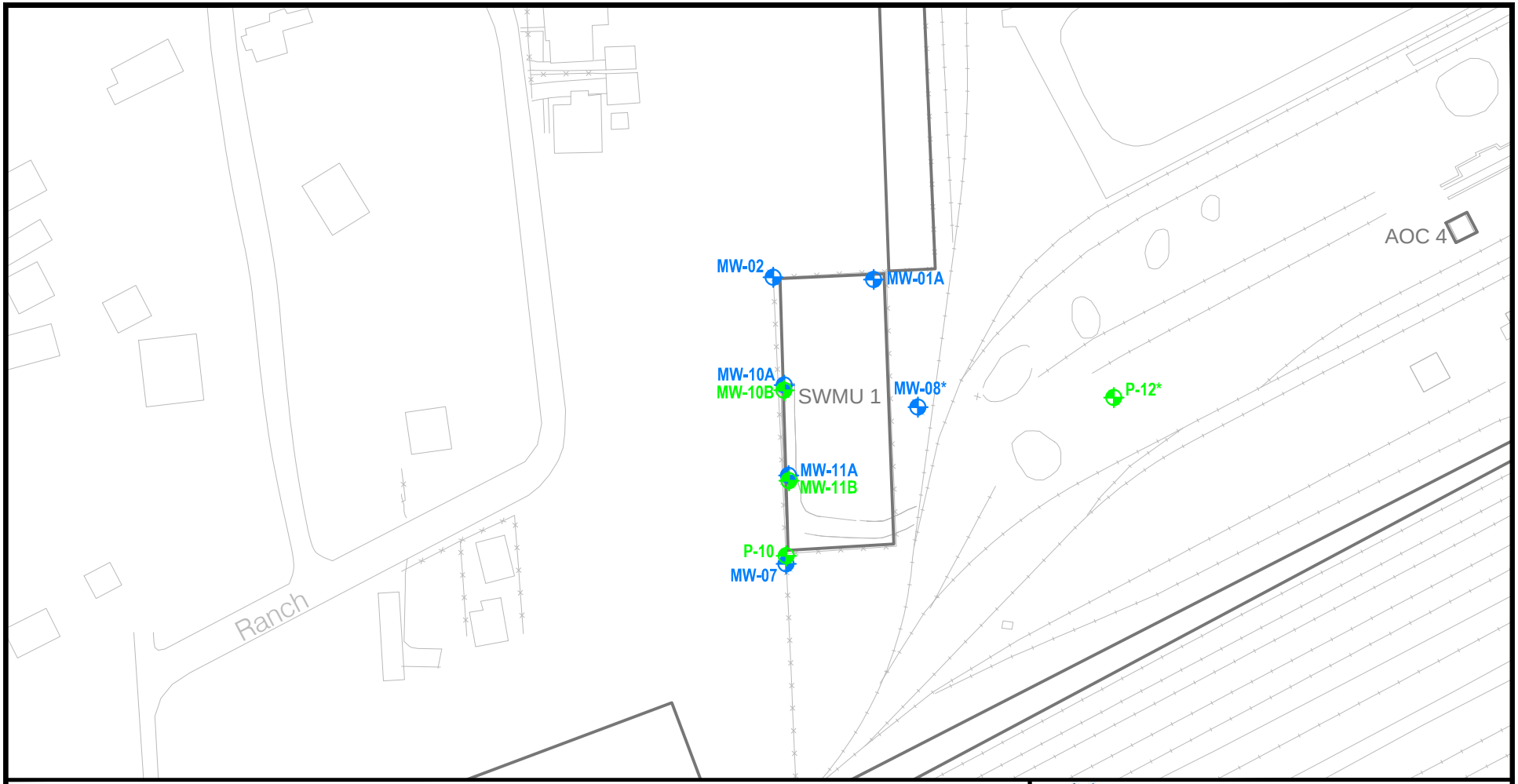

EXPLANATION

- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location
- B-TZ Monitoring Well Location

Note:
* Background well.

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N

Approx. Scale in Feet

0 60 120

Source:
Base map from ERM-Southwest, Inc
0014419a310.dwg, 6/19/2006.

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HOUSTON WOOD PRESERVING WORKS

Figure 2

CORRECTIVE ACTION MONITORING WELL NETWORK TCEQ PERMIT UNIT NO. 1

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JUNE, 2013	CHECKED: ECM	

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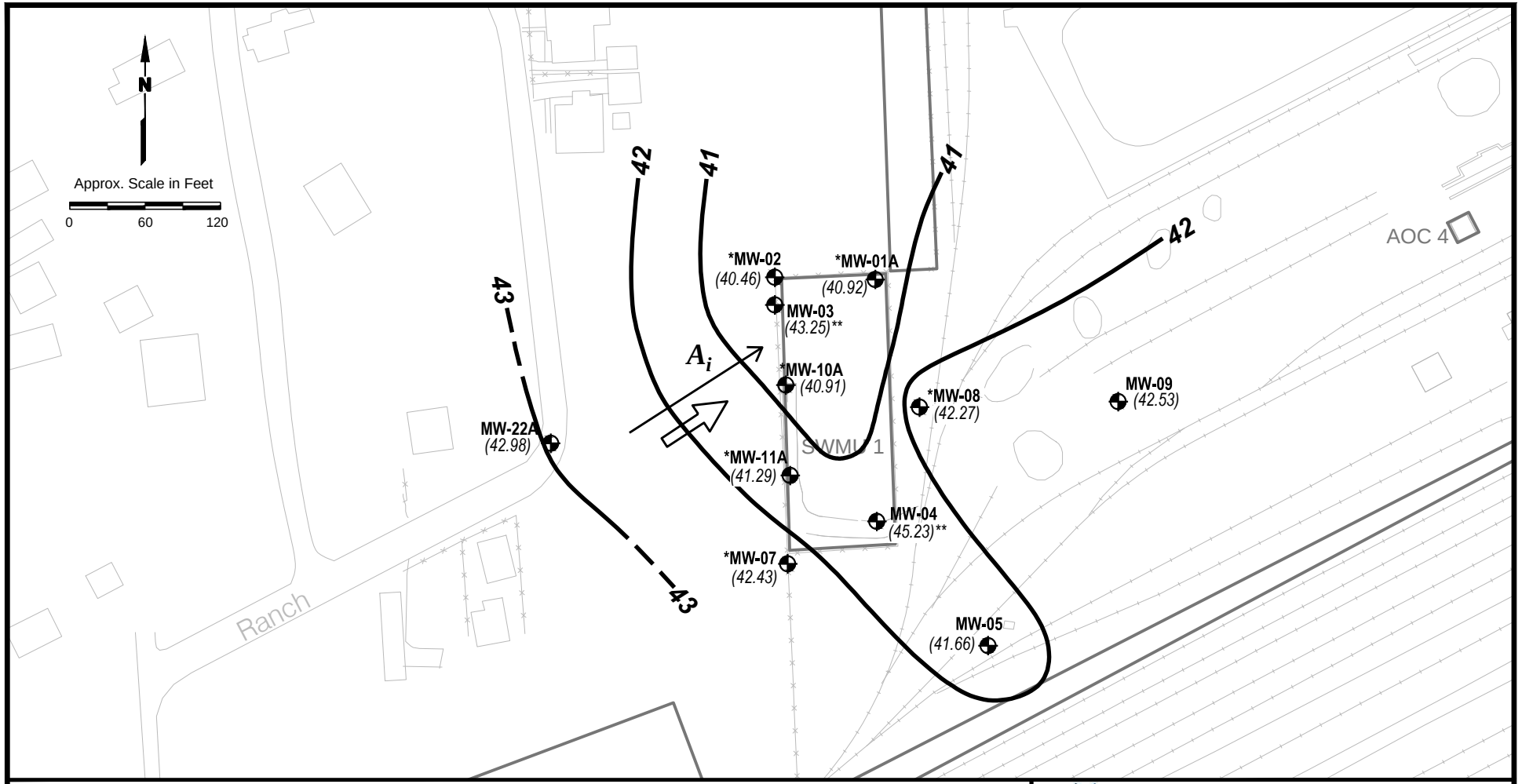

EXPLANATION

- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- A-TZ Monitoring Well Location (* - Compliance Well)
- (42.43) Groundwater Elevation (Ft, MSL) (** - data not used to develop potentiometric contour)
- 41 Groundwater Elevation Contour (Ft, MSL) C.I.= 1 Ft (dashed where inferred)
- General Groundwater Flow Direction

ESTIMATED GRADIENT

$A_i \rightarrow A_i = \frac{1ft}{70ft} = 0.014\ ft/ft$

Source:
Base map from ERM-Southwest, Inc
0014419a310.dwg, 6/19/2006.

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Figure 3

A-TZ POTENTIOMETRIC SURFACE CONTOUR MAP JANUARY 7, 2013

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JUNE, 2013	CHECKED: ECM	

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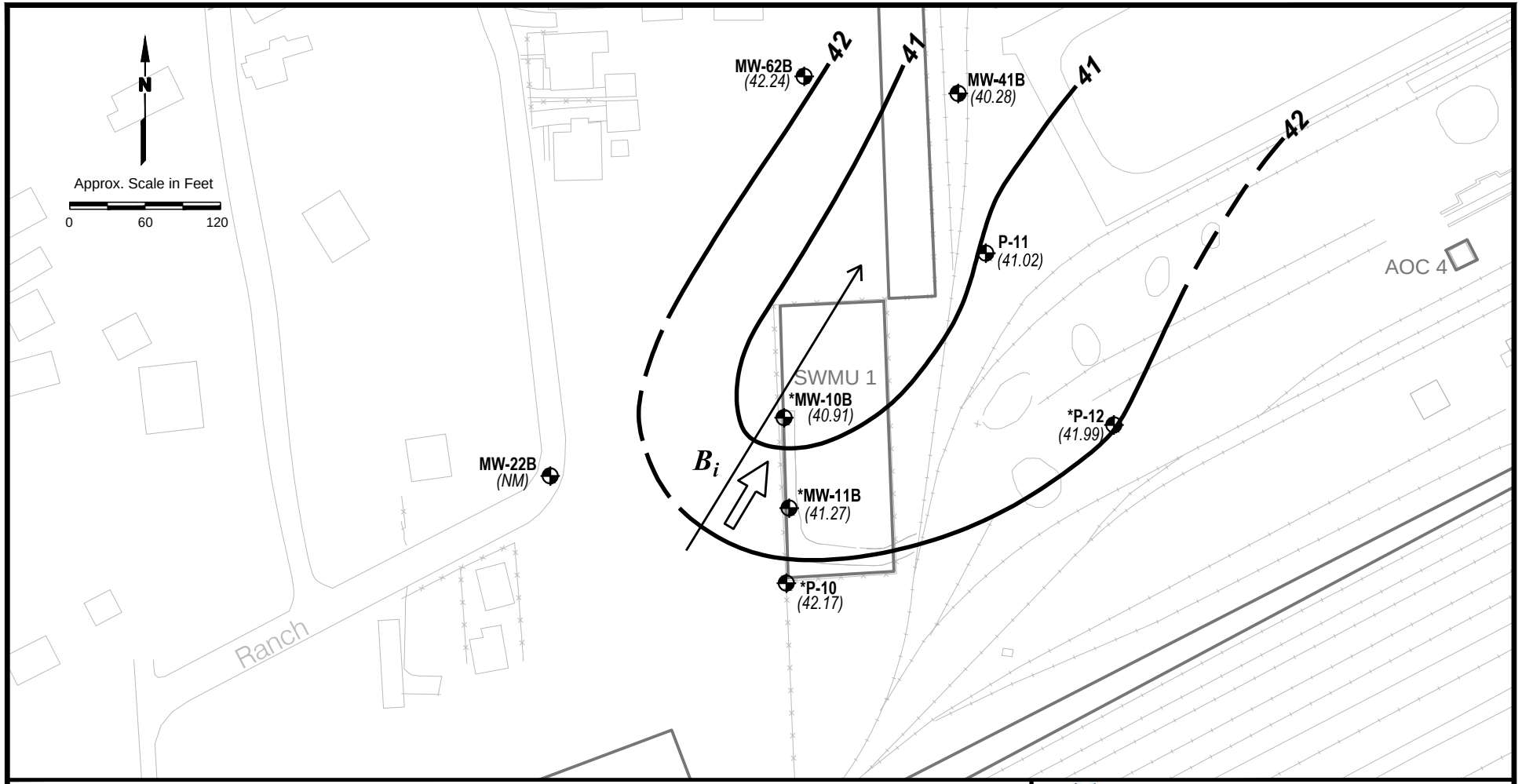

EXPLANATION

- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- B-TZ Monitoring Well Location (* - Compliance Well)
- (44.59) Groundwater Elevation (Ft, MSL) (NM= Not Measured)
- 41 Groundwater Elevation Contour (Ft, MSL) C.I.= 1 Ft (dashed where inferred)
- General Groundwater Flow Direction

ESTIMATED GRADIENT

$B_i \rightarrow B_i = \frac{1ft}{80ft} = 0.0125\ ft/ft$

Source:
Base map from ERM-Southwest, Inc
0014419a310.dwg, 6/19/2006.

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Figure 4

B-TZ POTENTIOMETRIC SURFACE CONTOUR MAP JANUARY 7, 2013

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JUNE, 2013	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
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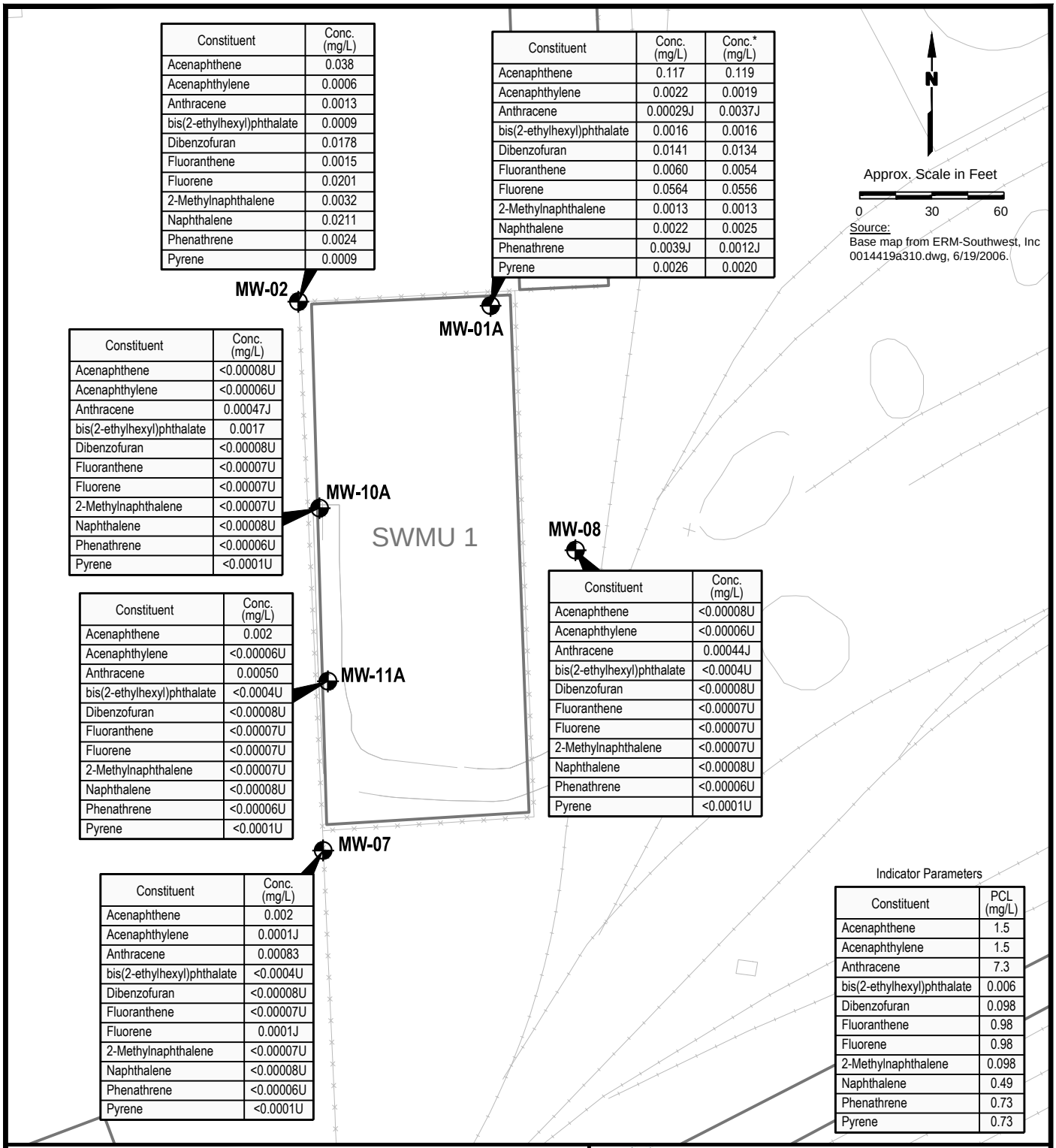

Constituent	Conc. (mg/L)
Acenaphthene	0.038
Acenaphthylene	0.0006
Anthracene	0.0013
bis(2-ethylhexyl)phthalate	0.0009
Dibenzofuran	0.0178
Fluoranthene	0.0015
Fluorene	0.0201
2-Methylnaphthalene	0.0032
Naphthalene	0.0211
Phenathrene	0.0024
Pyrene	0.0009

Constituent	Conc. (mg/L)	Conc.* (mg/L)
Acenaphthene	0.117	0.119
Acenaphthylene	0.0022	0.0019
Anthracene	0.00029J	0.0037J
bis(2-ethylhexyl)phthalate	0.0016	0.0016
Dibenzofuran	0.0141	0.0134
Fluoranthene	0.0060	0.0054
Fluorene	0.0564	0.0556
2-Methylnaphthalene	0.0013	0.0013
Naphthalene	0.0022	0.0025
Phenathrene	0.0039J	0.0012J
Pyrene	0.0026	0.0020

Constituent	Conc. (mg/L)
Acenaphthene	<0.00008U
Acenaphthylene	<0.00006U
Anthracene	0.00047J
bis(2-ethylhexyl)phthalate	0.0017
Dibenzofuran	<0.00008U
Fluoranthene	<0.00007U
Fluorene	<0.00007U
2-Methylnaphthalene	<0.00007U
Naphthalene	<0.00008U
Phenathrene	<0.00006U
Pyrene	<0.0001U

Constituent	Conc. (mg/L)
Acenaphthene	0.002
Acenaphthylene	<0.00006U
Anthracene	0.00050
bis(2-ethylhexyl)phthalate	<0.0004U
Dibenzofuran	<0.00008U
Fluoranthene	<0.00007U
Fluorene	<0.00007U
2-Methylnaphthalene	<0.00007U
Naphthalene	<0.00008U
Phenathrene	<0.00006U
Pyrene	<0.0001U

Constituent	Conc. (mg/L)
Acenaphthene	<0.00008U
Acenaphthylene	<0.00006U
Anthracene	0.00044J
bis(2-ethylhexyl)phthalate	<0.0004U
Dibenzofuran	<0.00008U
Fluoranthene	<0.00007U
Fluorene	<0.00007U
2-Methylnaphthalene	<0.00007U
Naphthalene	<0.00008U
Phenathrene	<0.00006U
Pyrene	<0.0001U

Constituent	Conc. (mg/L)
Acenaphthene	0.002
Acenaphthylene	0.0001J
Anthracene	0.00083
bis(2-ethylhexyl)phthalate	<0.0004U
Dibenzofuran	<0.00008U
Fluoranthene	<0.00007U
Fluorene	0.0001J
2-Methylnaphthalene	<0.00007U
Naphthalene	<0.00008U
Phenathrene	<0.00006U
Pyrene	<0.0001U

Indicator Parameters

Constituent	PCL (mg/L)
Acenaphthene	1.5
Acenaphthylene	1.5
Anthracene	7.3
bis(2-ethylhexyl)phthalate	0.006
Dibenzofuran	0.098
Fluoranthene	0.98
Fluorene	0.98
2-Methylnaphthalene	0.098
Naphthalene	0.49
Phenathrene	0.73
Pyrene	0.73

EXPLANATION

Fence

Railroad

A-TZ Monitoring Well Location

Notes:
1. * Duplicates sample taken at MW-01A.
2. Sample collected on January 9-10, 2013.
3. J= Estimated value between SQL and MDL.
4. U= Value not detected greater than the MDL.

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Figure 5

A-TZ REPORTED CONCENTRATIONS 2013 1st SEMI ANNUAL MONITORING EVENT

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JUNE, 2013	CHECKED: ECM	

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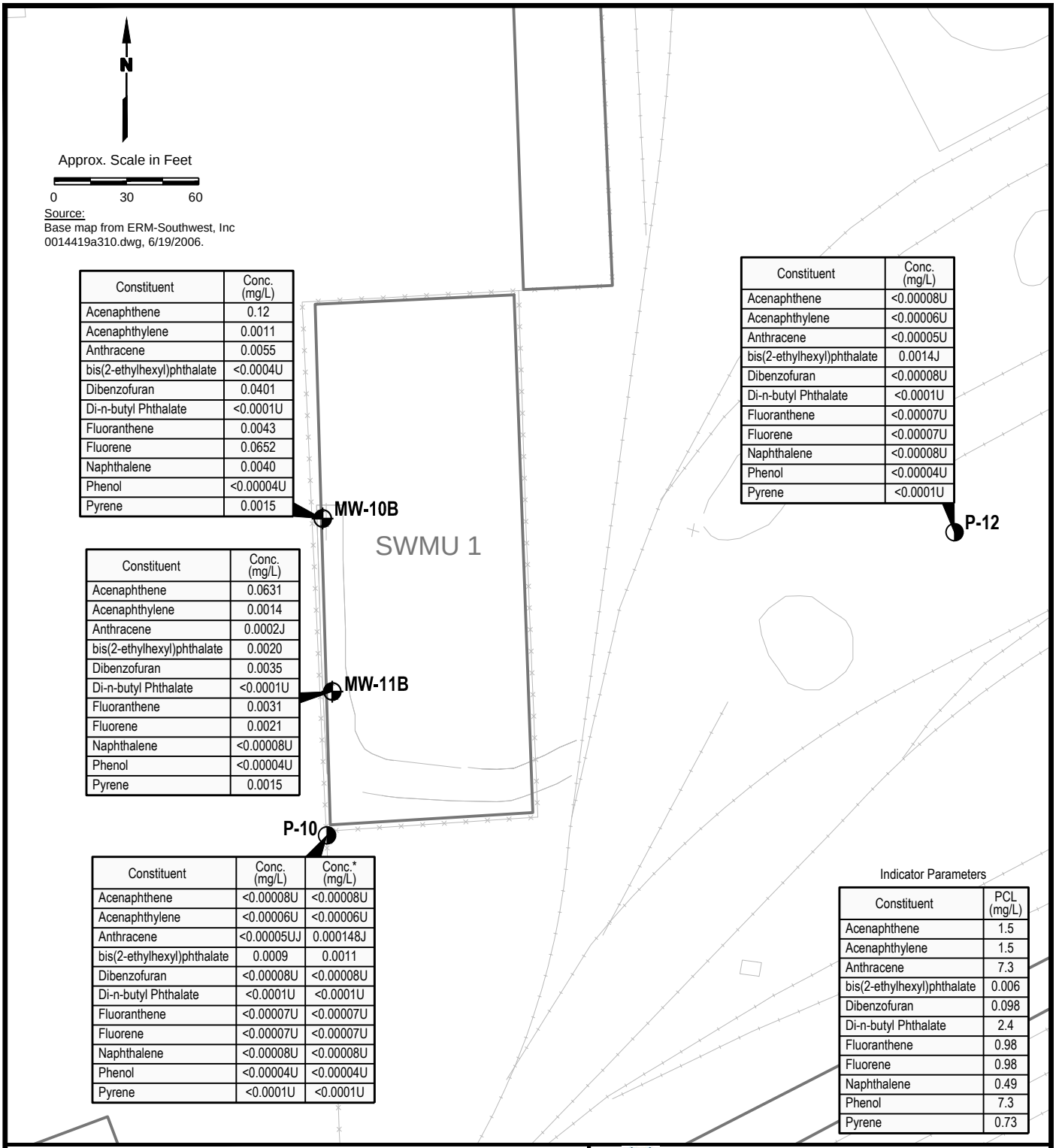

Constituent	Conc. (mg/L)
Acenaphthene	0.12
Acenaphthylene	0.0011
Anthracene	0.0055
bis(2-ethylhexyl)phthalate	<0.0004U
Dibenzofuran	0.0401
Di-n-butyl Phthalate	<0.0001U
Fluoranthene	0.0043
Fluorene	0.0652
Naphthalene	0.0040
Phenol	<0.00004U
Pyrene	0.0015

Constituent	Conc. (mg/L)
Acenaphthene	0.0631
Acenaphthylene	0.0014
Anthracene	0.0002J
bis(2-ethylhexyl)phthalate	0.0020
Dibenzofuran	0.0035
Di-n-butyl Phthalate	<0.0001U
Fluoranthene	0.0031
Fluorene	0.0021
Naphthalene	<0.00008U
Phenol	<0.00004U
Pyrene	0.0015

Constituent	Conc. (mg/L)	Conc.* (mg/L)
Acenaphthene	<0.00008U	<0.00008U
Acenaphthylene	<0.00006U	<0.00006U
Anthracene	<0.00005UJ	0.000148J
bis(2-ethylhexyl)phthalate	0.0009	0.0011
Dibenzofuran	<0.00008U	<0.00008U
Di-n-butyl Phthalate	<0.0001U	<0.0001U
Fluoranthene	<0.00007U	<0.00007U
Fluorene	<0.00007U	<0.00007U
Naphthalene	<0.00008U	<0.00008U
Phenol	<0.00004U	<0.00004U
Pyrene	<0.0001U	<0.0001U

Constituent	Conc. (mg/L)
Acenaphthene	<0.00008U
Acenaphthylene	<0.00006U
Anthracene	<0.00005U
bis(2-ethylhexyl)phthalate	0.0014J
Dibenzofuran	<0.00008U
Di-n-butyl Phthalate	<0.0001U
Fluoranthene	<0.00007U
Fluorene	<0.00007U
Naphthalene	<0.00008U
Phenol	<0.00004U
Pyrene	<0.0001U

Indicator Parameters

Constituent	PCL (mg/L)
Acenaphthene	1.5
Acenaphthylene	1.5
Anthracene	7.3
bis(2-ethylhexyl)phthalate	0.006
Dibenzofuran	0.098
Di-n-butyl Phthalate	2.4
Fluoranthene	0.98
Fluorene	0.98
Naphthalene	0.49
Phenol	7.3
Pyrene	0.73

EXPLANATION

- Fence
- Railroad
- B-TZ Monitoring Well Location
- Piezometer Location

Notes:
1. * Duplicates sample taken at P-10.
2. Sample collected on January 9-10, 2013.
3. J= Estimated value between SQL and MDL.
4. U= Value not detected greater than the MDL.

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HOUSTON WOOD PRESERVING WORKS

Figure 6

B-TZ REPORTED CONCENTRATIONS 2013 1st SEMI ANNUAL MONITORING EVENT

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: JUNE, 2013	CHECKED: ECM	

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APPENDIX A
COMPLIANCE PLAN TABLES

TABLE III - CORRECTIVE ACTION PROGRAM
Table of Detected Hazardous and Solid Waste Constituents and
Concentration Limits for the Ground-Water Protection Standard

Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)

A-Transmissive Zone		B-Transmissive Zone	
COLUMN A Hazardous Constituents	COLUMN B Concentration Limits (mg/l)	COLUMN A Hazardous Constituents	COLUMN B Concentration Limits (mg/l)
Acenaphthene	1.5[PCL]	Acenaphthene	1.5[PCL]
Acenaphthylene	1.5[PCL]	Acenaphthylene	1.5[PCL]
Anthracene	7.3[PCL]	Anthracene	7.3[PCL]
Dibenzofuran	0.098[PCL]	Dibenzofuran	0.098[PCL]
Bis(2-ethylhexyl)phthalate	0.006[PCL]	Bis(2-ethylhexyl)phthalate	0.006[PCL]
Fluoranthene	0.98[PCL]	Fluoranthene	0.98[PCL]
Fluorene	0.98[PCL]	Fluorene	0.98[PCL]
2-Methylnaphthalene	0.098[PCL]	Di-n-butyl phthalate	2.4[PCL]
Naphthalene	0.49[PCL]	Naphthalene	0.49[PCL]
Phenanthrene	0.73[PCL]	Phenol	7.3[PCL]
Pyrene	0.73[PCL]	Pyrene	0.73[PCL]

PCL Alternate Concentration Limit pursuant to 30 TAC §335.160(b) based upon the Protective Concentration Level determined under 30 TAC Chapter 350 for Residential Land Use. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

TABLE V
Designation of Wells by Function

POINT OF COMPLIANCE WELLS

1. Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)
A-Transmissive Zone: MW-01A, MW-02, MW-07, MW-10A, and MW-11A
B-Transmissive Zone: MW-10B, MW-11B, and P-10

POINT OF EXPOSURE WELLS

1. Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)
None

BACKGROUND WELLS

1. Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)
A-Transmissive Zone: MW-8
B-Transmissive Zone: P-12

Note: Wells and piezometers identified on Attachment A maps that are not listed in this table are subject to change, upon approval by the executive director, without modification to the Compliance Plan. The wells and piezometers for the Closed Surface Impoundment are depicted on Attachment A, Sheets 3 and 4.

APPENDIX B
FIELD PARAMETERS

Table B-1
Groundwater Sampling Field Parameters
Semiannual Monitoring Report: 2013 First Semiannual Event

Houston Wood Preserving Works
Houston, Texas

Field Parameter	Monitoring Well IDs									
	A-Transmissive Zone						B-Transmissive Zone			
	MW-01A	MW-02	MW-07	MW-08	MW-10A	MW-11A	MW-10B	MW-11B	P-10	P-12
	1/9/2013	1/9/2013	1/10/2013	1/10/2013	1/9/2013	1/9/2013	1/9/2013	1/9/2013	1/10/2013	1/10/2013
Time Sampled (hrs CST)	14:20	12:00	9:15	10:45	10:00	8:00	11:00	9:00	8:20	15:30
Temperature (ºC)	22.6	23.1	23.2	24.1	23.7	22.9	23.4	23.7	23.6	24.2
pH (Standard Units)	6.79	6.96	6.91	6.63	6.74	6.78	6.93	6.79	6.81	6.79
Specific Conductivity (mmhos/cm)	1,790	2,160	2,310	2,120	1,910	2,120	2,460	2,030	2,270	2,640
Dissolved Oxygen (mg/L)	0.61	0.77	0.54	0.84	0.34	0.42	0.57	0.91	0.57	0.31
Turbidity (NTU)	4..2	5.7	7.9	7.1	6.2	12.0	9.4	6.1	5.9	7.4

APPENDIX C
LABORATORY ANALYTICAL REPORTS and DATA USABILITY SUMMARIES

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-66920-1
Client Project/Site: UPRR HWPW
Revision: 1

For:
Pastor, Behling & Wheeler LLC
2201 Double Creek Dr
Suite 4004
Round Rock, Texas 78664

Attn: Mr. Eric Matzner

Authorized for release by:
2/1/2013 10:52:13 AM
Cathy Upton
Data Delivery Analyst
cathy.upton@testamericainc.com

Designee for

Sachin Kudchadkar
Project Manager II
sachin.kudchadkar@testamericainc.com

Table of Contents

TestAmerica Houston
TRRP Data Package Cover Page

Job Number: 600-66920-1rev

Project Name/Number: UPRR HWPW

This Data Package consists of:

This signature page, the laboratory review checklist, and the following Reportable Data:

- ☒ R1 Field Chain-of-Custody Form
- ☒ R2 Sample Identification Cross-reference;
- ☒ R3 Test Reports (Analytical Data Sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC Chapter 5
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- ☒ R4 Surrogate Recovery Data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- ☒ R5 Test Reports/Summary Forms for Blank Samples;
- ☒ R6 Test Reports/Summary Forms for Laboratory Control Samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - d) The laboratory's LCS QC limits
- ☒ R7 Test Reports for Matrix Spike/Matrix Spike Duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked sample,
  - d) Calculated %Rs and relative percent differences (RPDs), and
  - e) The laboratory's MS/MSD QC limits
- ☒ R8 Laboratory analytical duplicates (if applicable) recovery and precision, including:
  - a) the amount of analyte measured in the duplicate,
  - b) the calculated RPD, and
  - c) the laboratory's QC limits for analytical duplicates.
- ☒ R9 List of method quantitation limit (MQL) and detectability check sample results for each analyte for each method and matrix;
- ☒ R10 Other problems or anomalies

The exception report for each "No" or "Not Reviewed (NR)" item in the Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under Texas laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm, to the best of my knowledge, that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Cathy Upton		02/01/2013
Name (printed)	Signature	Date
Data Delivery Analyst		
Official Title (printed)		

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: TestAmerica-Houston	LRC Date: 01/25/13
Project Name: UPRR HWPW	Laboratory Job Number: 600-66920
Reviewer Name: JOH	Prep Batch Number(s): 600-97360 – SV

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soil/solid samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?		X			2
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?	X				3
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: TestAmerica-Houston	LRC Date: 01/25/13
Project Name: UPRR HWPW	Laboratory Job Number: 600-66920
Reviewer Name: JOH	Prep Batch Number(s): 600-97360 – SV

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data (NELAC section 5.5.10)**					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods (NELAC Chapter 5)**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Appendix A (cont'd): Laboratory Review Checklist: Exception Reports	
Laboratory Name: TestAmerica-Houston	LRC Date: 01/25/13
Project Name: UPRR HWPW	Laboratory Job Number: 600-66920
Reviewer Name: JOH	Prep Batch Number(s): 600-97360 – SV

ER #[1]	DESCRIPTION
1	Surrogate (TBP) recoveries for samples 600-66920-5 and 6 were outside control limits. Evidence of matrix interference is present, as seen in the need for a dilution because of the high concentration of target analytes.
2	The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 97360 was outside control limits due to possible matrix interference. Since the recoveries were within acceptance limits, the data have been qualified and reported.
3	The Acenaphthene SDLs in samples 600-66920-2, 4, 5, 6 and 7 and the Fluorene SDLs in samples 600-66920-4, 6 and 7 were elevated due to the high concentrations of these analytes. The Dibenzofuran SDL in sample 600-66920-4 was elevated due to the high concentration of this analyte.

ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC)

Quality Control Report
Detection Check Standard

Matrix:	Water
Method:	8270C LL
Preparation:	3510C
Date Analyzed:	10/18/2012
Date Prepared:	10/16/2012
Lab Sample ID:	600-91246_18-a
Units:	ug/L

Analyte	MDL	DCS Spike	DCS Result	MQL
Pyridine	0.04	0.25	0.067	0.5
N-Nitrosodimethyalamine	0.26	0.25	0.121	0.5
Aniline	0.08	0.25	0.085	0.5
Phenol	0.04	0.25	0.054	0.5
bis(2-Chloroethyl)ether	0.15	0.25	0.149	0.5
2-Chlorophenol	0.13	0.25	0.097	0.5
1,3-Dichlorobenzene	0.17	0.25	0.152	0.5
1,4-Dichlorobenzene	0.13	0.25	0.166	0.5
1,2-Dichlorobenzene	0.17	0.25	0.167	0.5
Benzyl alcohol	0.17	0.25	0.075	0.5
2-Methylphenol	0.12	0.25	0.112	0.5
m&p-Cresols	0.2	0.25	0.053	1
bis (2-Chloroisopropyl) ether	0.4	0.25	0.143	0.5
N-Nitroso-di-n-propylamine	0.1	0.25	0.177	0.5
Hexachloroethane	0.1	0.25	0.185	0.5
Nitrobenzene	0.11	0.25	0.131	0.5
Isophorone	0.11	0.25	0.149	0.5
2-Nitrophenol	0.22	0.5	0.205	0.5
Benzoic acid	2.51	5	6.530	2.5
2,4-Dimethylphenol	0.31	0.5	0.130	0.5
bis(2-Chloroethoxy)methane	0.13	0.25	0.122	0.5
2,4-Dichlorophenol	0.15	0.25	0.068	0.5
1,2,4-Trichlorobenzene	0.12	0.25	0.125	0.5
Naphthalene	0.08	0.25	0.161	0.5
4-Chloroaniline	0.21	0.5	0.232	0.5
Hexachlorobutadiene	0.18	0.25	0.160	0.5
4-Chloro-3-methylphenol	0.17	0.25	0.075	0.5
2-Methylnaphthalene	0.07	0.25	0.128	0.5
1-Methylnaphthalene	0.09	0.25	0.147	0.5
Hexachlorocyclopentadiene	0.13	0.5	0.487	0.5
2,4,6-Trichlorophenol	0.18	0.5	0.062	0.5
2,4,5-Trichlorophenol	0.25	0.5	0.107	0.5
2-Chloronaphthalene	0.08	0.25	0.148	0.5
2-Nitroaniline	0.19	0.5	0.213	0.5
Dimethylphthalate	0.07	0.25	0.145	0.5
1,4 Dinitrobenzene	5	0.25	0.363	0.5
1,3-Dinitrobenzene	0.08	0.25	0.381	0.5
1,2-Dinitrobenzene	0.5	0.25	0.040	0.5
Acenaphthylene	0.06	0.25	0.137	0.5

2,6-Dinitrotoluene	0.08	0.25	0.178	0.5
3-Nitroaniline	0.16	0.5	0.240	0.5
Acenaphthene	0.08	0.25	0.151	0.5
Dibenzofuran	0.08	0.25	0.127	0.5
2,4-Dinitrotoluene	0.13	0.25	0.144	0.5
Diethylphthalate	1.5	0.5	0.431	0.5
4-Chlorophenyl-phenylether	0.1	0.25	0.102	0.5
Fluorene	0.07	0.25	0.107	0.5
4-Nitroaniline	0.25	0.5	0.124	0.5
4,6-Dinitro-2-Methylphenol	0.83	2.5	0.530	1
N-Nitrosodiphenylamine	0.1	0.25	0.176	0.5
Diphenylamine	0.1	0.25	0.099	0.5
1,2-Diphenylhydrazine	0.11	0.25	0.224	0.5
Azobenzene	0.07	0.25	0.117	0.5
4-Bromophenyl-phenylether	0.1	0.25	0.112	0.5
Hexachlorobenzene	0.11	0.25	0.130	0.5
Phenanthrene	0.06	0.25	0.169	0.5
Anthracene	0.05	0.25	0.144	0.5
Carbazole	0.17	0.25	0.140	0.5
Di-n-butylphthalate	0.11	0.25	0.238	0.5
Fluoranthene	0.07	0.25	0.196	0.5
Pyrene	0.11	0.25	0.153	0.5
Butylbenzylphthalate	0.12	0.25	0.238	0.5
3,3'-Dichlorobenzidene	0.5	0.25	0.066	0.5
Benzo(a)anthracene	0.08	0.25	0.175	0.5
bis(2-Ethylhexl)phthalate	0.37	0.5	0.420	0.5
Chrysene	0.08	0.25	0.212	0.5
Di-n-octylphthalate	0.16	0.25	0.091	0.5
Benzo(b)fluoranthene	0.07	0.25	0.143	0.5
Benzo(k)fluoranthene	0.09	0.25	0.201	0.5
Benzo(a)pyrene	0.08	0.25	0.137	0.5
Indeno(1,2,3-cd)pyrene	0.07	0.25	0.454	0.5
Dibenz(a,h)anthracene	0.08	0.25	0.123	0.5
Benzo(g,h,i)perylene	0.08	0.25	0.112	0.5

Job ID: 600-66920-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-66920-1

Comments
The report was revised on 02/01/13 to update the checklist.

Receipt
The samples were received on 1/10/2013 12:56 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.3º C, 3.9º C and 5.4º C.

Except:

The Chain of Custody was received without a specified TAT listed.

Method Summary

Client: Pastor, Behling & Wheeler LLC
Project/Site: UPRR HWPW

TestAmerica Job ID: 600-66920-1

Method	Method Description	Protocol	Laboratory
8270C LL	Semivolatile Organic Compounds by GCMS - Low Levels	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Pastor, Behling & Wheeler LLC
Project/Site: UPRR HWPW

TestAmerica Job ID: 600-66920-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-66920-1	WG-1620-MW11A-20130109	Water	01/09/13 08:00	01/10/13 12:56
600-66920-2	WG-1620-MW11B-20130109	Water	01/09/13 09:00	01/10/13 12:56
600-66920-3	WG-1620-MW10A-20130109	Water	01/09/13 10:00	01/10/13 12:56
600-66920-4	WG-1620-MW10B-20130109	Water	01/09/13 11:00	01/10/13 12:56
600-66920-5	WG-1620-MW02-20130109	Water	01/09/13 12:00	01/10/13 12:56
600-66920-6	WG-1620-MW01A-20130109	Water	01/09/13 14:20	01/10/13 12:56
600-66920-7	WG-1620-FD01-20130109	Water	01/09/13 14:20	01/10/13 12:56
600-66920-8	WG-1620-P12-20130109	Water	01/09/13 15:30	01/10/13 12:56
600-66920-11	WG-1620-FB01-20130109	Water	01/09/13 16:15	01/10/13 12:56
600-66920-12	WG-1620-P10-20130110	Water	01/10/13 08:20	01/10/13 12:56
600-66920-13	WG-1620-FD02-20130110	Water	01/10/13 08:20	01/10/13 12:56
600-66920-14	WG-1620-MW07-20130110	Water	01/10/13 09:15	01/10/13 12:56
600-66920-15	WG-1620-MW08-201230110	Water	01/10/13 10:45	01/10/13 12:56
600-66920-16	WG-1620-FB02-20130110	Water	01/10/13 11:15	01/10/13 12:56

Client Sample ID: WG-1620-MW11A-20130109

Lab Sample ID: 600-66920-1

Date Collected: 01/09/13 08:00

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 16:37	1
2-Methylnaphthalene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 16:37	1
Acenaphthylene	0.0000566	U	0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 16:37	1
Acenaphthene	**0.00175**		0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 16:37	1
Dibenzofuran	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 16:37	1
Fluorene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 16:37	1
Phenanthrene	0.0000566	U	0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 16:37	1
Anthracene	**0.000499**		0.000472	0.0000472	mg/L		01/15/13 10:58	01/15/13 16:37	1
Fluoranthene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 16:37	1
Pyrene	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 16:37	1
Bis(2-ethylhexyl) phthalate	0.000349	U	0.000472	0.000349	mg/L		01/15/13 10:58	01/15/13 16:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*19*		*10 - 94*	*01/15/13 10:58*	*01/15/13 16:37*	*1*
2,4,6-Tribromophenol	*57*		*10 - 123*	*01/15/13 10:58*	*01/15/13 16:37*	*1*
2-Fluorobiphenyl	*71*		*43 - 116*	*01/15/13 10:58*	*01/15/13 16:37*	*1*
2-Fluorophenol	*30*		*10 - 100*	*01/15/13 10:58*	*01/15/13 16:37*	*1*
Nitrobenzene-d5	*74*		*35 - 114*	*01/15/13 10:58*	*01/15/13 16:37*	*1*
Terphenyl-d14	*75*		*33 - 141*	*01/15/13 10:58*	*01/15/13 16:37*	*1*

Client Sample ID: WG-1620-MW11B-20130109

Lab Sample ID: 600-66920-2

Date Collected: 01/09/13 09:00

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.0000377	U	0.000472	0.0000377	mg/L		01/15/13 10:58	01/15/13 17:04	1
Naphthalene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 17:04	1
Acenaphthylene	**0.00136**		0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 17:04	1
Dibenzofuran	**0.00352**		0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 17:04	1
Fluorene	**0.00205**		0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 17:04	1
Anthracene	**0.000168**	**J**	0.000472	0.0000472	mg/L		01/15/13 10:58	01/15/13 17:04	1
Di-n-butyl phthalate	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 17:04	1
Fluoranthene	**0.00307**		0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 17:04	1
Pyrene	**0.00154**		0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 17:04	1
Bis(2-ethylhexyl) phthalate	**0.00195**		0.000472	0.000349	mg/L		01/15/13 10:58	01/15/13 17:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*25*		*10 - 94*	*01/15/13 10:58*	*01/15/13 17:04*	*1*
2,4,6-Tribromophenol	*102*		*10 - 123*	*01/15/13 10:58*	*01/15/13 17:04*	*1*
2-Fluorobiphenyl	*80*		*43 - 116*	*01/15/13 10:58*	*01/15/13 17:04*	*1*
2-Fluorophenol	*40*		*10 - 100*	*01/15/13 10:58*	*01/15/13 17:04*	*1*
Nitrobenzene-d5	*78*		*35 - 114*	*01/15/13 10:58*	*01/15/13 17:04*	*1*
Terphenyl-d14	*98*		*33 - 141*	*01/15/13 10:58*	*01/15/13 17:04*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels - DL

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.0631**		0.00472	0.000755	mg/L		01/15/13 10:58	01/17/13 11:36	10

Client Sample ID: WG-1620-MW11B-20130109

Lab Sample ID: 600-66920-2

Date Collected: 01/09/13 09:00

Matrix: Water

Date Received: 01/10/13 12:56

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d6	*20*		*10 - 94*	*01/15/13 10:58*	*01/17/13 11:36*	*10*
2,4,6-Tribromophenol	*84*		*10 - 123*	*01/15/13 10:58*	*01/17/13 11:36*	*10*
2-Fluorobiphenyl	*84*		*43 - 116*	*01/15/13 10:58*	*01/17/13 11:36*	*10*
2-Fluorophenol	*37*		*10 - 100*	*01/15/13 10:58*	*01/17/13 11:36*	*10*
Nitrobenzene-d5	*63*		*35 - 114*	*01/15/13 10:58*	*01/17/13 11:36*	*10*
Terphenyl-d14	*82*		*33 - 141*	*01/15/13 10:58*	*01/17/13 11:36*	*10*

Client Sample ID: WG-1620-MW10A-20130109

Lab Sample ID: 600-66920-3

Date Collected: 01/09/13 10:00

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.0000762	U	0.000476	0.0000762	mg/L		01/15/13 10:58	01/15/13 17:30	1
2-Methylnaphthalene	0.0000667	U	0.000476	0.0000667	mg/L		01/15/13 10:58	01/15/13 17:30	1
Acenaphthylene	0.0000571	U	0.000476	0.0000571	mg/L		01/15/13 10:58	01/15/13 17:30	1
Acenaphthene	0.0000762	U	0.000476	0.0000762	mg/L		01/15/13 10:58	01/15/13 17:30	1
Dibenzofuran	0.0000762	U	0.000476	0.0000762	mg/L		01/15/13 10:58	01/15/13 17:30	1
Fluorene	0.0000667	U	0.000476	0.0000667	mg/L		01/15/13 10:58	01/15/13 17:30	1
Phenanthrene	0.0000571	U	0.000476	0.0000571	mg/L		01/15/13 10:58	01/15/13 17:30	1
Anthracene	**0.000468**	**J**	0.000476	0.0000476	mg/L		01/15/13 10:58	01/15/13 17:30	1
Fluoranthene	0.0000667	U	0.000476	0.0000667	mg/L		01/15/13 10:58	01/15/13 17:30	1
Pyrene	0.000105	U	0.000476	0.000105	mg/L		01/15/13 10:58	01/15/13 17:30	1
Bis(2-ethylhexyl) phthalate	**0.00171**		0.000476	0.000352	mg/L		01/15/13 10:58	01/15/13 17:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d6	*20*		*10 - 94*	*01/15/13 10:58*	*01/15/13 17:30*	*1*
2,4,6-Tribromophenol	*86*		*10 - 123*	*01/15/13 10:58*	*01/15/13 17:30*	*1*
2-Fluorobiphenyl	*72*		*43 - 116*	*01/15/13 10:58*	*01/15/13 17:30*	*1*
2-Fluorophenol	*32*		*10 - 100*	*01/15/13 10:58*	*01/15/13 17:30*	*1*
Nitrobenzene-d5	*73*		*35 - 114*	*01/15/13 10:58*	*01/15/13 17:30*	*1*
Terphenyl-d14	*80*		*33 - 141*	*01/15/13 10:58*	*01/15/13 17:30*	*1*

Client Sample ID: WG-1620-MW10B-20130109

Lab Sample ID: 600-66920-4

Date Collected: 01/09/13 11:00

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.0000377	U	0.000472	0.0000377	mg/L		01/15/13 10:58	01/15/13 17:57	1
Naphthalene	**0.00399**		0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 17:57	1
Acenaphthylene	**0.00108**		0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 17:57	1
Anthracene	**0.00546**		0.000472	0.0000472	mg/L		01/15/13 10:58	01/15/13 17:57	1
Di-n-butyl phthalate	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 17:57	1
Fluoranthene	**0.00427**		0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 17:57	1
Pyrene	**0.00146**		0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 17:57	1
Bis(2-ethylhexyl) phthalate	0.000349	U	0.000472	0.000349	mg/L		01/15/13 10:58	01/15/13 17:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d6	*23*		*10 - 94*	*01/15/13 10:58*	*01/15/13 17:57*	*1*
2,4,6-Tribromophenol	*91*		*10 - 123*	*01/15/13 10:58*	*01/15/13 17:57*	*1*

Client Sample ID: WG-1620-MW10B-20130109

Lab Sample ID: 600-66920-4

Date Collected: 01/09/13 11:00

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	90		43 - 116	01/15/13 10:58	01/15/13 17:57	1
2-Fluorophenol	45		10 - 100	01/15/13 10:58	01/15/13 17:57	1
Nitrobenzene-d5	88		35 - 114	01/15/13 10:58	01/15/13 17:57	1
Terphenyl-d14	93		33 - 141	01/15/13 10:58	01/15/13 17:57	1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels - DL

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.120		0.00472	0.000755	mg/L		01/15/13 10:58	01/17/13 12:03	10
Dibenzofuran	0.0401		0.00472	0.000755	mg/L		01/15/13 10:58	01/17/13 12:03	10
Fluorene	0.0652		0.00472	0.000660	mg/L		01/15/13 10:58	01/17/13 12:03	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d6	30		10 - 94	01/15/13 10:58	01/17/13 12:03	10
2,4,6-Tribromophenol	91		10 - 123	01/15/13 10:58	01/17/13 12:03	10
2-Fluorobiphenyl	87		43 - 116	01/15/13 10:58	01/17/13 12:03	10
2-Fluorophenol	38		10 - 100	01/15/13 10:58	01/17/13 12:03	10
Nitrobenzene-d5	90		35 - 114	01/15/13 10:58	01/17/13 12:03	10
Terphenyl-d14	91		33 - 141	01/15/13 10:58	01/17/13 12:03	10

Client Sample ID: WG-1620-MW02-20130109

Lab Sample ID: 600-66920-5

Date Collected: 01/09/13 12:00

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.0211		0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 18:23	1
2-Methylnaphthalene	0.00318		0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 18:23	1
Acenaphthylene	0.000570		0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 18:23	1
Dibenzofuran	0.0178		0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 18:23	1
Fluorene	0.0201		0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 18:23	1
Phenanthrene	0.00241		0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 18:23	1
Anthracene	0.00129		0.000472	0.0000472	mg/L		01/15/13 10:58	01/15/13 18:23	1
Fluoranthene	0.00147		0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 18:23	1
Pyrene	0.000870		0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 18:23	1
Bis(2-ethylhexyl) phthalate	0.000874		0.000472	0.000349	mg/L		01/15/13 10:58	01/15/13 18:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d6	17		10 - 94	01/15/13 10:58	01/15/13 18:23	1
2,4,6-Tribromophenol	96		10 - 123	01/15/13 10:58	01/15/13 18:23	1
2-Fluorobiphenyl	76		43 - 116	01/15/13 10:58	01/15/13 18:23	1
2-Fluorophenol	30		10 - 100	01/15/13 10:58	01/15/13 18:23	1
Nitrobenzene-d5	70		35 - 114	01/15/13 10:58	01/15/13 18:23	1
Terphenyl-d14	88		33 - 141	01/15/13 10:58	01/15/13 18:23	1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels - DL

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.0384		0.00472	0.000755	mg/L		01/15/13 10:58	01/17/13 12:29	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d6	22		10 - 94	01/15/13 10:58	01/17/13 12:29	10

Client Sample ID: WG-1620-MW02-20130109

Lab Sample ID: 600-66920-5

Date Collected: 01/09/13 12:00

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels - DL (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*130*	*X*	*10 - 123*	*01/15/13 10:58*	*01/17/13 12:29*	*10*
2-Fluorobiphenyl	*91*		*43 - 116*	*01/15/13 10:58*	*01/17/13 12:29*	*10*
2-Fluorophenol	*39*		*10 - 100*	*01/15/13 10:58*	*01/17/13 12:29*	*10*
Nitrobenzene-d5	*78*		*35 - 114*	*01/15/13 10:58*	*01/17/13 12:29*	*10*
Terphenyl-d14	*94*		*33 - 141*	*01/15/13 10:58*	*01/17/13 12:29*	*10*

Client Sample ID: WG-1620-MW01A-20130109

Lab Sample ID: 600-66920-6

Date Collected: 01/09/13 14:20

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**0.00219**		0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 18:49	1
2-Methylnaphthalene	**0.00125**		0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 18:49	1
Acenaphthylene	**0.00222**		0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 18:49	1
Dibenzofuran	**0.0141**		0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 18:49	1
Phenanthrene	**0.00388**		0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 18:49	1
Anthracene	**0.000285**	**J**	0.000472	0.0000472	mg/L		01/15/13 10:58	01/15/13 18:49	1
Fluoranthene	**0.00602**		0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 18:49	1
Pyrene	**0.00261**		0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 18:49	1
Bis(2-ethylhexyl) phthalate	**0.00163**		0.000472	0.000349	mg/L		01/15/13 10:58	01/15/13 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*30*		*10 - 94*	*01/15/13 10:58*	*01/15/13 18:49*	*1*
2,4,6-Tribromophenol	*130*	*X*	*10 - 123*	*01/15/13 10:58*	*01/15/13 18:49*	*1*
2-Fluorobiphenyl	*99*		*43 - 116*	*01/15/13 10:58*	*01/15/13 18:49*	*1*
2-Fluorophenol	*43*		*10 - 100*	*01/15/13 10:58*	*01/15/13 18:49*	*1*
Nitrobenzene-d5	*103*		*35 - 114*	*01/15/13 10:58*	*01/15/13 18:49*	*1*
Terphenyl-d14	*106*		*33 - 141*	*01/15/13 10:58*	*01/15/13 18:49*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels - DL

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.117**		0.00472	0.000755	mg/L		01/15/13 10:58	01/17/13 13:05	10
Fluorene	**0.0564**		0.00472	0.000660	mg/L		01/15/13 10:58	01/17/13 13:05	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*28*		*10 - 94*	*01/15/13 10:58*	*01/17/13 13:05*	*10*
2,4,6-Tribromophenol	*105*		*10 - 123*	*01/15/13 10:58*	*01/17/13 13:05*	*10*
2-Fluorobiphenyl	*91*		*43 - 116*	*01/15/13 10:58*	*01/17/13 13:05*	*10*
2-Fluorophenol	*50*		*10 - 100*	*01/15/13 10:58*	*01/17/13 13:05*	*10*
Nitrobenzene-d5	*88*		*35 - 114*	*01/15/13 10:58*	*01/17/13 13:05*	*10*
Terphenyl-d14	*110*		*33 - 141*	*01/15/13 10:58*	*01/17/13 13:05*	*10*

Client Sample ID: WG-1620-FD01-20130109

Lab Sample ID: 600-66920-7

Date Collected: 01/09/13 14:20

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**0.00245**		0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 19:16	1

Client Sample ID: WG-1620-FD01-20130109

Lab Sample ID: 600-66920-7

Date Collected: 01/09/13 14:20

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**0.00128**		0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 19:16	1
Acenaphthylene	**0.00189**		0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 19:16	1
Dibenzofuran	**0.0134**		0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 19:16	1
Phenanthrene	**0.00120**		0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 19:16	1
Anthracene	**0.00373**		0.000472	0.0000472	mg/L		01/15/13 10:58	01/15/13 19:16	1
Fluoranthene	**0.00537**		0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 19:16	1
Pyrene	**0.00202**		0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 19:16	1
Bis(2-ethylhexyl) phthalate	**0.00162**		0.000472	0.000349	mg/L		01/15/13 10:58	01/15/13 19:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*26*		*10 - 94*	*01/15/13 10:58*	*01/15/13 19:16*	*1*
2,4,6-Tribromophenol	*102*		*10 - 123*	*01/15/13 10:58*	*01/15/13 19:16*	*1*
2-Fluorobiphenyl	*86*		*43 - 116*	*01/15/13 10:58*	*01/15/13 19:16*	*1*
2-Fluorophenol	*44*		*10 - 100*	*01/15/13 10:58*	*01/15/13 19:16*	*1*
Nitrobenzene-d5	*99*		*35 - 114*	*01/15/13 10:58*	*01/15/13 19:16*	*1*
Terphenyl-d14	*91*		*33 - 141*	*01/15/13 10:58*	*01/15/13 19:16*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels - DL

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.119**		0.00472	0.000755	mg/L		01/15/13 10:58	01/17/13 13:32	10
Fluorene	**0.0556**		0.00472	0.000660	mg/L		01/15/13 10:58	01/17/13 13:32	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*20*		*10 - 94*	*01/15/13 10:58*	*01/17/13 13:32*	*10*
2,4,6-Tribromophenol	*80*		*10 - 123*	*01/15/13 10:58*	*01/17/13 13:32*	*10*
2-Fluorobiphenyl	*99*		*43 - 116*	*01/15/13 10:58*	*01/17/13 13:32*	*10*
2-Fluorophenol	*47*		*10 - 100*	*01/15/13 10:58*	*01/17/13 13:32*	*10*
Nitrobenzene-d5	*88*		*35 - 114*	*01/15/13 10:58*	*01/17/13 13:32*	*10*
Terphenyl-d14	*100*		*33 - 141*	*01/15/13 10:58*	*01/17/13 13:32*	*10*

Client Sample ID: WG-1620-P12-20130109

Lab Sample ID: 600-66920-8

Date Collected: 01/09/13 15:30

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.0000377	U	0.000472	0.0000377	mg/L		01/15/13 10:58	01/15/13 19:42	1
Naphthalene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 19:42	1
Acenaphthylene	0.0000566	U	0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 19:42	1
Acenaphthene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 19:42	1
Dibenzofuran	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 19:42	1
Fluorene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 19:42	1
Anthracene	0.0000472	U	0.000472	0.0000472	mg/L		01/15/13 10:58	01/15/13 19:42	1
Di-n-butyl phthalate	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 19:42	1
Fluoranthene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 19:42	1
Pyrene	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 19:42	1
Bis(2-ethylhexyl) phthalate	**0.00142**		0.000472	0.000349	mg/L		01/15/13 10:58	01/15/13 19:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*22*		*10 - 94*	*01/15/13 10:58*	*01/15/13 19:42*	*1*
2,4,6-Tribromophenol	*83*		*10 - 123*	*01/15/13 10:58*	*01/15/13 19:42*	*1*

Client Sample ID: WG-1620-P12-20130109

Lab Sample ID: 600-66920-8

Date Collected: 01/09/13 15:30

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*64*		*43 - 116*	*01/15/13 10:58*	*01/15/13 19:42*	*1*
2-Fluorophenol	*35*		*10 - 100*	*01/15/13 10:58*	*01/15/13 19:42*	*1*
Nitrobenzene-d5	*75*		*35 - 114*	*01/15/13 10:58*	*01/15/13 19:42*	*1*
Terphenyl-d14	*82*		*33 - 141*	*01/15/13 10:58*	*01/15/13 19:42*	*1*

Client Sample ID: WG-1620-FB01-20130109

Lab Sample ID: 600-66920-11

Date Collected: 01/09/13 16:15

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.0000377	U	0.000472	0.0000377	mg/L		01/15/13 10:58	01/15/13 21:00	1
Naphthalene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 21:00	1
2-Methylnaphthalene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 21:00	1
Acenaphthylene	0.0000566	U	0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 21:00	1
Acenaphthene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 21:00	1
Dibenzofuran	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 21:00	1
Fluorene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 21:00	1
Phenanthrene	0.0000566	U	0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 21:00	1
Anthracene	0.0000472	U	0.000472	0.0000472	mg/L		01/15/13 10:58	01/15/13 21:00	1
Di-n-butyl phthalate	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 21:00	1
Fluoranthene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 21:00	1
Pyrene	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 21:00	1
Bis(2-ethylhexyl) phthalate	0.000349	U	0.000472	0.000349	mg/L		01/15/13 10:58	01/15/13 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*18*		*10 - 94*	*01/15/13 10:58*	*01/15/13 21:00*	*1*
2,4,6-Tribromophenol	*68*		*10 - 123*	*01/15/13 10:58*	*01/15/13 21:00*	*1*
2-Fluorobiphenyl	*71*		*43 - 116*	*01/15/13 10:58*	*01/15/13 21:00*	*1*
2-Fluorophenol	*32*		*10 - 100*	*01/15/13 10:58*	*01/15/13 21:00*	*1*
Nitrobenzene-d5	*79*		*35 - 114*	*01/15/13 10:58*	*01/15/13 21:00*	*1*
Terphenyl-d14	*84*		*33 - 141*	*01/15/13 10:58*	*01/15/13 21:00*	*1*

Client Sample ID: WG-1620-P10-20130110

Lab Sample ID: 600-66920-12

Date Collected: 01/10/13 08:20

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.0000377	U	0.000472	0.0000377	mg/L		01/15/13 10:58	01/15/13 21:27	1
Naphthalene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 21:27	1
Acenaphthylene	0.0000566	U	0.000472	0.0000566	mg/L		01/15/13 10:58	01/15/13 21:27	1
Acenaphthene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 21:27	1
Dibenzofuran	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/15/13 21:27	1
Fluorene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 21:27	1
Anthracene	0.0000472	U	0.000472	0.0000472	mg/L		01/15/13 10:58	01/15/13 21:27	1
Di-n-butyl phthalate	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 21:27	1
Fluoranthene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/15/13 21:27	1
Pyrene	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/15/13 21:27	1
Bis(2-ethylhexyl) phthalate	**0.000906**		0.000472	0.000349	mg/L		01/15/13 10:58	01/15/13 21:27	1

Client Sample ID: WG-1620-P10-20130110

Lab Sample ID: 600-66920-12

Date Collected: 01/10/13 08:20

Matrix: Water

Date Received: 01/10/13 12:56

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*13*		*10 - 94*	*01/15/13 10:58*	*01/15/13 21:27*	*1*
2,4,6-Tribromophenol	*44*		*10 - 123*	*01/15/13 10:58*	*01/15/13 21:27*	*1*
2-Fluorobiphenyl	*71*		*43 - 116*	*01/15/13 10:58*	*01/15/13 21:27*	*1*
2-Fluorophenol	*28*		*10 - 100*	*01/15/13 10:58*	*01/15/13 21:27*	*1*
Nitrobenzene-d5	*67*		*35 - 114*	*01/15/13 10:58*	*01/15/13 21:27*	*1*
Terphenyl-d14	*79*		*33 - 141*	*01/15/13 10:58*	*01/15/13 21:27*	*1*

Client Sample ID: WG-1620-FD02-20130110

Lab Sample ID: 600-66920-13

Date Collected: 01/10/13 08:20

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.0000377	U	0.000472	0.0000377	mg/L		01/15/13 10:58	01/17/13 13:59	1
Naphthalene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/17/13 13:59	1
Acenaphthylene	0.0000566	U	0.000472	0.0000566	mg/L		01/15/13 10:58	01/17/13 13:59	1
Acenaphthene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/17/13 13:59	1
Dibenzofuran	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/17/13 13:59	1
Fluorene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/17/13 13:59	1
Anthracene	**0.000148**	**J**	0.000472	0.0000472	mg/L		01/15/13 10:58	01/17/13 13:59	1
Di-n-butyl phthalate	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/17/13 13:59	1
Fluoranthene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/17/13 13:59	1
Pyrene	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/17/13 13:59	1
Bis(2-ethylhexyl) phthalate	**0.00112**		0.000472	0.000349	mg/L		01/15/13 10:58	01/17/13 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*19*		*10 - 94*	*01/15/13 10:58*	*01/17/13 13:59*	*1*
2,4,6-Tribromophenol	*43*		*10 - 123*	*01/15/13 10:58*	*01/17/13 13:59*	*1*
2-Fluorobiphenyl	*68*		*43 - 116*	*01/15/13 10:58*	*01/17/13 13:59*	*1*
2-Fluorophenol	*31*		*10 - 100*	*01/15/13 10:58*	*01/17/13 13:59*	*1*
Nitrobenzene-d5	*69*		*35 - 114*	*01/15/13 10:58*	*01/17/13 13:59*	*1*
Terphenyl-d14	*73*		*33 - 141*	*01/15/13 10:58*	*01/17/13 13:59*	*1*

Client Sample ID: WG-1620-MW07-20130110

Lab Sample ID: 600-66920-14

Date Collected: 01/10/13 09:15

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/17/13 14:26	1
2-Methylnaphthalene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/17/13 14:26	1
Acenaphthylene	**0.000110**	**J**	0.000472	0.0000566	mg/L		01/15/13 10:58	01/17/13 14:26	1
Acenaphthene	**0.00181**		0.000472	0.0000755	mg/L		01/15/13 10:58	01/17/13 14:26	1
Dibenzofuran	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/17/13 14:26	1
Fluorene	**0.000137**	**J**	0.000472	0.0000660	mg/L		01/15/13 10:58	01/17/13 14:26	1
Phenanthrene	0.0000566	U	0.000472	0.0000566	mg/L		01/15/13 10:58	01/17/13 14:26	1
Anthracene	**0.000833**		0.000472	0.0000472	mg/L		01/15/13 10:58	01/17/13 14:26	1
Fluoranthene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/17/13 14:26	1
Pyrene	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/17/13 14:26	1
Bis(2-ethylhexyl) phthalate	0.000349	U	0.000472	0.000349	mg/L		01/15/13 10:58	01/17/13 14:26	1

Client Sample ID: WG-1620-MW07-20130110

Lab Sample ID: 600-66920-14

Date Collected: 01/10/13 09:15

Matrix: Water

Date Received: 01/10/13 12:56

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d6	*25*		*10 - 94*	*01/15/13 10:58*	*01/17/13 14:26*	*1*
2,4,6-Tribromophenol	*84*		*10 - 123*	*01/15/13 10:58*	*01/17/13 14:26*	*1*
2-Fluorobiphenyl	*78*		*43 - 116*	*01/15/13 10:58*	*01/17/13 14:26*	*1*
2-Fluorophenol	*36*		*10 - 100*	*01/15/13 10:58*	*01/17/13 14:26*	*1*
Nitrobenzene-d5	*79*		*35 - 114*	*01/15/13 10:58*	*01/17/13 14:26*	*1*
Terphenyl-d14	*86*		*33 - 141*	*01/15/13 10:58*	*01/17/13 14:26*	*1*

Client Sample ID: WG-1620-MW08-201230110

Lab Sample ID: 600-66920-15

Date Collected: 01/10/13 10:45

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/17/13 14:53	1
2-Methylnaphthalene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/17/13 14:53	1
Acenaphthylene	0.0000566	U	0.000472	0.0000566	mg/L		01/15/13 10:58	01/17/13 14:53	1
Acenaphthene	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/17/13 14:53	1
Dibenzofuran	0.0000755	U	0.000472	0.0000755	mg/L		01/15/13 10:58	01/17/13 14:53	1
Fluorene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/17/13 14:53	1
Phenanthrene	0.0000566	U	0.000472	0.0000566	mg/L		01/15/13 10:58	01/17/13 14:53	1
Anthracene	**0.000439**	**J**	0.000472	0.0000472	mg/L		01/15/13 10:58	01/17/13 14:53	1
Fluoranthene	0.0000660	U	0.000472	0.0000660	mg/L		01/15/13 10:58	01/17/13 14:53	1
Pyrene	0.000104	U	0.000472	0.000104	mg/L		01/15/13 10:58	01/17/13 14:53	1
Bis(2-ethylhexyl) phthalate	0.000349	U	0.000472	0.000349	mg/L		01/15/13 10:58	01/17/13 14:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d6	*20*		*10 - 94*	*01/15/13 10:58*	*01/17/13 14:53*	*1*
2,4,6-Tribromophenol	*90*		*10 - 123*	*01/15/13 10:58*	*01/17/13 14:53*	*1*
2-Fluorobiphenyl	*79*		*43 - 116*	*01/15/13 10:58*	*01/17/13 14:53*	*1*
2-Fluorophenol	*35*		*10 - 100*	*01/15/13 10:58*	*01/17/13 14:53*	*1*
Nitrobenzene-d5	*79*		*35 - 114*	*01/15/13 10:58*	*01/17/13 14:53*	*1*
Terphenyl-d14	*88*		*33 - 141*	*01/15/13 10:58*	*01/17/13 14:53*	*1*

Client Sample ID: WG-1620-FB02-20130110

Lab Sample ID: 600-66920-16

Date Collected: 01/10/13 11:15

Matrix: Water

Date Received: 01/10/13 12:56

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.0000381	U	0.000476	0.0000381	mg/L		01/15/13 10:58	01/17/13 15:20	1
Naphthalene	0.0000762	U	0.000476	0.0000762	mg/L		01/15/13 10:58	01/17/13 15:20	1
2-Methylnaphthalene	0.0000667	U	0.000476	0.0000667	mg/L		01/15/13 10:58	01/17/13 15:20	1
Acenaphthylene	0.0000571	U	0.000476	0.0000571	mg/L		01/15/13 10:58	01/17/13 15:20	1
Acenaphthene	0.0000762	U	0.000476	0.0000762	mg/L		01/15/13 10:58	01/17/13 15:20	1
Dibenzofuran	0.0000762	U	0.000476	0.0000762	mg/L		01/15/13 10:58	01/17/13 15:20	1
Fluorene	0.0000667	U	0.000476	0.0000667	mg/L		01/15/13 10:58	01/17/13 15:20	1
Phenanthrene	0.0000571	U	0.000476	0.0000571	mg/L		01/15/13 10:58	01/17/13 15:20	1
Anthracene	0.0000476	U	0.000476	0.0000476	mg/L		01/15/13 10:58	01/17/13 15:20	1
Di-n-butyl phthalate	0.000105	U	0.000476	0.000105	mg/L		01/15/13 10:58	01/17/13 15:20	1
Fluoranthene	0.0000667	U	0.000476	0.0000667	mg/L		01/15/13 10:58	01/17/13 15:20	1
Pyrene	0.000105	U	0.000476	0.000105	mg/L		01/15/13 10:58	01/17/13 15:20	1

Client: Pastor, Behling & Wheeler LLC
Project/Site: UPRR HWPW

TestAmerica Job ID: 600-66920-1

Client Sample ID: WG-1620-FB02-20130110
Date Collected: 01/10/13 11:15
Date Received: 01/10/13 12:56

Lab Sample ID: 600-66920-16
Matrix: Water

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	0.000352	U	0.000476	0.000352	mg/L		01/15/13 10:58	01/17/13 15:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*24*		*10 - 94*	*01/15/13 10:58*	*01/17/13 15:20*	*1*
2,4,6-Tribromophenol	*67*		*10 - 123*	*01/15/13 10:58*	*01/17/13 15:20*	*1*
2-Fluorobiphenyl	*80*		*43 - 116*	*01/15/13 10:58*	*01/17/13 15:20*	*1*
2-Fluorophenol	*37*		*10 - 100*	*01/15/13 10:58*	*01/17/13 15:20*	*1*
Nitrobenzene-d5	*89*		*35 - 114*	*01/15/13 10:58*	*01/17/13 15:20*	*1*
Terphenyl-d14	*83*		*33 - 141*	*01/15/13 10:58*	*01/17/13 15:20*	*1*

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
X	Surrogate is outside control limits
N	RPD of the MS and MSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Surrogate Summary

Client: Pastor, Behling & Wheeler LLC
Project/Site: UPRR HWPW

TestAmerica Job ID: 600-66920-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		PHL	TBP	FBP	2FP	NBZ	TPH
Lab Sample ID	Client Sample ID	(10-94)	(10-123)	(43-116)	(10-100)	(35-114)	(33-141)
600-66920-1	WG-1620-MW11A-20130109	19	57	71	30	74	75
600-66920-2	WG-1620-MW11B-20130109	25	102	80	40	78	98
600-66920-2 - DL	WG-1620-MW11B-20130109	20	84	84	37	63	82
600-66920-3	WG-1620-MW10A-20130109	20	86	72	32	73	80
600-66920-4	WG-1620-MW10B-20130109	23	91	90	45	88	93
600-66920-4 - DL	WG-1620-MW10B-20130109	30	91	87	38	90	91
600-66920-5	WG-1620-MW02-20130109	17	96	76	30	70	88
600-66920-5 - DL	WG-1620-MW02-20130109	22	130 X	91	39	78	94
600-66920-6	WG-1620-MW01A-20130109	30	130 X	99	43	103	106
600-66920-6 - DL	WG-1620-MW01A-20130109	28	105	91	50	88	110
600-66920-7	WG-1620-FD01-20130109	26	102	86	44	99	91
600-66920-7 - DL	WG-1620-FD01-20130109	20	80	99	47	88	100
600-66920-8	WG-1620-P12-20130109	22	83	64	35	75	82
600-66920-8 MS	WG-1620-P12-20130109	27	58	49	34	56	54
600-66920-8 MSD	WG-1620-P12-20130109	30	67	57	38	62	68
600-66920-11	WG-1620-FB01-20130109	18	68	71	32	79	84
600-66920-12	WG-1620-P10-20130110	13	44	71	28	67	79
600-66920-13	WG-1620-FD02-20130110	19	43	68	31	69	73
600-66920-14	WG-1620-MW07-20130110	25	84	78	36	79	86
600-66920-15	WG-1620-MW08-201230110	20	90	79	35	79	88
600-66920-16	WG-1620-FB02-20130110	24	67	80	37	89	83
LCS 600-97360/2-A	Lab Control Sample	30	85	82	47	86	85
MB 600-97360/1-A	Method Blank	32	90	90	53	85	100

Surrogate Legend

PHL = Phenol-d6
TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
TPH = Terphenyl-d14

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Lab Sample ID: MB 600-97360/1-A
Matrix: Water
Analysis Batch: 97372

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 97360

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	0.0000400	U	0.000500	0.0000400	mg/L		01/15/13 10:58	01/15/13 15:44	1
Naphthalene	0.0000800	U	0.000500	0.0000800	mg/L		01/15/13 10:58	01/15/13 15:44	1
2-Methylnaphthalene	0.0000700	U	0.000500	0.0000700	mg/L		01/15/13 10:58	01/15/13 15:44	1
Acenaphthylene	0.0000600	U	0.000500	0.0000600	mg/L		01/15/13 10:58	01/15/13 15:44	1
Acenaphthene	0.0000800	U	0.000500	0.0000800	mg/L		01/15/13 10:58	01/15/13 15:44	1
Dibenzofuran	0.0000800	U	0.000500	0.0000800	mg/L		01/15/13 10:58	01/15/13 15:44	1
Fluorene	0.0000700	U	0.000500	0.0000700	mg/L		01/15/13 10:58	01/15/13 15:44	1
Phenanthrene	0.0000600	U	0.000500	0.0000600	mg/L		01/15/13 10:58	01/15/13 15:44	1
Anthracene	0.0000500	U	0.000500	0.0000500	mg/L		01/15/13 10:58	01/15/13 15:44	1
Di-n-butyl phthalate	0.000110	U	0.000500	0.000110	mg/L		01/15/13 10:58	01/15/13 15:44	1
Fluoranthene	0.0000700	U	0.000500	0.0000700	mg/L		01/15/13 10:58	01/15/13 15:44	1
Pyrene	0.000110	U	0.000500	0.000110	mg/L		01/15/13 10:58	01/15/13 15:44	1
Bis(2-ethylhexyl) phthalate	0.000370	U	0.000500	0.000370	mg/L		01/15/13 10:58	01/15/13 15:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d6	*32*		*10 - 94*	*01/15/13 10:58*	*01/15/13 15:44*	*1*
2,4,6-Tribromophenol	*90*		*10 - 123*	*01/15/13 10:58*	*01/15/13 15:44*	*1*
2-Fluorobiphenyl	*90*		*43 - 116*	*01/15/13 10:58*	*01/15/13 15:44*	*1*
2-Fluorophenol	*53*		*10 - 100*	*01/15/13 10:58*	*01/15/13 15:44*	*1*
Nitrobenzene-d5	*85*		*35 - 114*	*01/15/13 10:58*	*01/15/13 15:44*	*1*
Terphenyl-d14	*100*		*33 - 141*	*01/15/13 10:58*	*01/15/13 15:44*	*1*

Lab Sample ID: LCS 600-97360/2-A
Matrix: Water
Analysis Batch: 97372

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 97360

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	0.0100	0.003637		mg/L		36	11 - 112
Naphthalene	0.0100	0.008324		mg/L		83	39 - 120
2-Methylnaphthalene	0.0100	0.008249		mg/L		82	40 - 121
Acenaphthylene	0.0100	0.008877		mg/L		89	35 - 135
Acenaphthene	0.0100	0.008229		mg/L		82	47 - 145
Dibenzofuran	0.0100	0.008445		mg/L		84	46 - 123
Fluorene	0.0100	0.009079		mg/L		91	48 - 127
Phenanthrene	0.0100	0.008373		mg/L		84	52 - 121
Anthracene	0.0100	0.008867		mg/L		89	53 - 124
Di-n-butyl phthalate	0.0100	0.008164		mg/L		82	54 - 138
Fluoranthene	0.0100	0.009064		mg/L		91	53 - 127
Pyrene	0.0100	0.008105		mg/L		81	49 - 121
Bis(2-ethylhexyl) phthalate	0.0100	0.008250		mg/L		82	47 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Phenol-d6	*30*		*10 - 94*
2,4,6-Tribromophenol	*85*		*10 - 123*
2-Fluorobiphenyl	*82*		*43 - 116*
2-Fluorophenol	*47*		*10 - 100*
Nitrobenzene-d5	*86*		*35 - 114*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCS 600-97360/2-A
Matrix: Water
Analysis Batch: 97372

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 97360

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	*85*		*33 - 141*

Lab Sample ID: 600-66920-8 MS
Matrix: Water
Analysis Batch: 97372

Client Sample ID: WG-1620-P12-20130109
Prep Type: Total/NA
Prep Batch: 97360

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	0.0000377	U	0.0189	0.005716		mg/L		30	10 - 62
Naphthalene	0.0000755	U	0.0189	0.009939		mg/L		53	34 - 99
2-Methylnaphthalene	0.0000660		0.0189	0.01010		mg/L		54	36 - 111
Acenaphthylene	0.0000566	U	0.0189	0.01033		mg/L		55	38 - 115
Acenaphthene	0.0000755	U	0.0189	0.009755		mg/L		52	46 - 118
Dibenzofuran	0.0000755	U	0.0189	0.009968		mg/L		53	46 - 110
Fluorene	0.0000660	U	0.0189	0.01029		mg/L		55	44 - 112
Phenanthrene	0.0000566		0.0189	0.009768		mg/L		52	41 - 117
Anthracene	0.0000472	U	0.0189	0.01046		mg/L		55	35 - 116
Di-n-butyl phthalate	0.000104	U	0.0189	0.01033		mg/L		55	31 - 137
Fluoranthene	0.0000660	U	0.0189	0.01140		mg/L		60	14 - 145
Pyrene	0.000104	U	0.0189	0.009952		mg/L		53	28 - 133
Bis(2-ethylhexyl) phthalate	0.00142		0.0189	0.01055		mg/L		48	14 - 123

Surrogate	MS %Recovery	MS Qualifier	Limits
Phenol-d6	*27*		*10 - 94*
2,4,6-Tribromophenol	*58*		*10 - 123*
2-Fluorobiphenyl	*49*		*43 - 116*
2-Fluorophenol	*34*		*10 - 100*
Nitrobenzene-d5	*56*		*35 - 114*
Terphenyl-d14	*54*		*33 - 141*

Lab Sample ID: 600-66920-8 MSD
Matrix: Water
Analysis Batch: 97372

Client Sample ID: WG-1620-P12-20130109
Prep Type: Total/NA
Prep Batch: 97360

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	0.0000377	U	0.0189	0.006519		mg/L		35	10 - 62	13	20
Naphthalene	0.0000755	U	0.0189	0.01093		mg/L		58	34 - 99	10	20
2-Methylnaphthalene	0.0000660		0.0189	0.01102		mg/L		58	36 - 111	9	20
Acenaphthylene	0.0000566	U	0.0189	0.01154		mg/L		61	38 - 115	11	20
Acenaphthene	0.0000755	U	0.0189	0.01101		mg/L		58	46 - 118	12	20
Dibenzofuran	0.0000755	U	0.0189	0.01144		mg/L		61	46 - 110	14	20
Fluorene	0.0000660	U	0.0189	0.01185		mg/L		63	44 - 112	14	20
Phenanthrene	0.0000566		0.0189	0.01167		mg/L		62	41 - 117	18	20
Anthracene	0.0000472	U	0.0189	0.01239		mg/L		66	35 - 116	17	20
Di-n-butyl phthalate	0.000104	U	0.0189	0.01225		mg/L		65	31 - 137	17	20
Fluoranthene	0.0000660	U	0.0189	0.01336		mg/L		71	14 - 145	16	20
Pyrene	0.000104	U	0.0189	0.01228	N	mg/L		65	28 - 133	21	20
Bis(2-ethylhexyl) phthalate	0.00142		0.0189	0.01385	N	mg/L		66	14 - 123	27	20

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: 600-66920-8 MSD
Matrix: Water
Analysis Batch: 97372

Client Sample ID: WG-1620-P12-20130109
Prep Type: Total/NA
Prep Batch: 97360

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Phenol-d6	30		10 - 94
2,4,6-Tribromophenol	67		10 - 123
2-Fluorobiphenyl	57		43 - 116
2-Fluorophenol	38		10 - 100
Nitrobenzene-d5	62		35 - 114
Terphenyl-d14	68		33 - 141

Unadjusted Detection Limits

Client: Pastor, Behling & Wheeler LLC
Project/Site: UPRR HWPW

TestAmerica Job ID: 600-66920-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	MQL	MDL	Units	Method
2-Methylnaphthalene	0.000500	0.0000700	mg/L	8270C LL
Acenaphthene	0.000500	0.0000800	mg/L	8270C LL
Acenaphthylene	0.000500	0.0000600	mg/L	8270C LL
Anthracene	0.000500	0.0000500	mg/L	8270C LL
Bis(2-ethylhexyl) phthalate	0.000500	0.000370	mg/L	8270C LL
Dibenzofuran	0.000500	0.0000800	mg/L	8270C LL
Di-n-butyl phthalate	0.000500	0.000110	mg/L	8270C LL
Fluoranthene	0.000500	0.0000700	mg/L	8270C LL
Fluorene	0.000500	0.0000700	mg/L	8270C LL
Naphthalene	0.000500	0.0000800	mg/L	8270C LL
Phenanthrene	0.000500	0.0000600	mg/L	8270C LL
Phenol	0.000500	0.0000400	mg/L	8270C LL
Pyrene	0.000500	0.000110	mg/L	8270C LL

GC/MS Semi VOA

Prep Batch: 97360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-66920-1	WG-1620-MW11A-20130109	Total/NA	Water	3510C	
600-66920-2	WG-1620-MW11B-20130109	Total/NA	Water	3510C	
600-66920-2 - DL	WG-1620-MW11B-20130109	Total/NA	Water	3510C	
600-66920-3	WG-1620-MW10A-20130109	Total/NA	Water	3510C	
600-66920-4	WG-1620-MW10B-20130109	Total/NA	Water	3510C	
600-66920-4 - DL	WG-1620-MW10B-20130109	Total/NA	Water	3510C	
600-66920-5	WG-1620-MW02-20130109	Total/NA	Water	3510C	
600-66920-5 - DL	WG-1620-MW02-20130109	Total/NA	Water	3510C	
600-66920-6	WG-1620-MW01A-20130109	Total/NA	Water	3510C	
600-66920-6 - DL	WG-1620-MW01A-20130109	Total/NA	Water	3510C	
600-66920-7	WG-1620-FD01-20130109	Total/NA	Water	3510C	
600-66920-7 - DL	WG-1620-FD01-20130109	Total/NA	Water	3510C	
600-66920-8	WG-1620-P12-20130109	Total/NA	Water	3510C	
600-66920-8 MS	WG-1620-P12-20130109	Total/NA	Water	3510C	
600-66920-8 MSD	WG-1620-P12-20130109	Total/NA	Water	3510C	
600-66920-11	WG-1620-FB01-20130109	Total/NA	Water	3510C	
600-66920-12	WG-1620-P10-20130110	Total/NA	Water	3510C	
600-66920-13	WG-1620-FD02-20130110	Total/NA	Water	3510C	
600-66920-14	WG-1620-MW07-20130110	Total/NA	Water	3510C	
600-66920-15	WG-1620-MW08-201230110	Total/NA	Water	3510C	
600-66920-16	WG-1620-FB02-20130110	Total/NA	Water	3510C	
LCS 600-97360/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 600-97360/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 97372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-66920-1	WG-1620-MW11A-20130109	Total/NA	Water	8270C LL	97360
600-66920-2	WG-1620-MW11B-20130109	Total/NA	Water	8270C LL	97360
600-66920-3	WG-1620-MW10A-20130109	Total/NA	Water	8270C LL	97360
600-66920-4	WG-1620-MW10B-20130109	Total/NA	Water	8270C LL	97360
600-66920-5	WG-1620-MW02-20130109	Total/NA	Water	8270C LL	97360
600-66920-6	WG-1620-MW01A-20130109	Total/NA	Water	8270C LL	97360
600-66920-7	WG-1620-FD01-20130109	Total/NA	Water	8270C LL	97360
600-66920-8	WG-1620-P12-20130109	Total/NA	Water	8270C LL	97360
600-66920-8 MS	WG-1620-P12-20130109	Total/NA	Water	8270C LL	97360
600-66920-8 MSD	WG-1620-P12-20130109	Total/NA	Water	8270C LL	97360
600-66920-11	WG-1620-FB01-20130109	Total/NA	Water	8270C LL	97360
600-66920-12	WG-1620-P10-20130110	Total/NA	Water	8270C LL	97360
LCS 600-97360/2-A	Lab Control Sample	Total/NA	Water	8270C LL	97360
MB 600-97360/1-A	Method Blank	Total/NA	Water	8270C LL	97360

Analysis Batch: 97642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-66920-2 - DL	WG-1620-MW11B-20130109	Total/NA	Water	8270C LL	97360
600-66920-4 - DL	WG-1620-MW10B-20130109	Total/NA	Water	8270C LL	97360
600-66920-5 - DL	WG-1620-MW02-20130109	Total/NA	Water	8270C LL	97360
600-66920-6 - DL	WG-1620-MW01A-20130109	Total/NA	Water	8270C LL	97360
600-66920-7 - DL	WG-1620-FD01-20130109	Total/NA	Water	8270C LL	97360
600-66920-13	WG-1620-FD02-20130110	Total/NA	Water	8270C LL	97360
600-66920-14	WG-1620-MW07-20130110	Total/NA	Water	8270C LL	97360
600-66920-15	WG-1620-MW08-201230110	Total/NA	Water	8270C LL	97360

GC/MS Semi VOA (Continued)

Analysis Batch: 97642 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-66920-16	WG-1620-FB02-20130110	Total/NA	Water	8270C LL	97360

Lab Chronicle

Client: Pastor, Behling & Wheeler LLC
Project/Site: UPRR HWPW

TestAmerica Job ID: 600-66920-1

Client Sample ID: WG-1620-MW11A-20130109 — Lab Sample ID: 600-66920-1

Date Collected: 01/09/13 08:00 — **Matrix: Water**
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97372	01/15/13 16:37	JH	TAL HOU

Client Sample ID: WG-1620-MW11B-20130109 — Lab Sample ID: 600-66920-2

Date Collected: 01/09/13 09:00 — **Matrix: Water**
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97372	01/15/13 17:04	JH	TAL HOU
Total/NA	Prep	3510C	DL		97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL	DL	10	97642	01/17/13 11:36	JH	TAL HOU

Client Sample ID: WG-1620-MW10A-20130109 — Lab Sample ID: 600-66920-3

Date Collected: 01/09/13 10:00 — **Matrix: Water**
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97372	01/15/13 17:30	JH	TAL HOU

Client Sample ID: WG-1620-MW10B-20130109 — Lab Sample ID: 600-66920-4

Date Collected: 01/09/13 11:00 — **Matrix: Water**
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97372	01/15/13 17:57	JH	TAL HOU
Total/NA	Prep	3510C	DL		97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL	DL	10	97642	01/17/13 12:03	JH	TAL HOU

Client Sample ID: WG-1620-MW02-20130109 — Lab Sample ID: 600-66920-5

Date Collected: 01/09/13 12:00 — **Matrix: Water**
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97372	01/15/13 18:23	JH	TAL HOU
Total/NA	Prep	3510C	DL		97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL	DL	10	97642	01/17/13 12:29	JH	TAL HOU

Lab Chronicle

Client: Pastor, Behling & Wheeler LLC
Project/Site: UPRR HWPW

TestAmerica Job ID: 600-66920-1

Client Sample ID: WG-1620-MW01A-20130109

Lab Sample ID: 600-66920-6

Date Collected: 01/09/13 14:20
Matrix: Water
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97372	01/15/13 18:49	JH	TAL HOU
Total/NA	Prep	3510C	DL		97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL	DL	10	97642	01/17/13 13:05	JH	TAL HOU

Client Sample ID: WG-1620-FD01-20130109

Lab Sample ID: 600-66920-7

Date Collected: 01/09/13 14:20
Matrix: Water
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97372	01/15/13 19:16	JH	TAL HOU
Total/NA	Prep	3510C	DL		97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL	DL	10	97642	01/17/13 13:32	JH	TAL HOU

Client Sample ID: WG-1620-P12-20130109

Lab Sample ID: 600-66920-8

Date Collected: 01/09/13 15:30
Matrix: Water
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97372	01/15/13 19:42	JH	TAL HOU

Client Sample ID: WG-1620-FB01-20130109

Lab Sample ID: 600-66920-11

Date Collected: 01/09/13 16:15
Matrix: Water
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97372	01/15/13 21:00	JH	TAL HOU

Client Sample ID: WG-1620-P10-20130110

Lab Sample ID: 600-66920-12

Date Collected: 01/10/13 08:20
Matrix: Water
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97372	01/15/13 21:27	JH	TAL HOU

Lab Chronicle

Client: Pastor, Behling & Wheeler LLC
Project/Site: UPRR HWPW

TestAmerica Job ID: 600-66920-1

Client Sample ID: WG-1620-FD02-20130110

Lab Sample ID: 600-66920-13

Date Collected: 01/10/13 08:20
Matrix: Water
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97642	01/17/13 13:59	JH	TAL HOU

Client Sample ID: WG-1620-MW07-20130110

Lab Sample ID: 600-66920-14

Date Collected: 01/10/13 09:15
Matrix: Water
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97642	01/17/13 14:26	JH	TAL HOU

Client Sample ID: WG-1620-MW08-201230110

Lab Sample ID: 600-66920-15

Date Collected: 01/10/13 10:45
Matrix: Water
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97642	01/17/13 14:53	JH	TAL HOU

Client Sample ID: WG-1620-FB02-20130110

Lab Sample ID: 600-66920-16

Date Collected: 01/10/13 11:15
Matrix: Water
Date Received: 01/10/13 12:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			97360	01/15/13 10:58	LR	TAL HOU
Total/NA	Analysis	8270C LL		1	97642	01/17/13 15:20	JH	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Pastor, Behling & Wheeler LLC
Project/Site: UPRR HWPW

TestAmerica Job ID: 600-66920-1

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-12
Louisiana	NELAP	6	01967	06-30-13
Oklahoma	State Program	6	9503	08-31-13
Texas	NELAP	6	T104704223-10-6-TX	10-31-13
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	GULF	10-31-13

TestAmerica Houston
5310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica

2/1/2013

Client Information	Sampler: JOHN BRAYTON	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-18278-7081.1
Client Contact: Mr. Eric Matzner	Phone: 512-671-3434	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page 1 of 2
Company: Pastor, Behling & Wheeler LLC				Job #:
Address: 2201 Double Creek Dr Suite 4004	Due Date Requested:			
City: Round Rock	TAT Requested (days):			
State, Zip: TX, 78664				
Phone: 512-671-3434(Tel) 512-671-3446(Fax)	PO #: Purchase Order not required			
Email: eric.matzner@pbwllc.com	WO #:			
Project Name: UPRR Houston Wood Preserving Wks	Project #:			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270-SVOCs ATZ SPECIFIC	8270-SVOCs BTZ SPECIFIC	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
WG-1620-MW11A-20130109	1-9-13	0800	G	W			X			
WG-1620-MW11B-20130109		0900	G	W				X		
WG-1620-MW10A-20130109		1000	G	W			X			
WG-1620-MW10B-20130109		1100	G	W				X		
WG-1620-MWD2-20130109		1200	G	W			X			
WG-1620-MWD1A-20130109		1420	G	W			X			
WG-1620-FD01-20130109		1420	G	W			X			
WG-1620-P12-20130109		1530	G	W				X		
WG-1620-P12MS-20130109		1530	C	W				X		
WG-1620-P12MSD-20130109		1530	G	W				X		
WG-1620-FB01-20130109		1615	C	W			X			

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[signature]	1-10-13 1256	PBW	[signature]	1/10/13 1256	TA
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

testamerica laboratories

Client Information	Sampler: JOHN BRAYTON	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-18278-7081.1
Client Contact: Mr. Eric Matzner	Phone: 512-671-3434	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page 2 of 2
Company: Pastor, Behling & Wheeler LLC				Job #:
Address: 2201 Double Creek Dr Suite 4004	Due Date Requested:			
City: Round Rock	TAT Requested (days):			
State, Zip: TX, 78664				
Phone: 512-671-3434(Tel) 512-671-3446(Fax)	PO #: Purchase Order not required			
Email: eric.matzner@pbwllc.com	WO #:			
Project Name: UPRR Houston Wood Preserving Wks	Project #:			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270-SVOCs ATZ- SPECIFIC	8270 - SVOCS BTZ- SPECIFIC	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
WG-1620-FIELD-20130110	1-10-13	0820	G	W				X		
WG-1620-FD02-20130110		0820	G	W				X		
WG-1620-MW07-20130110		0915	G	W			X			
WG-1620-MW08-20130110		1045	G	W			X			
WG-1620-FB02-20130110		1115	G	W			X			

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company
	1-10-13 1256	PBW		1/10/13 1256	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

2/1/2013

Login Sample Receipt Checklist

Client: Pastor, Behling & Wheeler LLC

Job Number: 600-66920-1

Login Number: 66920

List Source: TestAmerica Houston

List Number: 1

Creator: Pulumbarit, Josh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3 3.9 5.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

CONESTOGA-ROVERS & ASSOCIATES

E-Mail Date: February 7, 2013
E-Mail To: Eric Matzner/ Pastor, Behling & Wheeler, LLC
c.c.: Angela Bown
E-Mail and Hard Copy if Requested

DATA USABILITY SUMMARY
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
SEMI-ANNUAL GROUNDWATER MONITORING
HOUSTON, TEXAS
JANUARY 2013

PREPARED BY:
CONESTOGA-ROVERS & ASSOCIATES
9033 Meridian Way
West Chester, Ohio 45069
Telephone: 513-942-4750 Fax: 513-942-8585
Contact: Angela Bown [eew]
Date: February 7, 2013
www.CRAworld.com

Data Usability Summary

Reviewer:	Angela Bown – Conestoga-Rovers & Associates, Inc.
Contract Laboratory:	TestAmerica, Inc.—Houston, Texas
Project/Area of Interest:	UPRR Houston Wood Preserving Works – Houston, Texas
Description of Data Packages Reviewed:	Groundwater sample results in data package: 600-66920-1
Sample Collection Date(s):	January 9-10, 2013
Intended Use of Data:	To monitor the COCs in groundwater at the site and to evaluate whether migration of Chemicals of Concern (COC) could result in risk to human or ecological health.

1.0 Scope of Data Usability Summary

Data were reviewed and validated in accordance with Title 30 of the Texas Administrative Code Section 350.54 (30 TAC 350.54) as described in *Review and Reporting of COC Concentration Data,* (RG-366/TRRP-13) and the results of the review/validation are discussed in this Data Usability Summary (DUS). The review included examination of the reported data, the laboratory review checklist (LRC), and field/laboratory quality assurance/quality control (QA/QC) samples collected at the Site. Tables summarizing data qualifications discussed in this DUS can be found in Appendix A.

A sampling and analysis summary is presented in Table 1. This summary includes a cross-reference of field sample identification numbers and location codes. Each sample was assigned a unique field identification number.

Groundwater samples including quality control samples were analyzed for the parameters outlined in Table 2. The validated sample results are presented in Table 3.

2.0 Laboratory Qualifications

Analytical services were provided by TestAmerica, Inc. (TA) located in Houston, Texas. The laboratory's quality assurance program is consistent with the quality standards outlined in the National Environmental Laboratory Accreditation Program (NELAP). The laboratory was accredited under Texas Certification Number T104704223-10-6-TX at the time the analyses were performed.

3.0 Project Objectives

3.1 Levels of Required Performance (LORP)

Prior to sampling, the LORP for each COC was established for the investigation. Standard available analytical methods were selected and minimal detection limits that are at or below the Texas Risk Reduction Tier 1 Residential Protective Concentration Levels (PCLs), $^{GW}GW_{ING}$ for groundwater were sought.

3.2 Sampling/Analytical QA/QC Objectives

Pastor, Behling & Wheeler, LLC designed the QA/QC program to identify contamination resulting from sample collection, sample transport and the analytical process.

- The trip blank is a zero headspace sample container filled by the laboratory with analyte-free water. Trip blanks were submitted and analyzed with the samples requiring volatile organic analyses. The trip blank samples were kept in the same environment in which the other field samples were collected.
- Field and equipment blanks are sample containers filled in the field with analyte-free water, which has been used to rinse sampling equipment to check effectiveness of the decontamination procedures.
- Method blanks of a similar matrix to that of the associated samples are prepared by the laboratory and analyzed to determine if laboratory contaminants are affecting the analytical results. Method blanks are prepared and analyzed with each batch.

Similarly, the QA/QC program was designed to evaluate the quality of the resulting data with respect to bias and precision. First, a laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was prepared and analyzed with each batch. The recovery ranges established by the laboratory are adopted as the acceptance criteria for the project. Second, a matrix spike/matrix spike duplicate (MS/MSD) was prepared and analyzed with each batch. The recovery ranges and relative percent differences (RPDs) established by the laboratory are adopted as the acceptance criteria for the project. Third, field duplicates were collected and submitted for analysis. The RPD acceptance criterion for the water field duplicates is 30 percent. This RPD criterion is only used when sample concentrations are above the estimated regions of detection.

4.0 Data Review/Validation Results

4.1 Analytical Results

Analytes with concentrations above the Sample Detection Limits (SDLs) but below the Method Quantitation Limits (MQL) have been qualified as estimated on the analytical tables per the TRRP-13 document.

4.2 LORP

All SDLs and unadjusted MQLs met the LORP for this investigation.

Some Detectability Check Standard (DCS) results supported the laboratory Method Detection Limits (MDL).

4.3 Preservation and Holding Times

Samples were properly preserved in the field and cooled to 4°C (±2°C). Samples were shipped with chains of custody, and the paperwork was filled out properly. All samples were shipped on ice. All samples were prepared and analyzed within the applicable holding times.

4.4 Sample Containers

Sample containers were certified pre-cleaned glass provided by the laboratory. These containers meet or exceed analyte specifications established in the USEPA *Specifications and Guidance for Contaminant-free Sample Containers*.

4.5 Calibrations

According to the LRCs, instrument tuning and initial calibration and continuing calibration data met the criteria for the selected methods.

4.6 Blanks

Method Blanks: As these were not discrete samples handled in the field, the method blanks are not listed on the sample identification cross-reference list found in Table 1. Results are reported in the data packages on a laboratory batch basis. All of the laboratory blank results were reported as ND (not detected).

4.7 Internal Standard and Surrogate Recoveries

Recoveries of internal standards and surrogates are addressed in the LRCs of the laboratory data packages. Most surrogate recoveries and all internal standard areas and retention limits were within the acceptance limits. Each individual surrogate compound is expected to meet the laboratory control limits with the exception of semi-volatile organic compound (SVOC) analyses. According to TRRP-13 for SVOC analyses, up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

4.8 Laboratory Control Samples (LCS)

LCS data for all COCs were reported for each batch. LCS spike recoveries for all COCs were within the project objectives.

4.9 Matrix Spikes

Matrix spike/matrix spike duplicates were prepared and analyzed with all batches for all requested parameters. The results are reported in the data package on a laboratory batch basis.

All recoveries and most RPDs met criteria. Table 4 presents the sample results that were qualified due to outlying RPDs.

4.10 Field Duplicate

Field duplicate samples were collected and analyzed for the target analytes as outlined in Table 1.

Most RPDs were < 30% for sample results greater than 5 times the MQL indicating acceptable precision above the estimated regions of detection. Table 5 presents the sample results that were qualified due to variability in the field duplicate results.

4.11 Field Procedures

Pastor, Behling & Wheeler, LLC collected groundwater samples in accordance with their Standard Operating Procedures (SOP) for sample collection.

4.12 Summary

The analytical data in this report are usable to assess the impact of COCs in groundwater at the site with the qualifications noted herein.

APPENDIX A

TABLES

TABLE 1

SAMPLE AND ANALYSIS SUMMARY
SEMI-ANNUAL SITE-WIDE GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JANUARY 2013

					Analytes/Parameters	
Sample I.D.	*Location I.D.*	*Matrix*	*Collection Date (mm/dd/yy)*	*Collection Time (hr:min)*	*Select SVOCs*	*Comment*
TestAmerica SDG#: 600-66920-1						
WG-1620-MW11A-20130109	MW-11A	WG	01/09/13	08:00	X	
WG-1620-MW11B-20130109	MW-11B	WG	01/09/13	09:00	X	
WG-1620-MW10A-20130109	MW-10A	WG	01/09/13	10:00	X	
WG-1620-MW10B-20130109	MW-10B	WG	01/09/13	11:00	X	
WG-1620-MW02-20130109	MW-02	WG	01/09/13	12:00	X	
WG-1620-MW01A-20130109	MW-01A	WG	01/09/13	14:20	X	
WG-1620-FD01-20130109	MW-01A	WG	01/09/13	14:20	X	Field Duplicate of WG-1620-MW01A-20130109
WG-1620-P12-20130109	P-12	WG	01/09/13	15:30	X	MS/MSD
WG-1620-FB01-20130109	Field Blank	WG	01/09/13	16:15	X	
WG-1620-P10-20130110	P-10	WG	01/10/13	08:20	X	
WG-1620-FD02-20130110	P-10	WG	01/10/13	08:20	X	Field Duplicate of WG-1620-P10-20130110
WG-1620-MW07-20130110	MW-07	WG	01/10/13	09:15	X	
WG-1620-MW08-201230110	MW-08	WG	01/10/13	10:45	X	
WG-1620-FB02-20130110	Field Blank	WG	01/10/13	11:15	X	

Notes:

MS	Matrix spike.
MSD	Matrix spike duplicate.
SVOCs	Semi-volatile organic compounds.

TABLE 2

SUMMARY OF ANALYTICAL METHODOLOGIES
SEMI-ANNUAL SITE-WIDE GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JANUARY 2013

Parameter	*Method*
Select SVOCs	SW-846 8270[1]

Notes:

[1] "Test Methods for Solid Waste/Physical Chemical Methods," SW-846, 3rd Edition, September 1986 (with all subsequent revisions).

SVOCs Semi-volatile organic compounds.

TABLE 3

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL SITE-WIDE GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JANUARY 2013

Sample Location:		*MW-01A*	*MW-01A*	*MW-02*	*MW-07*
Sample ID:		*WG-1620-MW01A-20130109*	*WG-1620-FD01-20130109*	*WG-1620-MW02-20130109*	*WG-1620-MW07-20130110*
Sample Date:		*1/9/2013*	*1/9/2013*	*1/9/2013*	*1/10/2013*
			Duplicate		
Parameters	***Units***				
Semi-volatile Organic Compounds					
2-Methylnaphthalene	mg/L	0.00125	0.00128	0.00318	<0.0000660
Acenaphthene	mg/L	0.117	0.119	0.0384	0.00181
Acenaphthylene	mg/L	0.00222	0.00189	0.000570	0.000110 J
Anthracene	mg/L	0.000285 J	0.00373 J	0.00129	0.000833
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	0.00163	0.00162	0.000874	<0.000349
Dibenzofuran	mg/L	0.0141	0.0134	0.0178	<0.0000755
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-
Fluoranthene	mg/L	0.00602	0.00537	0.00147	<0.0000660
Fluorene	mg/L	0.0564	0.0556	0.0201	0.000137 J
Naphthalene	mg/L	0.00219	0.00245	0.0211	<0.0000755
Phenanthrene	mg/L	0.00388 J	0.00120 J	0.00241	<0.0000566
Phenol	mg/L	-	-	-	-
Pyrene	mg/L	0.00261	0.00202	0.000870	<0.000104

TABLE 3

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL SITE-WIDE GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JANUARY 2013

Sample Location:		*MW-08*	*MW-10A*	*MW-10B*	*MW-11A*
Sample ID:		*WG-1620-MW08-201230110*	*WG-1620-MW10A-20130109*	*WG-1620-MW10B-20130109*	*WG-1620-MW11A-20130109*
Sample Date:		*1/10/2013*	*1/9/2013*	*1/9/2013*	*1/9/2013*
Parameters	***Units***				
Semi-volatile Organic Compounds					
2-Methylnaphthalene	mg/L	<0.0000660	<0.0000667	-	<0.0000660
Acenaphthene	mg/L	<0.0000755	<0.0000762	0.120	0.00175
Acenaphthylene	mg/L	<0.0000566	<0.0000571	0.00108	<0.0000566
Anthracene	mg/L	0.000439 J	0.000468 J	0.00546	0.000499
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	<0.000349	0.00171	<0.000349	<0.000349
Dibenzofuran	mg/L	<0.0000755	<0.0000762	0.0401	<0.0000755
Di-n-butylphthalate (DBP)	mg/L	-	-	<0.000104	-
Fluoranthene	mg/L	<0.0000660	<0.0000667	0.00427	<0.0000660
Fluorene	mg/L	<0.0000660	<0.0000667	0.0652	<0.0000660
Naphthalene	mg/L	<0.0000755	<0.0000762	0.00399	<0.0000755
Phenanthrene	mg/L	<0.0000566	<0.0000571	-	<0.0000566
Phenol	mg/L	-	-	<0.0000377	-
Pyrene	mg/L	<0.000104	<0.000105	0.00146	<0.000104

TABLE 3

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL SITE-WIDE GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JANUARY 2013

Sample Location:		*MW-11B*	*P-10*	*P-10*	*P-12*
Sample ID:		*WG-1620-MW11B-20130109*	*WG-1620-P10-20130110*	*WG-1620-FD02-20130110*	*WG-1620-P12-20130109*
Sample Date:		*1/9/2013*	*1/10/2013*	*1/10/2013*	*1/9/2013*
				Duplicate	
Parameters	***Units***				
Semi-volatile Organic Compounds					
2-Methylnaphthalene	mg/L	-	-	-	-
Acenaphthene	mg/L	0.0631	<0.0000755	<0.0000755	<0.0000755
Acenaphthylene	mg/L	0.00136	<0.0000566	<0.0000566	<0.0000566
Anthracene	mg/L	0.000168 J	<0.0000472 J	0.000148 J	<0.0000472
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	0.00195	0.000906	0.00112	0.00142 J
Dibenzofuran	mg/L	0.00352	<0.0000755	<0.0000755	<0.0000755
Di-n-butylphthalate (DBP)	mg/L	<0.000104	<0.000104	<0.000104	<0.000104
Fluoranthene	mg/L	0.00307	<0.0000660	<0.0000660	<0.0000660
Fluorene	mg/L	0.00205	<0.0000660	<0.0000660	<0.0000660
Naphthalene	mg/L	<0.0000755	<0.0000755	<0.0000755	<0.0000755
Phenanthrene	mg/L	-	-	-	-
Phenol	mg/L	<0.0000377	<0.0000377	<0.0000377	<0.0000377
Pyrene	mg/L	0.00154	<0.000104	<0.000104	<0.000104

Notes:
J Estimated concentration.
< Less than.
- Not analyzed.

TABLE 4

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES
SEMI-ANNUAL SITE-WIDE GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JANUARY 2013

Parameter	*Associated Sample ID*	*Analyte*	*MS Recovery (percent)*	*MSD Recovery (percent)*	*RPD*	*Control Limits*		*Qualified Sample Result*	*Units*
						Recovery (percent)	*RPD (percent)*		
SVOCs	WG-1620-P12-20130109	bis(2-Ethylhexyl)phthalate (DEHP)	48	66	27	14 - 123	0-20	0.00142 J	mg/L

Notes:

J	Estimated concentration.
MS	Matrix spike.
MSD	Matrix spike duplicate.
RPD	Relative percent difference.
SVOCs	Semi-volatile organic compounds.

TABLE 5

QUALIFIED SAMPLE RESULTS DUE TO VARIABILITY IN FIELD DUPLICATE RESULTS
SEMI-ANNUAL SITE-WIDE GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JANUARY 2013

Parameter	*Analyte*	*Original Sample ID*	*Qualified Sample Result*	*Duplicate Sample ID*	*Qualified Sample Result*	*RPD*	*Units*
SVOCs	Anthracene	WG-1620-MW01A-20130109	0.000285 J	WG-1620-FD01-20130109	0.00373 J	172	mg/L
	Phenanthrene		0.00388 J		0.00120 J	106	mg/L
SVOCs	Anthracene	WG-1620-P10-20130110	0.0000472 UJ	WG-1620-FD02-20130110	0.000148 J	103	mg/L

Notes:
J Estimated concentration.
RPD Relative percent difference
SVOCs Semi-volatile organic compounds
UJ Not detected; associated reporting limit is estimated

APPENDIX D
WASTE MANIFEST

Watt 3508 2469-TD-H156

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	TXD000820266		866-780-3116	010708781 JJK

GENERATOR

5. Generator's Name and Mailing Address
UNION PACIFIC RAILROAD
c/o USA, P.O. Box 87687
Houston, TX 77287
Generator's Phone: 281-350-7197

Generator's Site Address (if different than mailing address)
4910 Liberty Road
Houston, TX 77287

6. Transporter 1 Company Name: USA WASTE TRANSPORTATION SERVICES — U.S. EPA ID Number: TXR000032045

7. Transporter 2 Company Name: ~~USA WASTE TRANSPORTATION SERVICES~~ — U.S. EPA ID Number: ~~TXR000032045~~

8. Designated Facility Name and Site Address
US ECOLOGY OF TEXAS
3277 County Road 69,
ROBSTOWN, TX 78380
Facility's Phone: ~~800-242-3200~~

U.S. EPA ID Number: TXD089452340

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3082, RCRA Haz Waste Liquid, N.O.S., 9, PGIII, Approval # 090073928-0	~~001~~ 1 D.H	DM	320	P	0914	101H	F034
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
US Ecology Profile # 090073928-0, USA Job number 2469-~~GR-H150~~ TD-H156

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: GEOFFREY REDDEN — Signature: Geoffrey Redden — Month 3 Day 20 Year 13

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: L. DE MONE HATCH — Signature: L. De Mone Hatch — Month 3 Day 20 Year 13

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month — Day — Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: J. Avitia — Signature — Month 3 Day 21 Year 13

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

APPENDIX E
POC CONCENTRATIONS VS. TIME GRAPHS

Figure E-1
2-Methylnaphthalene Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

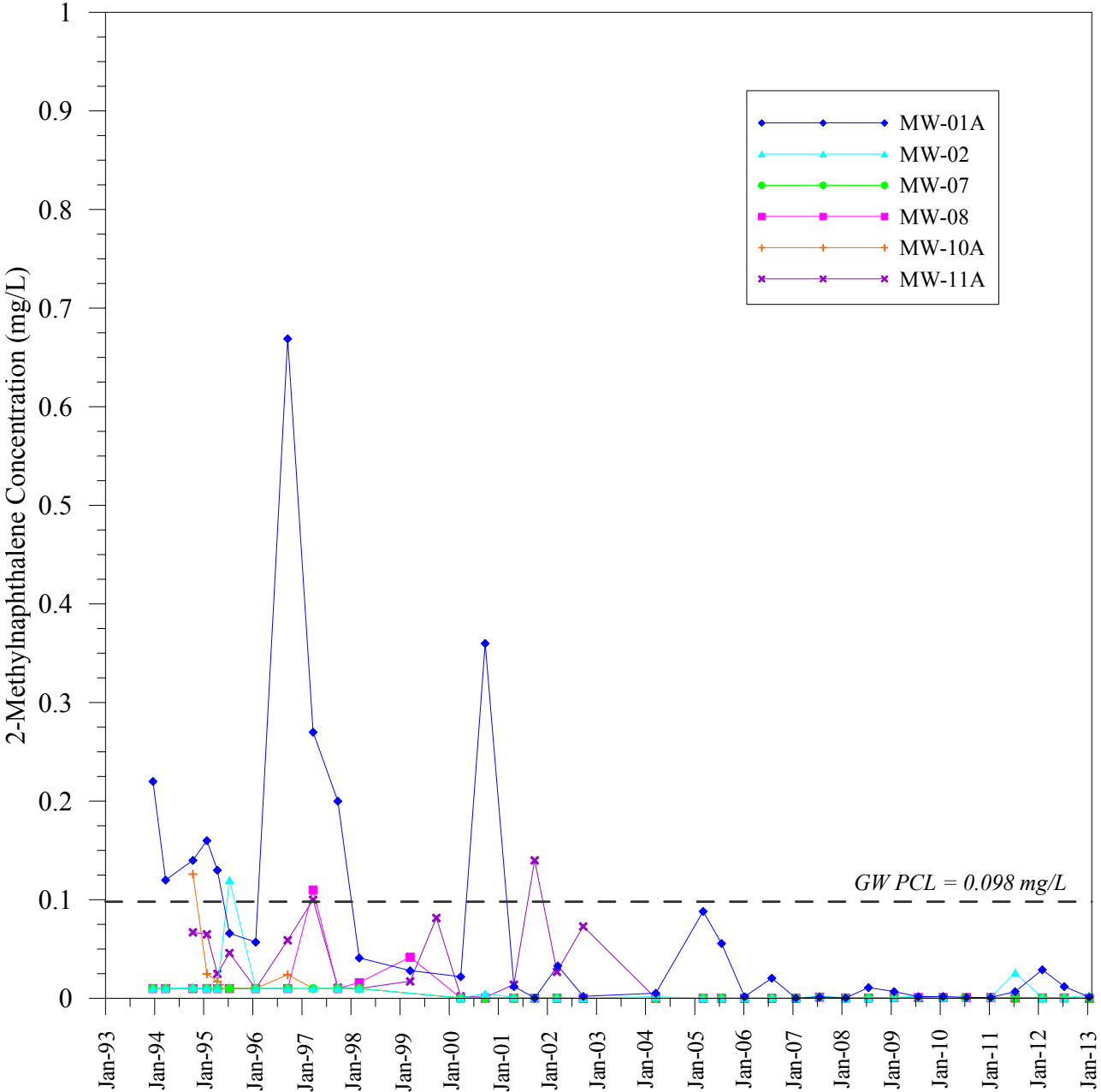


Figure E-2
Dibenzofuran Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

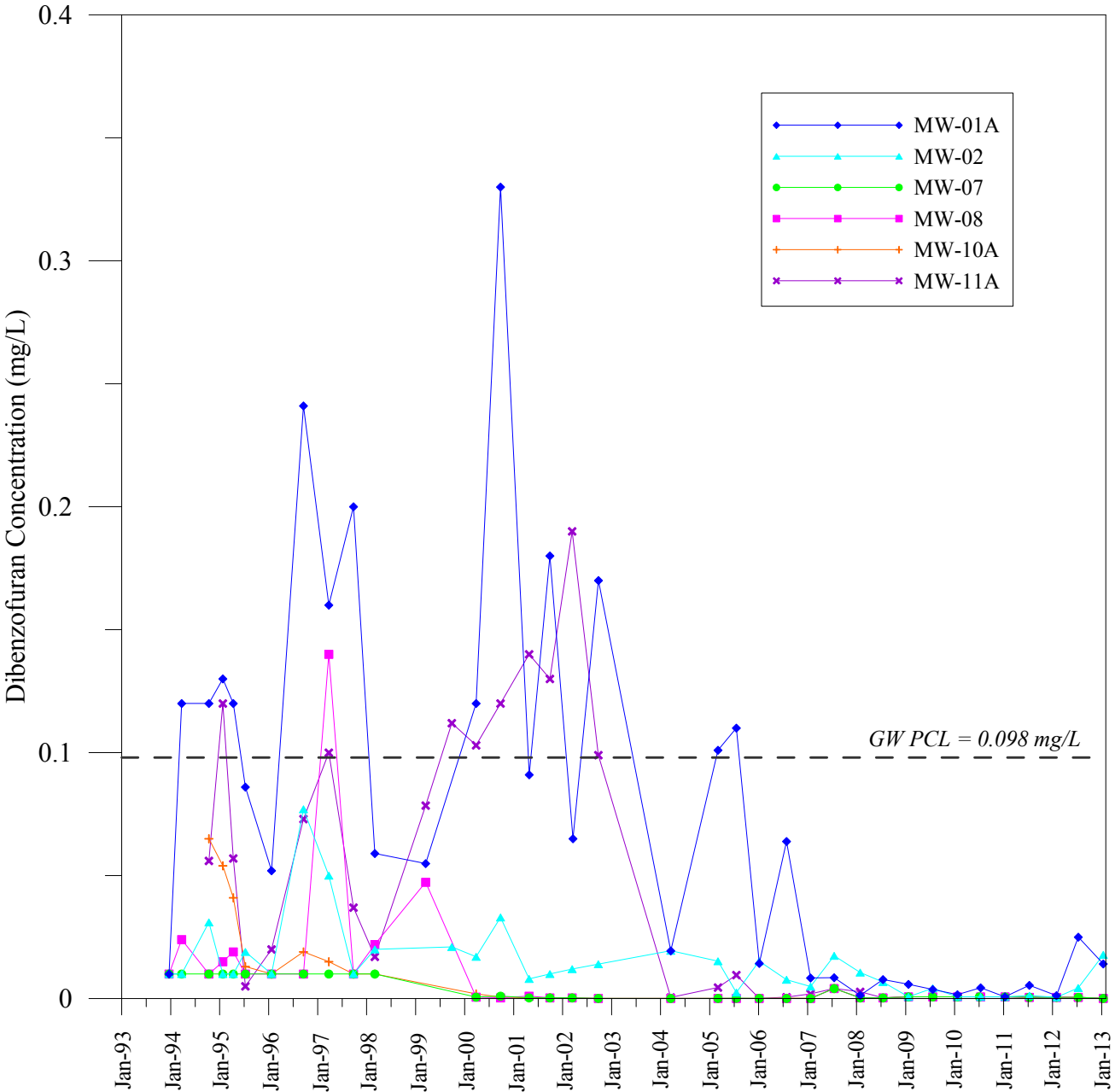


Figure E-3
Naphthalene Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

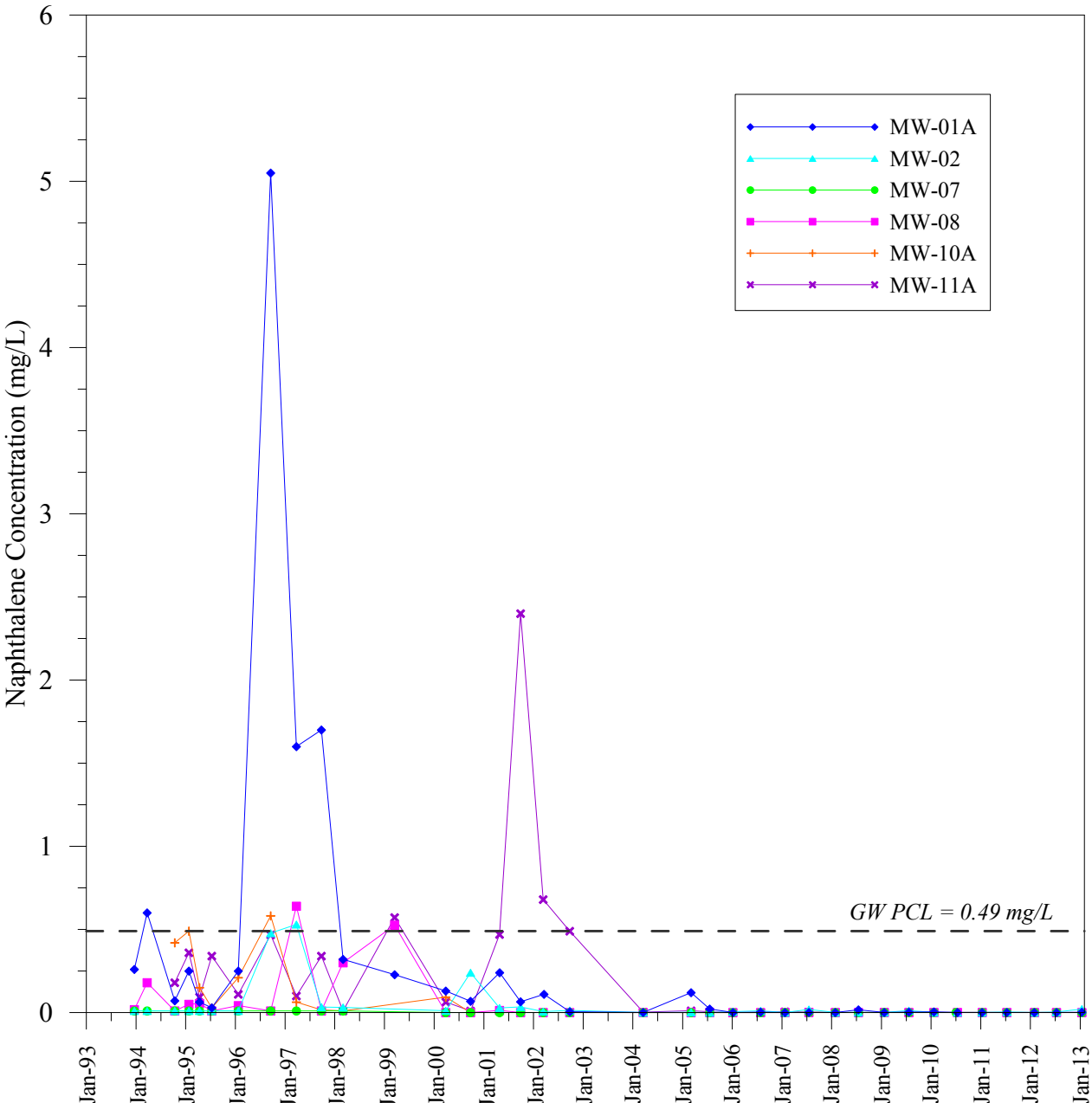


Figure E-4
Dibenzofuran Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

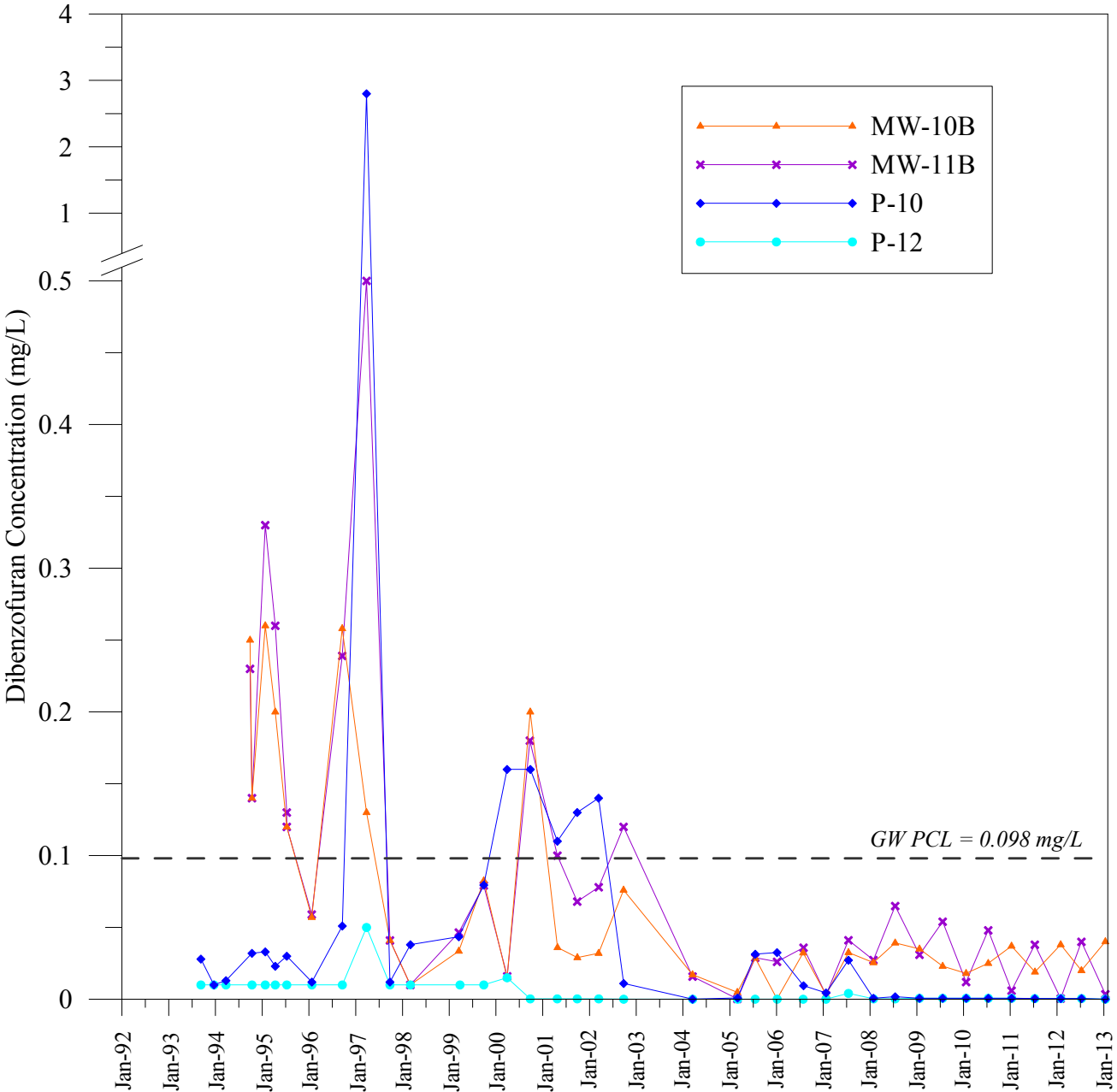
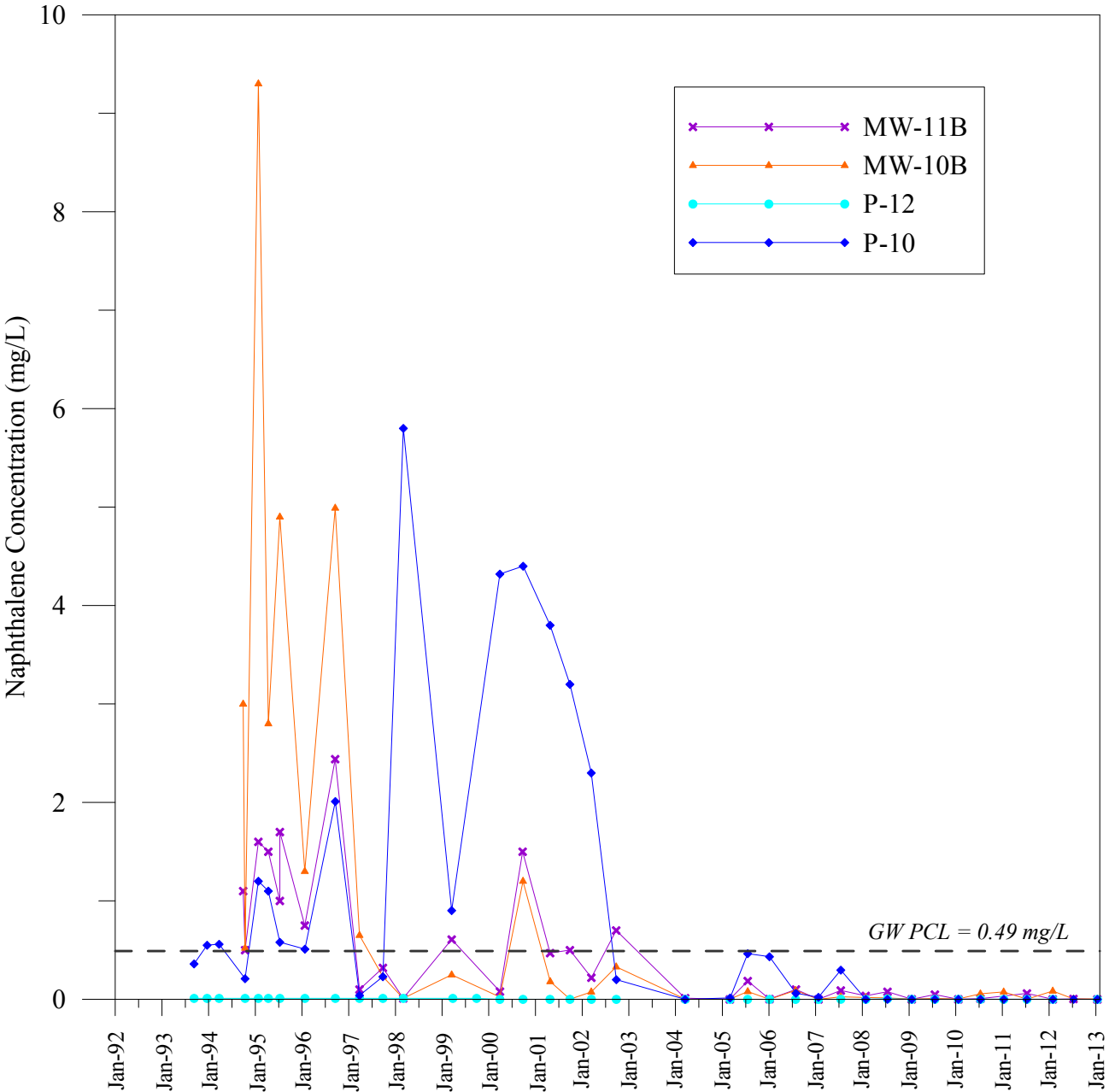
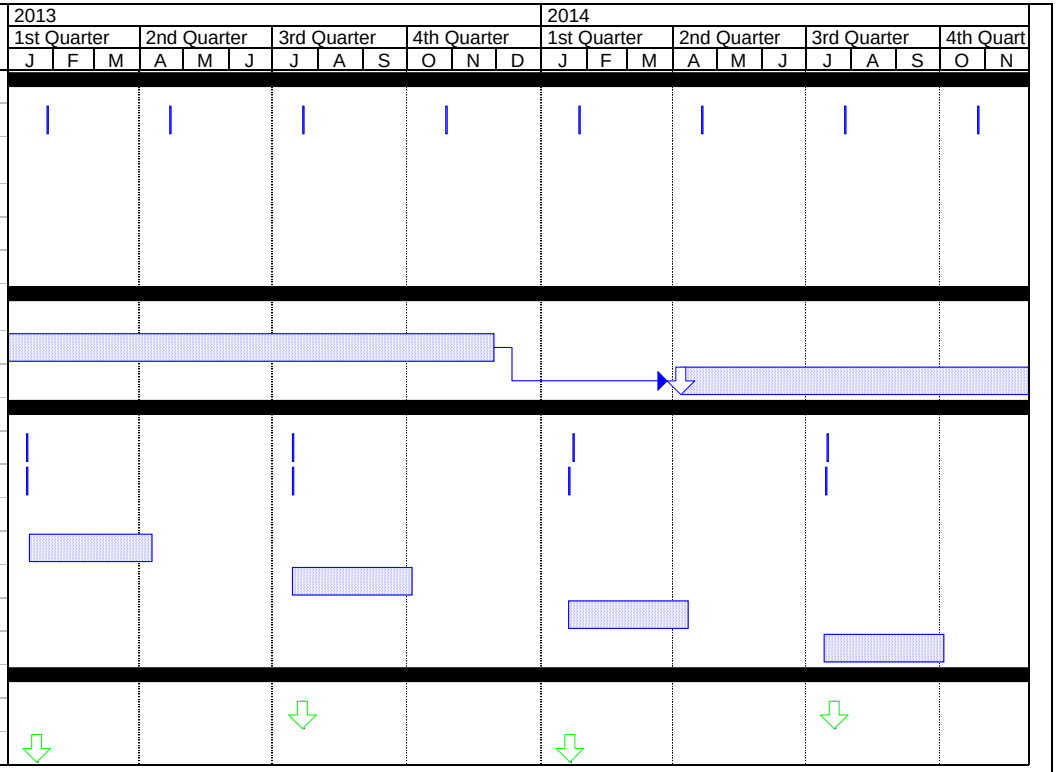


Figure E-5
Naphthalene Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1



APPENDIX F
UPDATED COMPLIANCE SCHEDULE

ID	Task Name/Permit or CP Section No.
1	**Facility Management**
2	General Inspection Requirements (quaterly) [Permit Section III.D; Table III.D]
41	**Addendum to the Affected Property Assessment Report (APAR) [Permit Section IX.A; CP Section VIII.D]**
42	Respond to TCEQ Comments on the APAR Addendum
43	Addition Delineation Field Investigation (Groundwater/Soil)
44	Prepare and Submit Final APAR Addendum
45	**Corrective Measures Implementation (CMI)/Response Action Plan (RAP) [CP Section VIII.F]**
46	Prepare and Submit Response Action Plan (RAP)
47	Implement Corrective Action as detailed in RAP
48	**Ground-Water Monitoring Program [Permit Section VI.A.; CP Section VI.]**
49	Water Level Measurements (Semiannually) [CP Section VI.C.4.a]1
69	Monitoring Well Inspections (Semiannually) [CP Section VI.C.4.a]1
87	Ground Water Sampling and Data Evaluation (2nd Semiannual) [CP Setion VI.C.2]
88	Ground Water Sampling and Data Evaluation (1st Semiannual) [CP Setion VI.C.2]
89	Ground Water Sampling and Data Evaluation (2nd Semiannual) [CP Setion VI.C.2]
90	Ground Water Sampling and Data Evaluation (1st Semiannual) [CP Setion VI.C.2]
91	Ground Water Sampling and Data Evaluation (2nd Semiannual) [CP Setion VI.C.2]
92	**Response and Reporting [Permit Section II.B.7; CP Section VII.)**
93	First Semi-Annual GW Monitoring Report - July 21 [CP Section VII.C.2]
109	Second Semi-Annual GW Monitoring Report - January 21 [CP Section VII.C.2]



Compliance Schedule
UPRR Houston Wood Preserving Works Site
Houston, Texas

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Split
External Tasks
Project Summary
External Milestone
Deadline

APPENDIX G
LABORATORY DATA QA/QC REPORT CHECKLIST

FORMER HOUSTON WOOD PRESERVING WORKS
LABORATORY DATA QA/QC REPORT CHECKLIST
ANALYTICAL REPORT 600-66920-1
FEBRUARY 1, 2013

Facility Name: Former Houston Wood Preserving Works SWMU 1	**Permit/ISW Reg No.: 50343**	**For TCEQ Use Only**
Laboratory Name: TestAmerica Laboratories, Inc.	**EPA I.D. No.:**	**Project Mgr:**
Reviewer Name: Patrick Ferrell	**TCEQ Project Manager/Data Reviewer:**	
Date: June 18, 2013	**Date:**	

Description	Status	More in Case Narrative (Check Box)	Technically Complete
1. Were laboratory analyses performed by a laboratory accredited by TCEQ, whose accreditation included the matrix (ces), methods, and parameters associated with the data? If not was an explanation given in the Case-Narrative (e.g., laboratory exemption, accreditation for method /parameter not available from TCEQ)?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
2. Was a Case Narrative from laboratory (QC data description summary) submitted with the data set?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
3. Are the sample collection, preparation and analyses methods listed in the permit, preparation and analysis methods listed in the permit or other documents specifying criteria the ones used on the final report?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
4. Were there any modifications to the sample collection, preparation and/or analytical methodology (ies)? If so was the description included on the Case-Narrative?	**Yes☐ No☒ NA☐** **Yes☐ No☐ NA☒**	☐	**Yes☐ No☐ NA☐**
5. Were all samples prepared and analyzed within required holding times?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
6. Were samples properly preserved according to method and QAPP requirements?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**

Description	Status	More in Case Narrative (Check Box)	Technically Complete
7. Have the method detection limits (MDL) and/or practical quantitation limit (PQL) been defined in the final report? Note: NELAC uses terms limit of detection (LOD) and Limit of Quantitation respectively.	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
8. Do parameters listed on final report match regulatory parameters of concern (POC) specified in permit and/or Waste Analysis Plan or other required document? Note: POC may also be referred to chemicals of concern (COCs)	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
9. Are the POC=s included within the analytical method=s target analyte list?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
10. Were the appropriate type(s) of blanks analyzed?	**Yes☒ No☐ NA☐**	☐	
11. Did any blank samples contain POC concentrations >5x or 10x of MDL? If so, please explain potential bias?	**Yes☐ No☒ NA☐**	☐	**Yes☐ No☐ NA☐**
12. Were method blanks taken through the entire preparation and analytical process?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
13. Did the calibration curve and continuing calibration verification meet regulatory (e.g. NELAC Standards) method specifications (No. of standards, acceptance criteria, etc.)?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
14. Do the initial calibration standards include a concentration below the regulatory limit/decision level? If not please explain? If an MDL and PQL are each used on a report then the relationship between the two must be defined for each method.	**Yes☒ No☐ NA☐** **Yes☐ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
15. Were manual peak integrations performed? If so pre and post chromatograms and method change histories may be requested?	**Yes☒ No☐ NA☐** **Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
16. Were all results bracketed by a lower and upper range calibration standard?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
17. Was any result reported outside of the range of the calibration standards?	**Yes☐ No☒ NA☐**	☐	**Yes☐ No☐ NA☐**
18. Were all matrix spike (MS) and MS duplicate (MSD) recoveries within the data decision making goals of QC data in the RCRA/UIC QAPP and/or within the laboratories control charts? If not were data flagged with explanation in case narrative?	**Yes☒ No☐ NA☐** **Yes☐ No☐ NA☒**	☐	**Yes☐ No☐ NA☐**
19. Were all of the MS and MSD relative percent differences (RPDs) within the data decision making goals of QC data in the RCRA/UIC QAPP? If not were data flagged with explanation in case narrative? – **Flagged with explanation in the Laboratory Review Checklist Exception Report (page 6).**	**Yes☐ No☒ NA☐** **Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
20. Were all laboratory control sample (LCS) recoveries at least within the MS and MSD ranges of recoveries and within laboratories control charts?	**Yes☒ No☐ NA☐** **Yes☐ No☐ NA☒**	☐	**Yes☐ No☐ NA☐**

If not were data flagged with explanation in Case Narrative?			

Description	Status	More in Case Narrative (Check Box)	Technically Complete
21. Were all POCs (COCs) in the LCS?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
22. Were the MS and MSD from samples collected for this work order or other samples in the analytical batch as defined by the NELAC Standards? *This information is used to identify factors contributing to matrix interferences. It should not be assumed, unless it is understood by the laboratory, that samples relating to this report were the ones selected to be fortified with the POCs.*	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**
23. Were any of the samples diluted? If so were appropriate calculations made to the MDL and/or PQL of the final report?	**Yes☒ No☐ NA☐**	☐	**Yes☐ No☐ NA☐**

LABORATORY DATA REPORT QA/QC CHECKLIST
LABORATORY CASE-NARRATIVE
(To accompany laboratory checklist)

Facility Name:	**Permit/ISW Reg No.:**
Laboratory Name:	**EPA I.D. No.:**

Method No.	Non-conformance Description	Method Modification Description
	Surrogate (TBP) recoveries for samples 600-66920-5 and 6 were outside control limits. Evidence of matrix interference is present, as seen in the need for a dilution because of the high concentration of target analytes.	
	The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 97360 was outside control limits due to possible matrix interference. Since the recoveries were within acceptance limits, the data have been qualified and reported.	
	The Acenaphthene SDLs in samples 600-66920-2, 4, 5, 6 and 7 and the Fluorene SDLs in samples 600-66920-4, 6 and 7 were elevated due to the high concentrations of these analytes. The Dibenzofuran SDL in sample 600-66920-4 was elevated due to the high concentration of this analyte.	