CORRECTIVE ACTION MONITORING REPORT
2011 SECOND SEMIANNUAL EVENT

FORMER HOUSTON WOOD PRESERVING WORKS
4910 LIBERTY ROAD
HOUSTON, TEXAS

January 2, 2012

Prepared for:

Mr. Geoffrey Reeder, P.G.
UNION PACIFIC RAILROAD COMPANY

24125 Aldine Westfield Road
Spring, Texas 77373

Prepared by:

PASTOR, BEHLING & WHEELER, LLC

2201 Double Creek Drive, Suite 4004
Round Rock, Texas 78664
(512) 671-3434

PBW Project No. 1358

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

1/8/2012
Date

Joel Strafelda
Name

General Manager / Env.
Title

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 EXECUTIVE SUMMARY

This semi-annual report presents a summary and evaluation of the Corrective Action Groundwater Monitoring for July through December 2011for 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 July 2011.

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 July 2011 sampling event show groundwater flow in the A-TZ to the west with a hydraulic gradient of approximately 0.002 ft/ft. Groundwater flow during the previous event (2011 first semi-annual monitoring event) was also to the west.

Groundwater elevation data collected in the B-TZ show groundwater flow to the west at SWMU No. 1 with a hydraulic gradient of approximately 0.0034 ft/ft. Groundwater flow during the previous event (2011 first semi-annual monitoring event) was to the east-northeast.

Analytical results from the July 2011 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 eleventh 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 2011 second semi-annual monitoring period (July through December) 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 July 11-13, 2011. 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 second half of 2011 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 July 2011, 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 2011 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 July and October, 2011 and conducted semi-annual groundwater sampling activities on July 11-13, 2011. 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 ALS Laboratory, 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 July 2011 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 2011 second semi-annual monitoring event were picked up from the Site by USA Environment, LP and transported to the U.S. Ecology Texas, LP facility, located in Robstown, Texas on October 11, 2011 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 2011 second 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 2011 second 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-TZ and the B-TZ, were monitored during this period. Groundwater elevation data collected during the July 2011 sampling event show groundwater flow in the A-TZ to the west with a hydraulic gradient of approximately 0.002 ft/ft. Groundwater flow during the previous event (2011 first semi-annual monitoring event) was also to the west.

Groundwater elevation data collected in the B-TZ show groundwater flow to the west at SWMU No. 1 with a hydraulic gradient of approximately 0.0034 ft/ft. Groundwater flow during the previous event (2011 first semi-annual monitoring event) was to the east-northeast. The change of flow direction may be a result of the drought conditions the area has been experiencing throughout 2011.

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 July 2011 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 2011 second semi-annual analytical data, the SMWU No. 1 monitoring wells have been compliant for eleven consecutive semi-annual monitoring events (5.5 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 July 2011 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). None of the data required further qualification by CRA based on the established QC criteria. Based on the QA/QC data review, the analytical data are usable for the intended use.

3.11 Reported Concentration Maps

Reported concentrations of each constituent analyzed for the 2011 second 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

Measurable amounts of LNAPL or DNAPL were not 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: 2011 Second 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		
		7/12/2011	LQ	VQ	7/13/2011	LQ		7/13/2011	LQ	VQ	7/12/2011	LQ	VQ	7/12/2011	LQ	VQ	7/13/2011	LQ	VQ	7/12/2011	LQ	VQ
Acenaphthene	1.5	0.1			0.092			0.026			<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Acenaphthylene	1.5	0.0011	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Anthracene	7.3	0.0029	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
bis(2-ethylhexyl)phthalate	0.006	0.003	J		0.0021	J		0.0021	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Dibenzofuran	0.098	0.0054			0.0038	J		0.0038	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Fluoranthene	0.98	0.0062			0.0012	J		0.0012	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Fluorene	0.98	0.056			0.015			0.015			<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
2-Methylnaphthalene	0.098	0.0068			0.0021	J		0.0021	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Naphthalene	0.49	<0.0005	U		0.0037	J		0.0037	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Phenanthrene	0.73	0.002	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Pyrene	0.73	0.0028	J		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	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

Table 2
Summary of Analytical Results for the B-Transmissive Zone (B-TZ)
Semiannual Monitoring Report: 2011 Second 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		
		7/13/2011	LQ	VQ	7/12/2011	LQ	VQ	7/12/2011	LQ	VQ	7/12/2011	LQ	VQ	7/12/2011	LQ	VQ
Acenaphthene	1.5	0.054			0.084			<0.0005	U		<0.0005	U		<0.0005	U	
Acenaphthylene	1.5	<0.0005	U		0.0012	J		<0.0005	U		<0.0005	U		<0.0005	U	
Anthracene	7.3	0.0033	J		0.0054			<0.0005	U		<0.0005	U		<0.0005	U	
bis(2-ethylhexyl)phthalate	0.006	0.0013	J		<0.0005	U		<0.0005	U		0.0015	J		<0.0005	U	
Dibenzofuran	0.098	0.019			0.038			<0.0005	U		<0.0005	U		<0.0005	U	
Di-n-butyl phthalate	2.4	<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Fluoranthene	0.98	0.0023	J		0.0046	J		<0.0005	U		<0.0005	U		<0.0005	U	
Fluorene	0.98	0.032			0.046			<0.0005	U		<0.0005	U		<0.0005	U	
Naphthalene	0.49	0.0018	J		0.06			<0.0005	U		<0.0005	U		<0.0005	U	
Phenol	7.3	<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U		<0.0005	U	
Pyrene	0.73	0.0011	J		0.0024	J		<0.0005	U		<0.0005	U		<0.0005	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

Table 3
Summary of Analytical Results for Quality Assurance/Quality Control Samples
Semiannual Monitoring Report: 2011 Second Semiannual Event

Houston Wood Preserving Works
Houston, Texas

Analyte	PCL (mg/L)	P-12(MS)[1] Matrix Spike 7/12/2011		P-12(MSD)[1] Matrix Spike Duplicate 7/12/2011	
Acenaphthene	1.5	0.03258		0.03358	
Acenaphthylene	1.5	0.03182		0.03319	
Anthracene	7.3	0.0391		0.03837	
bis(2-ethylhexyl)phthalate	0.006	0.0543		0.0563	
Dibenzofuran	0.098	0.0336		0.0344	
Di-n-butyl phthalate	2.4	0.0406		0.04061	
Fluoranthene	0.98	0.0365		0.03659	
Fluorene	0.98	0.0353		0.03493	
2-Methylnaphthalene	0.098	0.0387		0.04337	
Naphthalene	0.49	0.0313		0.03114	
Phenanthrene	0.73	0.0362		0.0362	
Phenol	7.3	0.0760		0.07754	
Pyrene	0.73	0.0420		0.04278	

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.
U = Value not detected greater than the MQL

Table 4

Water Level Measurements
Semiannual Monitoring Report: 2011 Second 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	7/11/2011	9.94	ND	20.2	19.90	37.94
MW-02	48.00	7/11/2011	10.28	ND	20.3	24.10	37.72
MW-07	48.92	7/11/2011	10.91	ND	NA	25.30	38.01
MW-08	49.33	7/11/2011	11.24	ND	26.8	25.10	38.09
MW-10A	49.82	7/11/2011	11.96	ND	25.9	20.20	37.86
MW-11A	50.07	7/11/2011	12.02	ND	24.4	24.05	38.05
B-TZ Monitoring Locations							
MW-10B	49.95	7/11/2011	12.07	ND	48.8	46.50	37.88
MW-11B	50.23	7/11/2011	12.23	ND	46.8	46.70	38.00
P-10	47.73	7/11/2011	9.84	ND	40.0	42.85	37.89
P-12	48.80	7/11/2011	10.02	ND	40.0	42.85	38.78

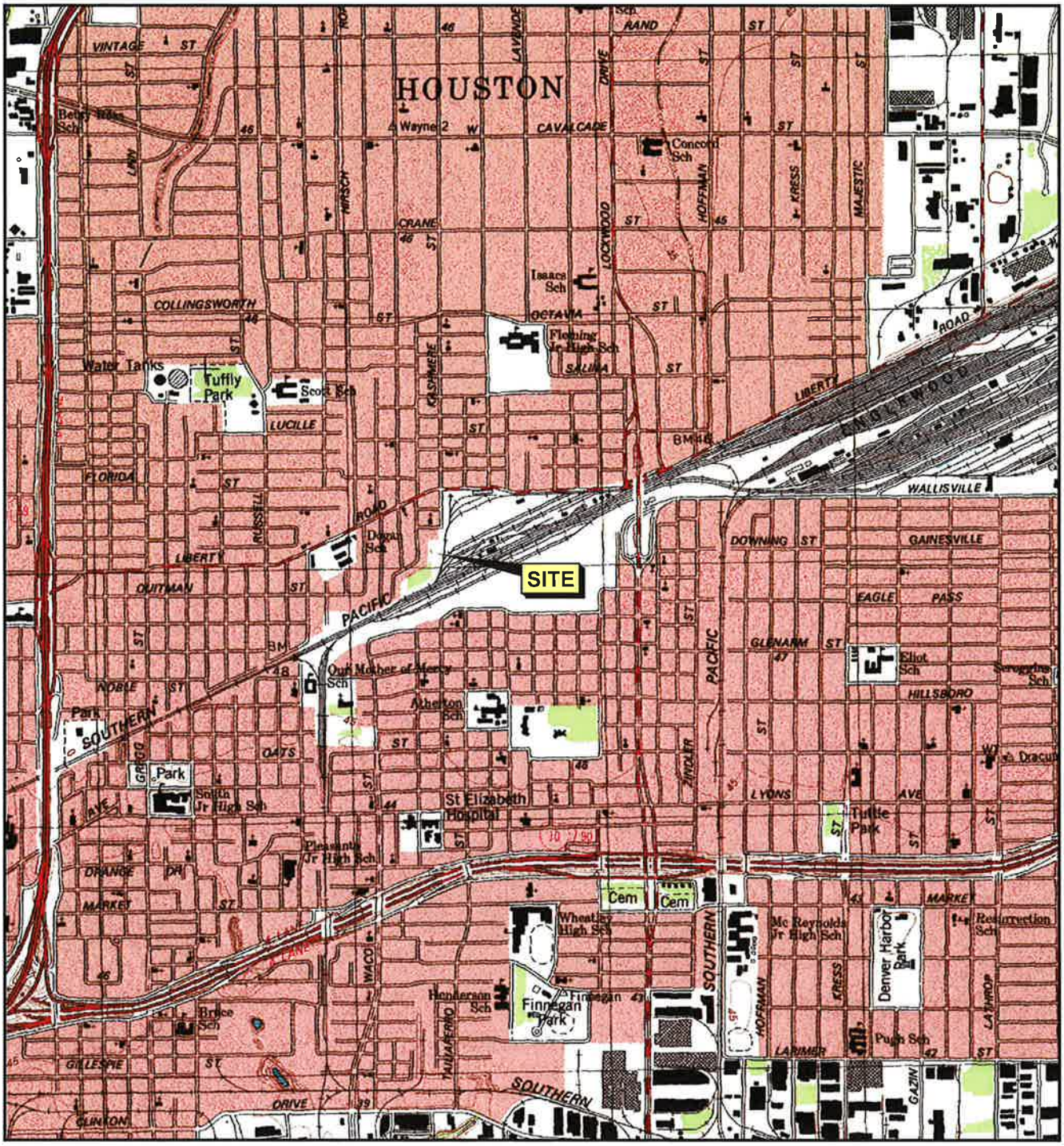
Notes
BTOC = feet below the top of the well casing
ft. MSL = feet above Mean Sea Level
NA = Not Available
*TOC elevations based on December 2010 survey (see Section 3.17)

Table 5
Compliance Status of Wells and Piezometers
Semiannual Monitoring Report: 2011 Second 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

N

Scale in Feet

0 1000 2000

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

UNION PACIFIC RAILROAD CO.

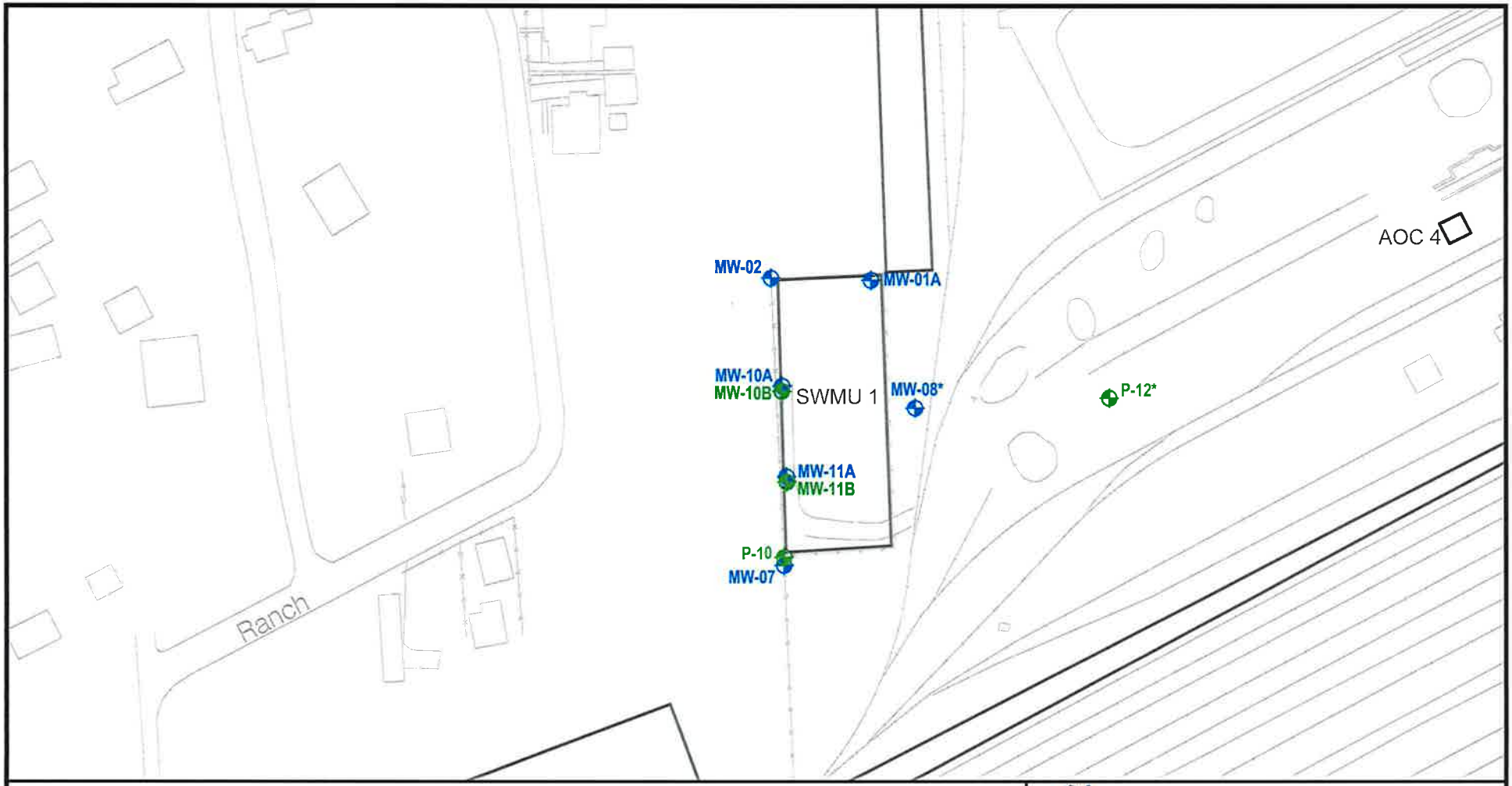
HOUSTON WOOD PRESERVING WORKS

Figure 1

SITE LOCATION MAP

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: OCT., 2011	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

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

Note:
* Background well.

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
1/02/12

N

Approx. Scale in Feet

0 60 120

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

UNION PACIFIC RAILROAD CO.

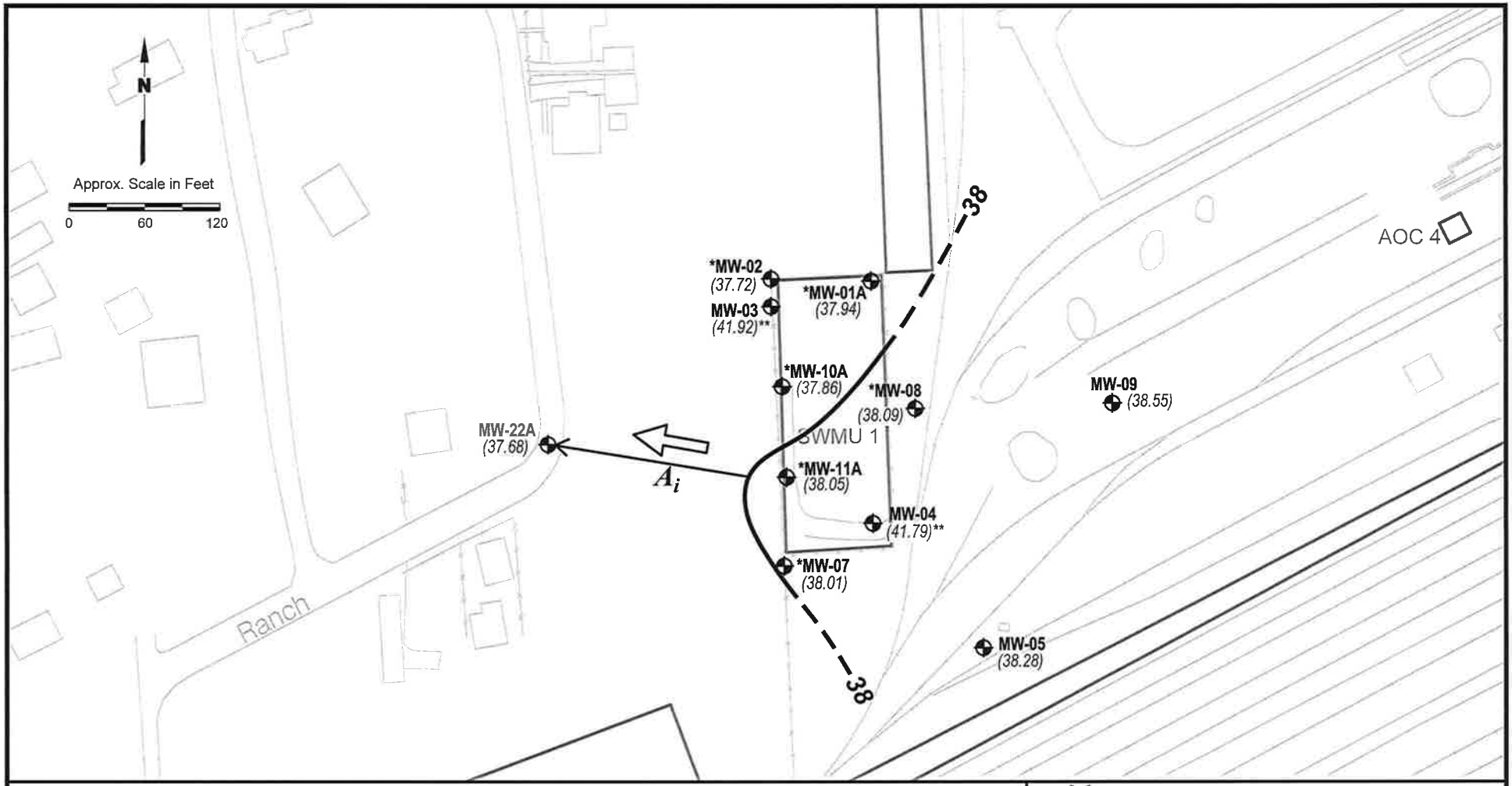
HOUSTON WOOD PRESERVING WORKS

Figure 2

CORRECTIVE ACTION MONITORING WELL NETWORK TCEQ PERMIT UNIT NO. 1

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: OCT., 2011	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

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

ESTIMATED GRADIENT

$A_i \rightarrow A_i = \frac{0.32ft}{156ft} = 0.002\ ft/ft$

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

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
11/07/12

UNION PACIFIC RAILROAD CO.

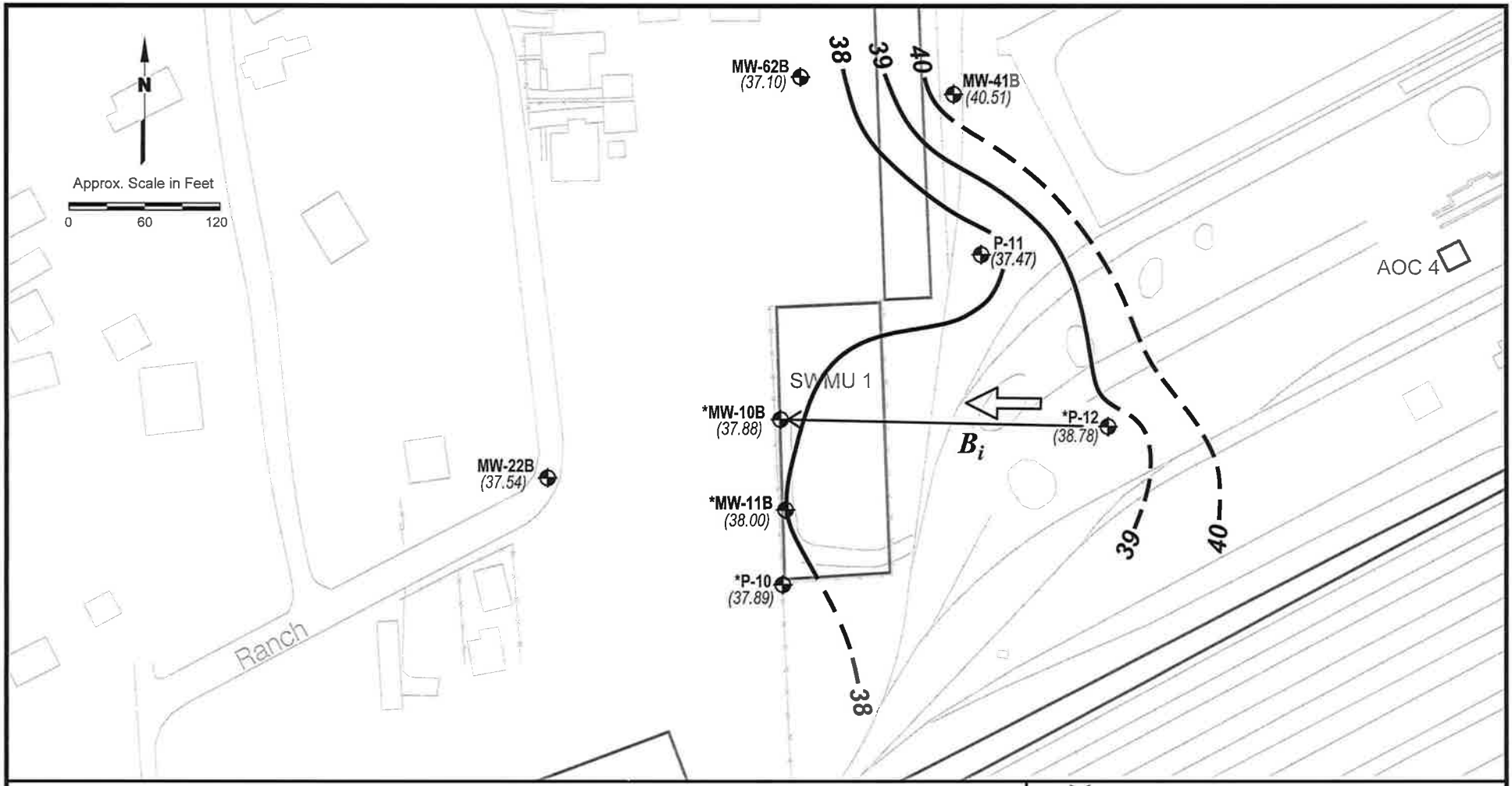
HOUSTON WOOD PRESERVING WORKS

Figure 3

A-TZ POTENTIOMETRIC SURFACE CONTOUR MAP JULY 11-12, 2011

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: OCT., 2011	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

- Road, Parking Lot, Sidewalk
- Fence
- Railroad
- B-TZ Monitoring Well Location (* - Compliance Well)
- (37.89) Groundwater Elevation (Ft, MSL)
- 38 Groundwater Elevation Contour (Ft, MSL) C.I.= 1 Ft (dashed where inferred)
- General Groundwater Flow Direction

ESTIMATED GRADIENT

B_i → $B_i = \frac{0.9ft}{263ft} = 0.0034\ ft/ft$

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

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
11/02/12

UNION PACIFIC RAILROAD CO.

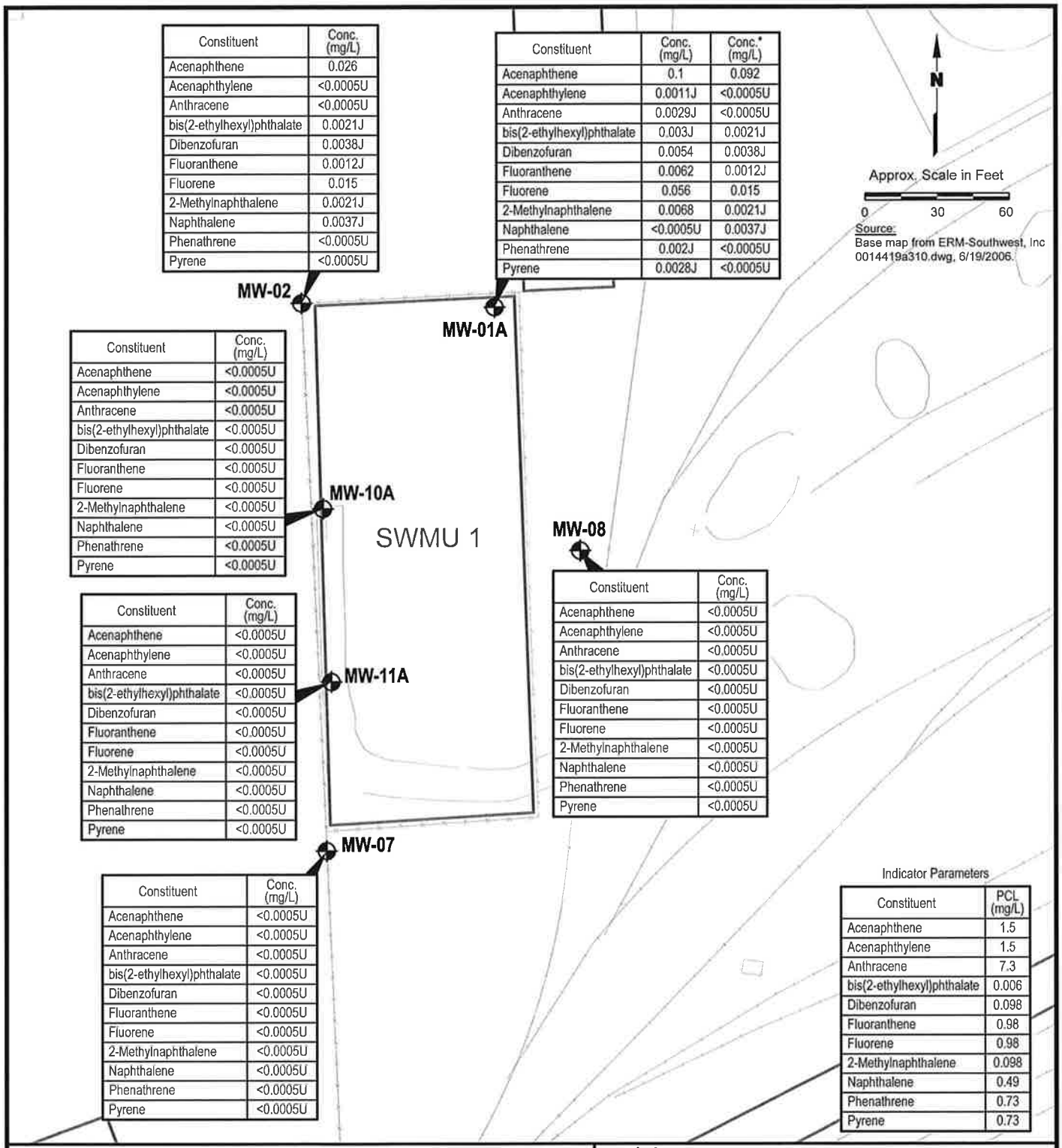
HOUSTON WOOD PRESERVING WORKS

Figure 4

B-TZ POTENTIOMETRIC SURFACE CONTOUR MAP JULY 11-12, 2011

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: OCT., 2011	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



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

MW-02

Constituent	Conc. (mg/L)
Acenaphthene	0.026
Acenaphthylene	<0.0005U
Anthracene	<0.0005U
bis(2-ethylhexyl)phthalate	0.0021J
Dibenzofuran	0.0038J
Fluoranthene	0.0012J
Fluorene	0.015
2-Methylnaphthalene	0.0021J
Naphthalene	0.0037J
Phenathrene	<0.0005U
Pyrene	<0.0005U

MW-01A

Constituent	Conc. (mg/L)	Conc.* (mg/L)
Acenaphthene	0.1	0.092
Acenaphthylene	0.0011J	<0.0005U
Anthracene	0.0029J	<0.0005U
bis(2-ethylhexyl)phthalate	0.003J	0.0021J
Dibenzofuran	0.0054	0.0038J
Fluoranthene	0.0062	0.0012J
Fluorene	0.056	0.015
2-Methylnaphthalene	0.0068	0.0021J
Naphthalene	<0.0005U	0.0037J
Phenathrene	0.002J	<0.0005U
Pyrene	0.0028J	<0.0005U

MW-10A

Constituent	Conc. (mg/L)
Acenaphthene	<0.0005U
Acenaphthylene	<0.0005U
Anthracene	<0.0005U
bis(2-ethylhexyl)phthalate	<0.0005U
Dibenzofuran	<0.0005U
Fluoranthene	<0.0005U
Fluorene	<0.0005U
2-Methylnaphthalene	<0.0005U
Naphthalene	<0.0005U
Phenathrene	<0.0005U
Pyrene	<0.0005U

MW-08

Constituent	Conc. (mg/L)
Acenaphthene	<0.0005U
Acenaphthylene	<0.0005U
Anthracene	<0.0005U
bis(2-ethylhexyl)phthalate	<0.0005U
Dibenzofuran	<0.0005U
Fluoranthene	<0.0005U
Fluorene	<0.0005U
2-Methylnaphthalene	<0.0005U
Naphthalene	<0.0005U
Phenathrene	<0.0005U
Pyrene	<0.0005U

MW-11A

Constituent	Conc. (mg/L)
Acenaphthene	<0.0005U
Acenaphthylene	<0.0005U
Anthracene	<0.0005U
bis(2-ethylhexyl)phthalate	<0.0005U
Dibenzofuran	<0.0005U
Fluoranthene	<0.0005U
Fluorene	<0.0005U
2-Methylnaphthalene	<0.0005U
Naphthalene	<0.0005U
Phenathrene	<0.0005U
Pyrene	<0.0005U

MW-07

Constituent	Conc. (mg/L)
Acenaphthene	<0.0005U
Acenaphthylene	<0.0005U
Anthracene	<0.0005U
bis(2-ethylhexyl)phthalate	<0.0005U
Dibenzofuran	<0.0005U
Fluoranthene	<0.0005U
Fluorene	<0.0005U
2-Methylnaphthalene	<0.0005U
Naphthalene	<0.0005U
Phenathrene	<0.0005U
Pyrene	<0.0005U

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 July 12-13, 2011.
3. J= Estimated value between SQL and MDL.
4. U= Value not detected greater than the MDL.

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST

1/02/12

UNION PACIFIC RAILROAD CO.

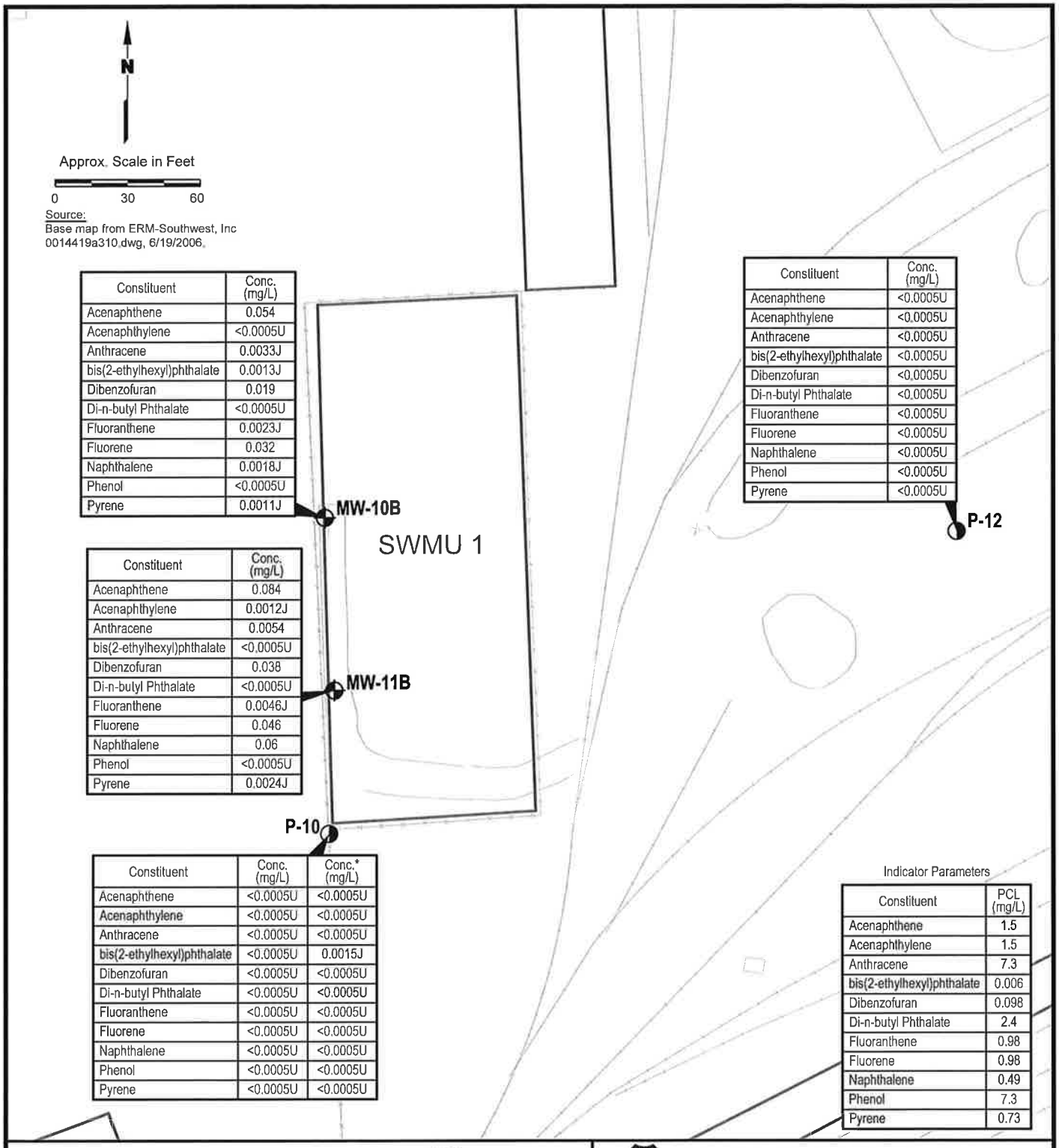
HOUSTON WOOD PRESERVING WORKS

Figure 5

A-TZ REPORTED CONCENTRATIONS 2011 2nd SEMI ANNUAL MONITORING EVENT

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: OCT., 2011	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



Constituent	Conc. (mg/L)
Acenaphthene	0.054
Acenaphthylene	<0.0005U
Anthracene	0.0033J
bis(2-ethylhexyl)phthalate	0.0013J
Dibenzofuran	0.019
Di-n-butyl Phthalate	<0.0005U
Fluoranthene	0.0023J
Fluorene	0.032
Naphthalene	0.0018J
Phenol	<0.0005U
Pyrene	0.0011J

Constituent	Conc. (mg/L)
Acenaphthene	0.084
Acenaphthylene	0.0012J
Anthracene	0.0054
bis(2-ethylhexyl)phthalate	<0.0005U
Dibenzofuran	0.038
Di-n-butyl Phthalate	<0.0005U
Fluoranthene	0.0046J
Fluorene	0.046
Naphthalene	0.06
Phenol	<0.0005U
Pyrene	0.0024J

Constituent	Conc. (mg/L)	Conc.* (mg/L)
Acenaphthene	<0.0005U	<0.0005U
Acenaphthylene	<0.0005U	<0.0005U
Anthracene	<0.0005U	<0.0005U
bis(2-ethylhexyl)phthalate	<0.0005U	0.0015J
Dibenzofuran	<0.0005U	<0.0005U
Di-n-butyl Phthalate	<0.0005U	<0.0005U
Fluoranthene	<0.0005U	<0.0005U
Fluorene	<0.0005U	<0.0005U
Naphthalene	<0.0005U	<0.0005U
Phenol	<0.0005U	<0.0005U
Pyrene	<0.0005U	<0.0005U

Constituent	Conc. (mg/L)
Acenaphthene	<0.0005U
Acenaphthylene	<0.0005U
Anthracene	<0.0005U
bis(2-ethylhexyl)phthalate	<0.0005U
Dibenzofuran	<0.0005U
Di-n-butyl Phthalate	<0.0005U
Fluoranthene	<0.0005U
Fluorene	<0.0005U
Naphthalene	<0.0005U
Phenol	<0.0005U
Pyrene	<0.0005U

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 July 12-13, 2011.
3. J= Estimated value between SQL and MDL.
4. U= Value not detected greater than the MDL.

STATE OF TEXAS
ERIC C. MATZNER
GEOLOGY
LIC. # 795
LICENSED
PROFESSIONAL GEOSCIENTIST
1/02/12

UNION PACIFIC RAILROAD CO.

HOUSTON WOOD PRESERVING WORKS

Figure 6

B-TZ REPORTED CONCENTRATIONS 2011 2nd SEMI ANNUAL MONITORING EVENT

PROJECT: 1358	BY: ZGK	REVISIONS
DATE: OCT., 2011	CHECKED: ECM	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

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: 2011 Second 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
	7/13/2011	7/13/2011	7/12/2011	7/12/2011	7/13/2011	7/12/2011	7/13/2011	7/12/2011	7/12/2011	7/12/2011
Time Sampled (hrs CST)	11:10	9:50	15:20	13:40	7:45	17:20	8:45	18:15	16:30	14:30
Temperature (°C)	24.6	24.4	24.6	24.6	24.7	24.2	23.7	24.2	24.9	24.1
pH (Standard Units)	6.94	6.67	6.91	7.09	7.07	6.94	6.76	6.87	7.10	6.77
Specific Conductivity (µS)	1,490	950	880	680	1,070	1,190	1,270	1,230	1,180	1,280
Dissolved Oxygen (mg/L)	0.74	0.35	1.04	1.25	1.04	0.38	0.26	0.29	0.79	0.53
Turbidity (NTU)	6.90	8.60	4.70	6.60	5.90	6.30	4.60	4.10	7.90	4.90

APPENDIX C
LABORATORY ANALYTICAL REPORTS and DATA USABILITY SUMMARIES

ALS Environmental

19-Jul-2011

Eric Matzner
Pastor, Behling & Wheeler, LLC
2201 Double Creek Drive
Suite 4004
Round Rock, TX 78664

Tel: (512) 671-3434
Fax: (512) 671-3446

Re: HWPW SWMU 1 Work Order: **1107385**

Dear Eric,

ALS Environmental received 12 samples on 13-Jul-2011 12:28 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 29.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Patricia L. Lynch

Electronically approved by: Makenzie L. Henderson

Patricia L. Lynch
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: T104704231-09A-TX

ALS Environmental **Date:** *19-Jul-11*

Client:	Pastor, Behling & Wheeler, LLC
Project:	HWPW SWMU 1
Work Order:	1107385

TRRP Laboratory Data Package Cover Page

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

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
c)The laboratory's LCS QC limits.

R7 Test reports for project 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 samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:
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 limits (MQLs) 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 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.

Client:	Pastor, Behling & Wheeler, LLC	**TRRP Laboratory Data Package Cover Page**
Project:	HWPW SWMU 1	
Work Order:	1107385	

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the 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 attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Patricia L. Lynch

Patricia L. Lynch
Project Manager

Laboratory Review Checklist: Reportable Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 7/19/2011					
Project Name: HWPW SWMU 1			Laboratory Job Number: 1107385					
Reviewer Name: Pat Lynch			Prep Batch Number(s): 53947					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
R1	OI	**Chain-of-custody (C-O-C)**						
		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 soils/solids samples for volatile analysis extracted with methanol per SW-846 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					
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 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					
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					
		Were all necessary corrective actions performed for the reported data?	X					
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X					

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 7/19/2011				
Project Name: HWPW SWMU 1			Laboratory Job Number: 1107385				
Reviewer Name: Pat Lynch			Prep Batch Number(s): 53947				
#[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 blank (CCB)**					
		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 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		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 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 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				

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.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 7/19/2011
Project Name: HWPW SWMU 1	Laboratory Job Number: 1107385
Reviewer Name: Pat Lynch	Prep Batch Number(s): 53947

ER#[5]	Description
	No Exceptions.

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.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

ALS Environmental

Date: 19-Jul-11

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Work Order: **1107385**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1107385-01	WG-1620-MW08-20110712	Water		7/12/2011 13:40	7/13/2011 12:28	☐
1107385-02	WG-1620-P12-20110712	Water		7/12/2011 14:30	7/13/2011 12:28	☐
1107385-03	WG-1620-MW07-20110712	Water		7/12/2011 15:20	7/13/2011 12:28	☐
1107385-04	WG-1620-P10-20110712	Water		7/12/2011 16:30	7/13/2011 12:28	☐
1107385-05	WG-1620-FD02-20110712	Water		7/12/2011 16:30	7/13/2011 12:28	☐
1107385-06	WG-1620-MW11A-20110712	Water		7/12/2011 17:20	7/13/2011 12:28	☐
1107385-07	WG-1620-MW11B-20110712	Water		7/12/2011 18:15	7/13/2011 12:28	☐
1107385-08	WG-1620-MW10A-20110713	Water		7/13/2011 07:45	7/13/2011 12:28	☐
1107385-09	WG-1620-MW10B-20110713	Water		7/13/2011 08:45	7/13/2011 12:28	☐
1107385-10	WG-1620-MW02-20110713	Water		7/13/2011 09:50	7/13/2011 12:28	☐
1107385-11	WG-1620-MW01A-20110713	Water		7/13/2011 11:10	7/13/2011 12:28	☐
1107385-12	WG-1620-FD01-20110713	Water		7/13/2011 11:10	7/13/2011 12:28	☐

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW08-20110712
Collection Date: 7/12/2011 01:40 PM

Work Order: 1107385
Lab ID: 1107385-01
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Anthracene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Fluorene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Naphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Phenanthrene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Pyrene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Surr: 2,4,6-Tribromophenol	*52.1*			*42-124*	*%REC*	1	7/18/2011 20:13
Surr: 2-Fluorobiphenyl	*48.4*			*48-120*	*%REC*	1	7/18/2011 20:13
Surr: 2-Fluorophenol	*42.7*			*20-120*	*%REC*	1	7/18/2011 20:13
Surr: 4-Terphenyl-d14	*70.3*			*51-135*	*%REC*	1	7/18/2011 20:13
Surr: Nitrobenzene-d5	*42.6*			*41-120*	*%REC*	1	7/18/2011 20:13
Surr: Phenol-d6	*44.0*			*20-120*	*%REC*	1	7/18/2011 20:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-P12-20110712
Collection Date: 7/12/2011 02:30 PM

Work Order: 1107385
Lab ID: 1107385-02
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Anthracene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Di-n-butyl phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Fluorene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Naphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Phenol	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Pyrene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Surr: 2,4,6-Tribromophenol	*61.4*			*42-124*	*%REC*	1	7/18/2011 20:36
Surr: 2-Fluorobiphenyl	*48.8*			*48-120*	*%REC*	1	7/18/2011 20:36
Surr: 2-Fluorophenol	*39.7*			*20-120*	*%REC*	1	7/18/2011 20:36
Surr: 4-Terphenyl-d14	*64.6*			*51-135*	*%REC*	1	7/18/2011 20:36
Surr: Nitrobenzene-d5	*45.5*			*41-120*	*%REC*	1	7/18/2011 20:36
Surr: Phenol-d6	*57.1*			*20-120*	*%REC*	1	7/18/2011 20:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW07-20110712
Collection Date: 7/12/2011 03:20 PM

Work Order: 1107385
Lab ID: 1107385-03
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Anthracene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Fluorene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Naphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Phenanthrene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Pyrene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Surr: 2,4,6-Tribromophenol	*60.6*			*42-124*	*%REC*	1	7/18/2011 21:45
Surr: 2-Fluorobiphenyl	*48.9*			*48-120*	*%REC*	1	7/18/2011 21:45
Surr: 2-Fluorophenol	*41.8*			*20-120*	*%REC*	1	7/18/2011 21:45
Surr: 4-Terphenyl-d14	*68.4*			*51-135*	*%REC*	1	7/18/2011 21:45
Surr: Nitrobenzene-d5	*47.0*			*41-120*	*%REC*	1	7/18/2011 21:45
Surr: Phenol-d6	*57.9*			*20-120*	*%REC*	1	7/18/2011 21:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-P10-20110712
Collection Date: 7/12/2011 04:30 PM

Work Order: 1107385
Lab ID: 1107385-04
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**		Prep: SW3510 / 7/15/11			Analyst: **JLJ**
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Anthracene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Di-n-butyl phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Fluorene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Naphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Phenol	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Pyrene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Surr: 2,4,6-Tribromophenol	*64.8*			*42-124*	*%REC*	1	7/18/2011 22:08
Surr: 2-Fluorobiphenyl	*48.1*			*48-120*	*%REC*	1	7/18/2011 22:08
Surr: 2-Fluorophenol	*42.5*			*20-120*	*%REC*	1	7/18/2011 22:08
Surr: 4-Terphenyl-d14	*66.9*			*51-135*	*%REC*	1	7/18/2011 22:08
Surr: Nitrobenzene-d5	*44.5*			*41-120*	*%REC*	1	7/18/2011 22:08
Surr: Phenol-d6	*53.3*			*20-120*	*%REC*	1	7/18/2011 22:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-FD02-20110712
Collection Date: 7/12/2011 04:30 PM

Work Order: 1107385
Lab ID: 1107385-05
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Anthracene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Bis(2-ethylhexyl)phthalate	**0.0015**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:35
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Di-n-butyl phthalate	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Fluorene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Naphthalene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Phenol	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Pyrene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Surr: 2,4,6-Tribromophenol	*72.3*			*42-124*	*%REC*	1	7/19/2011 14:35
Surr: 2-Fluorobiphenyl	*50.2*			*48-120*	*%REC*	1	7/19/2011 14:35
Surr: 2-Fluorophenol	*40.1*			*20-120*	*%REC*	1	7/19/2011 14:35
Surr: 4-Terphenyl-d14	*69.1*			*51-135*	*%REC*	1	7/19/2011 14:35
Surr: Nitrobenzene-d5	*48.8*			*41-120*	*%REC*	1	7/19/2011 14:35
Surr: Phenol-d6	*42.7*			*20-120*	*%REC*	1	7/19/2011 14:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW11A-20110712
Collection Date: 7/12/2011 05:20 PM

Work Order: 1107385
Lab ID: 1107385-06
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Anthracene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Fluorene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Naphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Phenanthrene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Pyrene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Surr: 2,4,6-Tribromophenol	*65.8*			*42-124*	*%REC*	1	7/18/2011 22:54
Surr: 2-Fluorobiphenyl	*52.5*			*48-120*	*%REC*	1	7/18/2011 22:54
Surr: 2-Fluorophenol	*51.9*			*20-120*	*%REC*	1	7/18/2011 22:54
Surr: 4-Terphenyl-d14	*69.0*			*51-135*	*%REC*	1	7/18/2011 22:54
Surr: Nitrobenzene-d5	*55.4*			*41-120*	*%REC*	1	7/18/2011 22:54
Surr: Phenol-d6	*65.5*			*20-120*	*%REC*	1	7/18/2011 22:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW11B-20110712
Collection Date: 7/12/2011 06:15 PM

Work Order: 1107385
Lab ID: 1107385-07
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
Acenaphthene	**0.084**		**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Acenaphthylene	**0.0012**	J	**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Anthracene	**0.0054**		**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 23:17
Dibenzofuran	**0.038**		**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Di-n-butyl phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 23:17
Fluoranthene	**0.0046**	J	**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Fluorene	**0.046**		**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Naphthalene	**0.060**		**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Phenol	U		0.00050	0.0050	mg/L	1	7/18/2011 23:17
Pyrene	**0.0024**	J	**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Surr: 2,4,6-Tribromophenol	*59.1*			*42-124*	*%REC*	1	7/18/2011 23:17
Surr: 2-Fluorobiphenyl	*51.5*			*48-120*	*%REC*	1	7/18/2011 23:17
Surr: 2-Fluorophenol	*50.8*			*20-120*	*%REC*	1	7/18/2011 23:17
Surr: 4-Terphenyl-d14	*70.9*			*51-135*	*%REC*	1	7/18/2011 23:17
Surr: Nitrobenzene-d5	*54.5*			*41-120*	*%REC*	1	7/18/2011 23:17
Surr: Phenol-d6	*66.1*			*20-120*	*%REC*	1	7/18/2011 23:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW10A-20110713
Collection Date: 7/13/2011 07:45 AM

Work Order: 1107385
Lab ID: 1107385-08
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D			Method: **SW8270**		Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Anthracene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Fluorene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Naphthalene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Phenanthrene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Pyrene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Surr: 2,4,6-Tribromophenol	*66.7*			*42-124*	*%REC*	1	7/19/2011 14:58
Surr: 2-Fluorobiphenyl	*50.6*			*48-120*	*%REC*	1	7/19/2011 14:58
Surr: 2-Fluorophenol	*42.1*			*20-120*	*%REC*	1	7/19/2011 14:58
Surr: 4-Terphenyl-d14	*71.7*			*51-135*	*%REC*	1	7/19/2011 14:58
Surr: Nitrobenzene-d5	*45.4*			*41-120*	*%REC*	1	7/19/2011 14:58
Surr: Phenol-d6	*45.9*			*20-120*	*%REC*	1	7/19/2011 14:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW10B-20110713
Collection Date: 7/13/2011 08:45 AM

Work Order: 1107385
Lab ID: 1107385-09
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
Acenaphthene	**0.054**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/19/2011 00:04
Anthracene	**0.0033**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Bis(2-ethylhexyl)phthalate	**0.0013**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Dibenzofuran	**0.019**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Di-n-butyl phthalate	U		0.00050	0.0050	mg/L	1	7/19/2011 00:04
Fluoranthene	**0.0023**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Fluorene	**0.032**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Naphthalene	**0.0018**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Phenol	U		0.00050	0.0050	mg/L	1	7/19/2011 00:04
Pyrene	**0.0011**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Surr: 2,4,6-Tribromophenol	*61.8*			*42-124*	*%REC*	1	7/19/2011 00:04
Surr: 2-Fluorobiphenyl	*54.8*			*48-120*	*%REC*	1	7/19/2011 00:04
Surr: 2-Fluorophenol	*55.3*			*20-120*	*%REC*	1	7/19/2011 00:04
Surr: 4-Terphenyl-d14	*73.1*			*51-135*	*%REC*	1	7/19/2011 00:04
Surr: Nitrobenzene-d5	*60.0*			*41-120*	*%REC*	1	7/19/2011 00:04
Surr: Phenol-d6	*73.2*			*20-120*	*%REC*	1	7/19/2011 00:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW02-20110713
Collection Date: 7/13/2011 09:50 AM

Work Order: 1107385
Lab ID: 1107385-10
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	**0.0021**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Acenaphthene	**0.026**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/19/2011 00:27
Anthracene	U		0.00050	0.0050	mg/L	1	7/19/2011 00:27
Bis(2-ethylhexyl)phthalate	**0.0021**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Dibenzofuran	**0.0038**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Fluoranthene	**0.0012**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Fluorene	**0.015**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Naphthalene	**0.0037**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Phenanthrene	U		0.00050	0.0050	mg/L	1	7/19/2011 00:27
Pyrene	U		0.00050	0.0050	mg/L	1	7/19/2011 00:27
Surr: 2,4,6-Tribromophenol	*64.9*			*42-124*	*%REC*	1	7/19/2011 00:27
Surr: 2-Fluorobiphenyl	*53.9*			*48-120*	*%REC*	1	7/19/2011 00:27
Surr: 2-Fluorophenol	*54.0*			*20-120*	*%REC*	1	7/19/2011 00:27
Surr: 4-Terphenyl-d14	*71.4*			*51-135*	*%REC*	1	7/19/2011 00:27
Surr: Nitrobenzene-d5	*57.6*			*41-120*	*%REC*	1	7/19/2011 00:27
Surr: Phenol-d6	*71.6*			*20-120*	*%REC*	1	7/19/2011 00:27

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW01A-20110713
Collection Date: 7/13/2011 11:10 AM

Work Order: 1107385
Lab ID: 1107385-11
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	**0.0068**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Acenaphthene	**0.10**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Acenaphthylene	**0.0011**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Anthracene	**0.0029**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Bis(2-ethylhexyl)phthalate	**0.0030**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Dibenzofuran	**0.0054**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Fluoranthene	**0.0062**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Fluorene	**0.056**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Naphthalene	U		0.00050	0.0050	mg/L	1	7/19/2011 13:49
Phenanthrene	**0.0020**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Pyrene	**0.0028**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Surr: 2,4,6-Tribromophenol	*78.8*			*42-124*	*%REC*	1	7/19/2011 13:49
Surr: 2-Fluorobiphenyl	*66.1*			*48-120*	*%REC*	1	7/19/2011 13:49
Surr: 2-Fluorophenol	*50.8*			*20-120*	*%REC*	1	7/19/2011 13:49
Surr: 4-Terphenyl-d14	*73.0*			*51-135*	*%REC*	1	7/19/2011 13:49
Surr: Nitrobenzene-d5	*61.2*			*41-120*	*%REC*	1	7/19/2011 13:49
Surr: Phenol-d6	*57.2*			*20-120*	*%REC*	1	7/19/2011 13:49

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-FD01-20110713
Collection Date: 7/13/2011 11:10 AM

Work Order: 1107385
Lab ID: 1107385-12
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	**0.0021**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Acenaphthene	**0.092**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:12
Anthracene	**0.0027**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Bis(2-ethylhexyl)phthalate	**0.0012**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Dibenzofuran	**0.0027**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Fluoranthene	**0.0059**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Fluorene	**0.051**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Naphthalene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:12
Phenanthrene	**0.0011**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Pyrene	**0.0027**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Surr: 2,4,6-Tribromophenol	*92.5*			*42-124*	*%REC*	1	7/19/2011 14:12
Surr: 2-Fluorobiphenyl	*74.2*			*48-120*	*%REC*	1	7/19/2011 14:12
Surr: 2-Fluorophenol	*67.2*			*20-120*	*%REC*	1	7/19/2011 14:12
Surr: 4-Terphenyl-d14	*82.1*			*51-135*	*%REC*	1	7/19/2011 14:12
Surr: Nitrobenzene-d5	*63.5*			*41-120*	*%REC*	1	7/19/2011 14:12
Surr: Phenol-d6	*72.8*			*20-120*	*%REC*	1	7/19/2011 14:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 19-Jul-11

WorkOrder: 1107385
InstrumentID: SV-3
Test Code: 8270_W
Test Number: SW8270
Test Name: Semivolatiles - SW8270D

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	2-Methylnaphthalene	91-57-6	0.0027	0.00050	0.0050
A	Acenaphthene	83-32-9	0.0027	0.00050	0.0050
A	Acenaphthylene	208-96-8	0.0028	0.00050	0.0050
A	Anthracene	120-12-7	0.0029	0.00050	0.0050
A	Bis(2-ethylhexyl)phthalate	117-81-7	0.0028	0.00050	0.0050
A	Dibenzofuran	132-64-9	0.0029	0.00050	0.0050
A	Di-n-butyl phthalate	84-74-2	0.0030	0.00050	0.0050
A	Fluoranthene	206-44-0	0.0028	0.00050	0.0050
A	Fluorene	86-73-7	0.0028	0.00050	0.0050
A	Naphthalene	91-20-3	0.0029	0.00050	0.0050
A	Phenanthrene	85-01-8	0.0029	0.00050	0.0050
A	Phenol	108-95-2	0.0024	0.00050	0.0050
A	Pyrene	129-00-0	0.0028	0.00050	0.0050
S	Surr: 2,4,6-Tribromophenol	118-79-6	0	0.0050	0.0050
S	Surr: 2-Fluorobiphenyl	321-60-8	0	0.0050	0.0050
S	Surr: 2-Fluorophenol	367-12-4	0	0.0050	0.0050
S	Surr: 4-Terphenyl-d14	1718-51-0	0	0.0050	0.0050
S	Surr: Nitrobenzene-d5	4165-60-0	0	0.0050	0.0050
S	Surr: Phenol-d6	13127-88-3	0	0.0050	0.0050

ALS Environmental

Date: 19-Jul-11

WorkOrder: 1107385
InstrumentID: SV-5
Test Code: 8270_W
Test Number: SW8270
Test Name: Semivolatiles - SW8270D

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	2-Methylnaphthalene	91-57-6	0.0026	0.00050	0.0050
A	Acenaphthene	83-32-9	0.0026	0.00050	0.0050
A	Acenaphthylene	208-96-8	0.0025	0.00050	0.0050
A	Anthracene	120-12-7	0.0027	0.00050	0.0050
A	Bis(2-ethylhexyl)phthalate	117-81-7	0.0026	0.00050	0.0050
A	Dibenzofuran	132-64-9	0.0027	0.00050	0.0050
A	Di-n-butyl phthalate	84-74-2	0.0027	0.00050	0.0050
A	Fluoranthene	206-44-0	0.0027	0.00050	0.0050
A	Fluorene	86-73-7	0.0028	0.00050	0.0050
A	Naphthalene	91-20-3	0.0025	0.00050	0.0050
A	Phenanthrene	85-01-8	0.0027	0.00050	0.0050
A	Phenol	108-95-2	0.0022	0.00050	0.0050
A	Pyrene	129-00-0	0.0028	0.00050	0.0050
S	Surr: 2,4,6-Tribromophenol	118-79-6	0	0.0050	0.0050
S	Surr: 2-Fluorobiphenyl	321-60-8	0	0.0050	0.0050
S	Surr: 2-Fluorophenol	367-12-4	0	0.0050	0.0050
S	Surr: 4-Terphenyl-d14	1718-51-0	0	0.0050	0.0050
S	Surr: Nitrobenzene-d5	4165-60-0	0	0.0050	0.0050
S	Surr: Phenol-d6	13127-88-3	0	0.0050	0.0050

Batch ID: **53947** Instrument ID **SV-3** Method: **SW8270**

MBLK Sample ID: **SBLKW3-110715-53947** Units: **µg/L** Analysis Date: **7/15/2011 02:14 PM**

Client ID: Run ID: **SV-3_110718A** SeqNo: **2463804** Prep Date: **7/15/2011** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	U	5.0								
Acenaphthene	U	5.0								
Acenaphthylene	U	5.0								
Anthracene	U	5.0								
Bis(2-ethylhexyl)phthalate	U	5.0								
Dibenzofuran	U	5.0								
Di-n-butyl phthalate	U	5.0								
Fluoranthene	U	5.0								
Fluorene	U	5.0								
Naphthalene	U	5.0								
Phenanthrene	U	5.0								
Phenol	U	5.0								
Pyrene	U	5.0								
Surr: 2,4,6-Tribromophenol	*83.2*	5.0	*100*	0	*83.2*	*42-124*	0			
Surr: 2-Fluorobiphenyl	*72.75*	5.0	*100*	0	*72.7*	*48-120*	0			
Surr: 2-Fluorophenol	*61.06*	5.0	*100*	0	*61.1*	*20-120*	0			
Surr: 4-Terphenyl-d14	*77.77*	5.0	*100*	0	*77.8*	*51-135*	0			
Surr: Nitrobenzene-d5	*72.15*	5.0	*100*	0	*72.1*	*41-120*	0			
Surr: Phenol-d6	*58.06*	5.0	*100*	0	*58.1*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1107385
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **53947** Instrument ID **SV-3** Method: **SW8270**

LCS Sample ID: **SLCSW3-110715-53947** Units: **µg/L** Analysis Date: **7/15/2011 02:37 PM**

Client ID: Run ID: **SV-3_110718A** SeqNo: **2463805** Prep Date: **7/15/2011** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	42.54	5.0	50	0	85.1	55-120	0			
Acenaphthene	44.09	5.0	50	0	88.2	55-120	0			
Acenaphthylene	42.99	5.0	50	0	86	55-120	0			
Anthracene	44.57	5.0	50	0	89.1	55-120	0			
Bis(2-ethylhexyl)phthalate	44.93	5.0	50	0	89.9	50-125	0			
Dibenzofuran	44.21	5.0	50	0	88.4	55-120	0			
Di-n-butyl phthalate	45.21	5.0	50	0	90.4	55-120	0			
Fluoranthene	46.16	5.0	50	0	92.3	55-120	0			
Fluorene	44.51	5.0	50	0	89	55-120	0			
Naphthalene	42.75	5.0	50	0	85.5	55-120	0			
Phenanthrene	44.58	5.0	50	0	89.2	55-120	0			
Phenol	75.45	5.0	100	0	75.5	50-120	0			
Pyrene	45.13	5.0	50	0	90.3	55-120	0			
Surr: 2,4,6-Tribromophenol	*80.49*	5.0	*100*	0	*80.5*	*42-124*	0			
Surr: 2-Fluorobiphenyl	*79.19*	5.0	*100*	0	*79.2*	*48-120*	0			
Surr: 2-Fluorophenol	*72.33*	5.0	*100*	0	*72.3*	*20-120*	0			
Surr: 4-Terphenyl-d14	*74.84*	5.0	*100*	0	*74.8*	*51-135*	0			
Surr: Nitrobenzene-d5	*73.57*	5.0	*100*	0	*73.6*	*41-120*	0			
Surr: Phenol-d6	*69.02*	5.0	*100*	0	*69*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1107385
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **53947** Instrument ID **SV-3** Method: **SW8270**

MS Sample ID: **1107385-02AMS** Units: **µg/L** Analysis Date: **7/18/2011 08:59 PM**

Client ID: **WG-1620-P12-20110712** Run ID: **SV-3_110718A** SeqNo: **2463829** Prep Date: **7/15/2011** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	38.71	5.0	50	0	77.4	55-120	0			
Acenaphthene	32.58	5.0	50	0	65.2	55-120	0			
Acenaphthylene	31.82	5.0	50	0	63.6	55-120	0			
Anthracene	39.14	5.0	50	0	78.3	55-120	0			
Bis(2-ethylhexyl)phthalate	54.34	5.0	50	0	109	50-125	0			
Dibenzofuran	33.62	5.0	50	0	67.2	55-120	0			
Di-n-butyl phthalate	40.58	5.0	50	0	81.2	55-120	0			
Fluoranthene	36.52	5.0	50	0	73	55-120	0			
Fluorene	35.28	5.0	50	0	70.6	55-120	0			
Naphthalene	31.34	5.0	50	0	62.7	55-120	0			
Phenanthrene	36.2	5.0	50	0	72.4	55-120	0			
Phenol	76.02	5.0	100	0	76	50-120	0			
Pyrene	42	5.0	50	0	84	55-120	0			
Surr: 2,4,6-Tribromophenol	*61.38*	5.0	*100*	0	*61.4*	*42-124*	0			
Surr: 2-Fluorobiphenyl	*52.17*	5.0	*100*	0	*52.2*	*48-120*	0			
Surr: 2-Fluorophenol	*59.75*	5.0	*100*	0	*59.7*	*20-120*	0			
Surr: 4-Terphenyl-d14	*71.96*	5.0	*100*	0	*72*	*51-135*	0			
Surr: Nitrobenzene-d5	*51.96*	5.0	*100*	0	*52*	*41-120*	0			
Surr: Phenol-d6	*63.12*	5.0	*100*	0	*63.1*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1107385
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **53947** Instrument ID **SV-3** Method: **SW8270**

MSD Sample ID: **1107385-02AMSD** Units: **µg/L** Analysis Date: **7/18/2011 09:22 PM**

Client ID: **WG-1620-P12-20110712** Run ID: **SV-3_110718A** SeqNo: **2463830** Prep Date: **7/15/2011** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	43.37	5.0	50	0	86.7	55-120	38.71	11.4	20	
Acenaphthene	33.58	5.0	50	0	67.2	55-120	32.58	3.04	20	
Acenaphthylene	33.19	5.0	50	0	66.4	55-120	31.82	4.21	20	
Anthracene	38.37	5.0	50	0	76.7	55-120	39.14	1.99	20	
Bis(2-ethylhexyl)phthalate	56.3	5.0	50	0	113	50-125	54.34	3.54	20	
Dibenzofuran	34.4	5.0	50	0	68.8	55-120	33.62	2.29	20	
Di-n-butyl phthalate	40.61	5.0	50	0	81.2	55-120	40.58	0.0611	20	
Fluoranthene	36.59	5.0	50	0	73.2	55-120	36.52	0.195	20	
Fluorene	34.93	5.0	50	0	69.9	55-120	35.28	0.998	20	
Naphthalene	31.14	5.0	50	0	62.3	55-120	31.34	0.671	20	
Phenanthrene	36.2	5.0	50	0	72.4	55-120	36.2	0.00125	20	
Phenol	77.54	5.0	100	0	77.5	50-120	76.02	1.97	20	
Pyrene	42.78	5.0	50	0	85.6	55-120	42	1.85	20	
Surr: 2,4,6-Tribromophenol	*62.36*	5.0	*100*	0	*62.4*	*42-124*	61.38	*1.59*	*20*	
Surr: 2-Fluorobiphenyl	*52.73*	5.0	*100*	0	*52.7*	*48-120*	52.17	*1.07*	*20*	
Surr: 2-Fluorophenol	*60.39*	5.0	*100*	0	*60.4*	*20-120*	59.75	*1.07*	*20*	
Surr: 4-Terphenyl-d14	*72.33*	5.0	*100*	0	*72.3*	*51-135*	71.96	*0.513*	*20*	
Surr: Nitrobenzene-d5	*52.4*	5.0	*100*	0	*52.4*	*41-120*	51.96	*0.836*	*20*	
Surr: Phenol-d6	*65.12*	5.0	*100*	0	*65.1*	*20-120*	63.12	*3.12*	*20*	

The following samples were analyzed in this batch:

1107385-01A	1107385-02A	1107385-03A
1107385-04A	1107385-05A	1107385-06A
1107385-07A	1107385-08A	1107385-09A
1107385-10A	1107385-11A	1107385-12A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 19-Jul-11

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
WorkOrder: 1107385

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 1 of 2

COC ID: 26847

1107385

PBW: Pastor, Behling & Wheeler, LLC

Project: UPRR Houston Wood SWMU 1

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	UPRR Houston Wood SWMU 1	A	LL SVOC (8270) Select (ATZ SPECIFIC LIST)
Work Order		Project Number	1129.05	B	LL SVOC (8270) SELECT (BTZ SPECIFIC LIST)
Company Name	Pastor, Behling & Wheeler, LLC	Bill To Company	Union Pacific Railroad	C	
Send Report To	Eric Maltzahn	Invoice Attn		D	
Address	2201 Double Creek Drive Suite 4004	Address	1400 Douglas Street Stop 0710	E F	
City/State/Zip	Round Rock, TX 78664	City/State/Zip	Omaha, NE 68179	G	
Phone	(512) 671-3434	Phone		H	
Fax	(512) 671-3446	Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WG-1620-MW08-20110712	7-12-11	1340	W	—	2	X										
2	WG-1620-P12-20110712	7-12-11	1430	W	—	2		X									
3	WG-1620-P12MS-20110712	7-12-11	1430	W	—	2		X									
4	WG-1620-P12MSD-20110712	7-12-11	1430	W	—	2		X									
5	WG-1620-MW07-20110712	7-12-11	1520	W	—	2	X										
6	WG-1620-P10-20110712	7-12-11	1630	W	—	2		X									
7	WG-1620-FD02-20110712	7-12-11	1630	W	—	2		X									
8	WG-1620-MW11A-20110712	7-12-11	1720	W	—	2	X										
9	WG-1620-MW11B-20110712	7-12-11	1815	W	—	2		X									
10	WG-1620-MW10A-20110713	7-13-11	0745	W	—		X										

Sampler(s) Please Print & Sign: JOHN BRAYTON John Brayton

Shipment Method: HAND DELIVERED

Required Turnaround Time: (Check Box) ☐ 5 or ___ ☐ 2 WK Days ☐ 3 WK Days

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
John Brayton	7-13-11	12:28	
Relinquished by:	Date:	Time:	Received by (Laboratory):
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: 10 Day TAT

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 2 of 2

COC ID: 26846

☐ ALS Environmental
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager: | **ALS Work Order #:**

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	UPRR Houston Wood SWMU 1	A	LL SVOC (8270) Select (CATZ SPECIFIC LIST)
Work Order		Project Number	1139-03	B	LL SVOC (8270) SELECT (BTZ SPECIFIC LIST)
Company Name	Pastor, Behling & Wheeler, LLC	Bill To Company	Union Pacific Railroad	C	
Send Report To	Eric Metzger	Invoice Attn		D	
Address	2201 Double Creek Drive Suite 2004	Address	1400 Douglas Street Stop 0750	E F	
City/State/Zip	Round Rock, TX 78664	City/State/Zip	Omaha, NE 681790750	G	
Phone	(512) 671-3434	Phone		H	
Fax	(512) 671-3446	Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WG-1620-MW10B-20110713	7-13-11	0845	W	-	2		X									
2	WG-1620-MW02-20110713	7-13-11	0950	W	-	2	X										
3	WG-1620-MW01A-20110713	7-13-11	1110	W	-	2	X										
4	WG-1620-FD01-20110713	7-13-11	1110	W	-	2	X										
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: JOHN BRAYNON John Brayn

Shipment Method: HAND DELIVERED

Required Turnaround Time: (Check Box) ☐ Other ☐ 5 WK Days ☐ 2 WK Days ☐ 1 WK Days ☐ 72 Hour ☐ 48 Hour ☐ 24 Hour

Results Due Date:

Relinquished by: John Brayn	Date: 7-13-11	Time:	Received by:	Notes: 10 Day TAT
Relinquished by:	Date:	Time: 12:28	Received by (Laboratory):	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☐ Level III Std QC/Raw Data ☐ TRRP Checklist
☐ Level IV SW846/CLP ☐ TRRP Level IV
☐ EDD / EDP

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental

Sample Receipt Checklist

Client Name: **PBW** Date/Time Received: **13-Jul-11 12:28**

Work Order: **1107385** Received by: **SAY**

Checklist completed by Salvador A. Yanez eSignature 13-Jul-11 Date Reviewed by: Patricia L. Lynch eSignature 14-Jul-11 Date

Matrices: Water
Carrier name: Client

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c, 1.7c, 1.9c	002	
Cooler(s)/Kit(s):	4097, 3993, 3405		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

CONESTOGA-ROVERS
& ASSOCIATES

E-Mail Date: August 5, 2011
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
JULY 2011

PREPARED BY:
CONESTOGA-ROVERS & ASSOCIATES
9033 Meridian Way
West Chester, Ohio 45069
Telephone: 513-942-4750 Fax: 513-942-8585
Contact: Angela Bown
Date: August 5, 2011
www.CRAworld.com

Data Usability Summary

Reviewer:	Angela Bown – Conestoga-Rovers & Associates, Inc.
Contract Laboratory:	ALS Laboratory Group—Houston, Texas
Project/Area of Interest:	UPRR Houston Wood Preserving Works – Houston, Texas
Description of Data Packages Reviewed:	Groundwater sample results in data package 1107685
Sample Collection Date(s):	July 12 & 13, 2011
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.

Groundwater samples plus field duplicates were analyzed for select semivolatile organic compounds (SVOCs) by SW-846 Method 8270C[1].

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.

2.0 Laboratory Qualifications

Analytical services were provided by ALS Laboratory Group (ALS) 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 T104704231-11-4 at the time the analyses were performed.

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

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.

- 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 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

Summaries of the qualified analytical results are reported in Table 2. 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.

Detectability check standards (DCS) were analyzed at the appropriate frequency. None of the DCS results support the method detection limits (MDL) summarized in the lab report. TRRP-13 states the following: "When reporting non-detect results where the MDL cannot be verified or is not supported by the initial DCS, the concentration at which the COC was detected in the DCS should be used in lieu of the MDL to determine if a response is detected and to calculate the sample detection limits (SDLs). That is, if the estimated concentration represented by a

response is less than the concentration in the successful DCS, the result is reported as not detected and the SDL is calculated using the concentration in the DCS in lieu of the MDL concentration."

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 for SVOCs are addressed in the LRCs of the laboratory data packages. All surrogate recoveries were within the acceptance limits.

All internal standard areas and retention limits were acceptable per the LRCs.

4.8 Laboratory Control Samples (LCS)/ Laboratory Control Sample Duplicates (LCSD)

LCS or LCS/LCSD data for all COCs were reported for each batch. LCS spike recoveries and RPDs for all COCs were within the project objectives.

4.9 Matrix Spikes

One project sample was selected for matrix spike/matrix spike duplicate analyses for SVOCs, and the results are reported in the data packages. All recoveries and RPDs were within the laboratory established control limits.

4.10 Field Duplicate

Field duplicates of samples listed below were collected and analyzed.

- WG-1620-FD01-20110713 is a duplicate of WG-1620-MW01A-20110713.
- WG-1620-FD02-20110712 is a duplicate of WG-1620-P10-20110712.

All relative percent differences (RPDs) were < 30% for sample results greater than 5 times the MQL indicating acceptable precision above the estimated regions of detection.

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.

APPENDIX A

TABLES

TABLE 1

SAMPLE AND ANALYSIS SUMMARY
SEMI-ANNUAL GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JULY 2011

Sample I.D.	*Location I.D.*	*Matrix*	*Collection Date (mm/dd/yy)*	*Collection Time (hr:min)*	*Analysis/Parameters* Select SVOCs	*Comment*
WG-1620-MW08-20110712	MW-08	WG	07/12/11	1:40:00 PM	X	
WG-1620-P12-20110712	P-12	WG	07/12/11	2:30:00 PM	X	
WG-1620-MW07-20110712	MW-07	WG	07/12/11	3:20:00 PM	X	
WG-1620-P10-20110712	P-10	WG	07/12/11	4:30:00 PM	X	
WG-1620-FD02-20110712	P-10	WG	07/12/11	4:30:00 PM	X	WG-1620-P10-20110712
WG-1620-MW11A-20110712	MW-11A	WG	07/12/11	5:20:00 PM	X	
WG-1620-MW11B-20110712	MW-11B	WG	07/12/11	6:15:00 PM	X	
WG-1620-MW10A-20110713	MW-10A	WG	07/13/11	7:45:00 AM	X	
WG-1620-MW10B-20110713	MW-10B	WG	07/13/11	8:45:00 AM	X	
WG-1620-MW02-20110713	MW-02	WG	07/13/11	9:50:00 AM	X	
WG-1620-MW01A-20110713	MW-01A	WG	07/13/11	11:10:00 AM	X	
WG-1620-FD01-20110713	MW-01A	WG	07/13/11	11:10:00 AM	X	WG-1620-MW01A-20110713

Notes:

SVOCs Semi-volatile Organic Compounds.

TABLE 2

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JULY 2011

	Sample Location:	*MW-01A*	*MW-01A*	*MW-02*	*MW-07*
	Sample ID:	*WG-1620-MW01A-20110713*	*WG-1620-FD01-20110713*	*WG-1620-MW02-20110713*	*WG-1620-MW07-20110712*
	Sample Date:	*7/13/2011*	*7/13/2011*	*7/13/2011*	*7/12/2011*
			Duplicate		
Parameters	***Units***				
Semi-volatile Organic Compounds					
2-Methylnaphthalene	mg/L	0.0068	0.0021 J	0.0021 J	<0.00050
Acenaphthene	mg/L	0.10	0.092	0.026	<0.00050
Acenaphthylene	mg/L	0.0011 J	<0.00050	<0.00050	<0.00050
Anthracene	mg/L	0.0029 J	0.0027 J	<0.00050	<0.00050
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	0.0030 J	0.0012 J	0.0021 J	<0.00050
Dibenzofuran	mg/L	0.0054	0.0027 J	0.0038 J	<0.00050
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-
Fluoranthene	mg/L	0.0062	0.0059	0.0012 J	<0.00050
Fluorene	mg/L	0.056	0.051	0.015	<0.00050
Naphthalene	mg/L	<0.00050	<0.00050	0.0037 J	<0.00050
Phenanthrene	mg/L	0.0020 J	0.0011 J	<0.00050	<0.00050
Phenol	mg/L	-	-	-	-
Pyrene	mg/L	0.0028 J	0.0027 J	<0.00050	<0.00050

TABLE 2

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JULY 2011

	Sample Location:	*MW-08*	*MW-10A*	*MW-10B*	*MW-11A*
	Sample ID:	*WG-1620-MW08-20110712*	*WG-1620-MW10A-20110713*	*WG-1620-MW10B-20110713*	*WG-1620-MW11A-20110712*
	Sample Date:	*7/12/2011*	*7/13/2011*	*7/13/2011*	*7/12/2011*
Parameters	***Units***				
Semi-volatile Organic Compounds					
2-Methylnaphthalene	mg/L	<0.00050	<0.00050	-	<0.00050
Acenaphthene	mg/L	<0.00050	<0.00050	0.054	<0.00050
Acenaphthylene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Anthracene	mg/L	<0.00050	<0.00050	0.0033 J	<0.00050
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	<0.00050	<0.00050	0.0013 J	<0.00050
Dibenzofuran	mg/L	<0.00050	<0.00050	0.019	<0.00050
Di-n-butylphthalate (DBP)	mg/L	-	-	<0.00050	-
Fluoranthene	mg/L	<0.00050	<0.00050	0.0023 J	<0.00050
Fluorene	mg/L	<0.00050	<0.00050	0.032	<0.00050
Naphthalene	mg/L	<0.00050	<0.00050	0.0018 J	<0.00050
Phenanthrene	mg/L	<0.00050	<0.00050	-	<0.00050
Phenol	mg/L	-	-	<0.00050	-
Pyrene	mg/L	<0.00050	<0.00050	0.0011 J	<0.00050

TABLE 2

ANALYTICAL RESULTS SUMMARY
SEMI-ANNUAL GROUNDWATER MONITORING
UNION PACIFIC RAILROAD (UPRR)
HOUSTON WOOD PRESERVING WORKS
HOUSTON, TEXAS
JULY 2011

	Sample Location:	*MW-11B*	*P-10*	*P-10*	*P-12*
	Sample ID:	*WG-1620-MW11B-20110712*	*WG-1620-P10-20110712*	*WG-1620-FD02-20110712*	*WG-1620-P12-20110712*
	Sample Date:	*7/12/2011*	*7/12/2011*	*7/12/2011*	*7/12/2011*
				Duplicate	
Parameters	***Units***				
Semi-volatile Organic Compounds					
2-Methylnaphthalene	mg/L	-	-	-	-
Acenaphthene	mg/L	0.084	<0.00050	<0.00050	<0.00050
Acenaphthylene	mg/L	0.0012 J	<0.00050	<0.00050	<0.00050
Anthracene	mg/L	0.0054	<0.00050	<0.00050	<0.00050
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	<0.00050	<0.00050	0.0015 J	<0.00050
Dibenzofuran	mg/L	0.038	<0.00050	<0.00050	<0.00050
Di-n-butylphthalate (DBP)	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Fluoranthene	mg/L	0.0046 J	<0.00050	<0.00050	<0.00050
Fluorene	mg/L	0.046	<0.00050	<0.00050	<0.00050
Naphthalene	mg/L	0.060	<0.00050	<0.00050	<0.00050
Phenanthrene	mg/L	-	-	-	-
Phenol	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Pyrene	mg/L	0.0024 J	<0.00050	<0.00050	<0.00050

Notes:

J - Estimated.
- Not analyzed.

19-Jul-2011

Eric Matzner
Pastor, Behling & Wheeler, LLC
2201 Double Creek Drive
Suite 4004
Round Rock, TX 78664

Tel: (512) 671-3434
Fax: (512) 671-3446

Re: HWPW SWMU 1 Work Order: **1107385**

Dear Eric,

ALS Environmental received 12 samples on 13-Jul-2011 12:28 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 29.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Patricia L. Lynch

Electronically approved by: Makenzie L. Henderson

Patricia L. Lynch
Project Manager

Certificate No: T104704231-09A-TX

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Work Order: 1107385

TRRP Laboratory Data Package Cover Page

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

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
c)The laboratory's LCS QC limits.

R7 Test reports for project 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 samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:
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 limits (MQLs) 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 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.

Client:	Pastor, Behling & Wheeler, LLC	**TRRP Laboratory Data Package Cover Page**
Project:	HWPW SWMU 1	
Work Order:	1107385	

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the 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 attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Patricia L. Lynch

Patricia L. Lynch
Project Manager

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 7/19/2011				
Project Name: HWPW SWMU 1			Laboratory Job Number: 1107385				
Reviewer Name: Pat Lynch			Prep Batch Number(s): 53947				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		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 soils/solids samples for volatile analysis extracted with methanol per SW-846 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				
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 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				
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				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

.

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 7/19/2011				
Project Name: HWPW SWMU 1			Laboratory Job Number: 1107385				
Reviewer Name: Pat Lynch			Prep Batch Number(s): 53947				
#[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 blank (CCB)**					
		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 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		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 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 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				

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.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 7/19/2011
Project Name: HWPW SWMU 1	Laboratory Job Number: 1107385
Reviewer Name: Pat Lynch	Prep Batch Number(s): 53947

ER#[5]	Description
	No Exceptions.

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.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

ALS Environmental

Date: 19-Jul-11

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Work Order: **1107385**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1107385-01	WG-1620-MW08-20110712	Water		7/12/2011 13:40	7/13/2011 12:28	☐
1107385-02	WG-1620-P12-20110712	Water		7/12/2011 14:30	7/13/2011 12:28	☐
1107385-03	WG-1620-MW07-20110712	Water		7/12/2011 15:20	7/13/2011 12:28	☐
1107385-04	WG-1620-P10-20110712	Water		7/12/2011 16:30	7/13/2011 12:28	☐
1107385-05	WG-1620-FD02-20110712	Water		7/12/2011 16:30	7/13/2011 12:28	☐
1107385-06	WG-1620-MW11A-20110712	Water		7/12/2011 17:20	7/13/2011 12:28	☐
1107385-07	WG-1620-MW11B-20110712	Water		7/12/2011 18:15	7/13/2011 12:28	☐
1107385-08	WG-1620-MW10A-20110713	Water		7/13/2011 07:45	7/13/2011 12:28	☐
1107385-09	WG-1620-MW10B-20110713	Water		7/13/2011 08:45	7/13/2011 12:28	☐
1107385-10	WG-1620-MW02-20110713	Water		7/13/2011 09:50	7/13/2011 12:28	☐
1107385-11	WG-1620-MW01A-20110713	Water		7/13/2011 11:10	7/13/2011 12:28	☐
1107385-12	WG-1620-FD01-20110713	Water		7/13/2011 11:10	7/13/2011 12:28	☐

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW08-20110712
Collection Date: 7/12/2011 01:40 PM

Work Order: 1107385
Lab ID: 1107385-01
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Anthracene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Fluorene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Naphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Phenanthrene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Pyrene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:13
Surr: 2,4,6-Tribromophenol	*52.1*			*42-124*	*%REC*	1	7/18/2011 20:13
Surr: 2-Fluorobiphenyl	*48.4*			*48-120*	*%REC*	1	7/18/2011 20:13
Surr: 2-Fluorophenol	*42.7*			*20-120*	*%REC*	1	7/18/2011 20:13
Surr: 4-Terphenyl-d14	*70.3*			*51-135*	*%REC*	1	7/18/2011 20:13
Surr: Nitrobenzene-d5	*42.6*			*41-120*	*%REC*	1	7/18/2011 20:13
Surr: Phenol-d6	*44.0*			*20-120*	*%REC*	1	7/18/2011 20:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-P12-20110712
Collection Date: 7/12/2011 02:30 PM

Work Order: 1107385
Lab ID: 1107385-02
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Anthracene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Di-n-butyl phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Fluorene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Naphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Phenol	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Pyrene	U		0.00050	0.0050	mg/L	1	7/18/2011 20:36
Surr: 2,4,6-Tribromophenol	*61.4*			*42-124*	*%REC*	1	7/18/2011 20:36
Surr: 2-Fluorobiphenyl	*48.8*			*48-120*	*%REC*	1	7/18/2011 20:36
Surr: 2-Fluorophenol	*39.7*			*20-120*	*%REC*	1	7/18/2011 20:36
Surr: 4-Terphenyl-d14	*64.6*			*51-135*	*%REC*	1	7/18/2011 20:36
Surr: Nitrobenzene-d5	*45.5*			*41-120*	*%REC*	1	7/18/2011 20:36
Surr: Phenol-d6	*57.1*			*20-120*	*%REC*	1	7/18/2011 20:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW07-20110712
Collection Date: 7/12/2011 03:20 PM

Work Order: 1107385
Lab ID: 1107385-03
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Anthracene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Fluorene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Naphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Phenanthrene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Pyrene	U		0.00050	0.0050	mg/L	1	7/18/2011 21:45
Surr: 2,4,6-Tribromophenol	*60.6*			*42-124*	*%REC*	1	7/18/2011 21:45
Surr: 2-Fluorobiphenyl	*48.9*			*48-120*	*%REC*	1	7/18/2011 21:45
Surr: 2-Fluorophenol	*41.8*			*20-120*	*%REC*	1	7/18/2011 21:45
Surr: 4-Terphenyl-d14	*68.4*			*51-135*	*%REC*	1	7/18/2011 21:45
Surr: Nitrobenzene-d5	*47.0*			*41-120*	*%REC*	1	7/18/2011 21:45
Surr: Phenol-d6	*57.9*			*20-120*	*%REC*	1	7/18/2011 21:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-P10-20110712
Collection Date: 7/12/2011 04:30 PM

Work Order: 1107385
Lab ID: 1107385-04
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Anthracene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Di-n-butyl phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Fluorene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Naphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Phenol	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Pyrene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:08
Surr: 2,4,6-Tribromophenol	*64.8*			*42-124*	*%REC*	1	7/18/2011 22:08
Surr: 2-Fluorobiphenyl	*48.1*			*48-120*	*%REC*	1	7/18/2011 22:08
Surr: 2-Fluorophenol	*42.5*			*20-120*	*%REC*	1	7/18/2011 22:08
Surr: 4-Terphenyl-d14	*66.9*			*51-135*	*%REC*	1	7/18/2011 22:08
Surr: Nitrobenzene-d5	*44.5*			*41-120*	*%REC*	1	7/18/2011 22:08
Surr: Phenol-d6	*53.3*			*20-120*	*%REC*	1	7/18/2011 22:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-FD02-20110712
Collection Date: 7/12/2011 04:30 PM

Work Order: 1107385
Lab ID: 1107385-05
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Anthracene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Bis(2-ethylhexyl)phthalate	**0.0015**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:35
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Di-n-butyl phthalate	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Fluorene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Naphthalene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Phenol	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Pyrene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:35
Surr: 2,4,6-Tribromophenol	*72.3*			*42-124*	*%REC*	1	7/19/2011 14:35
Surr: 2-Fluorobiphenyl	*50.2*			*48-120*	*%REC*	1	7/19/2011 14:35
Surr: 2-Fluorophenol	*40.1*			*20-120*	*%REC*	1	7/19/2011 14:35
Surr: 4-Terphenyl-d14	*69.1*			*51-135*	*%REC*	1	7/19/2011 14:35
Surr: Nitrobenzene-d5	*48.8*			*41-120*	*%REC*	1	7/19/2011 14:35
Surr: Phenol-d6	*42.7*			*20-120*	*%REC*	1	7/19/2011 14:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW11A-20110712
Collection Date: 7/12/2011 05:20 PM

Work Order: 1107385
Lab ID: 1107385-06
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Anthracene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Fluorene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Naphthalene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Phenanthrene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Pyrene	U		0.00050	0.0050	mg/L	1	7/18/2011 22:54
Surr: 2,4,6-Tribromophenol	*65.8*			*42-124*	*%REC*	1	7/18/2011 22:54
Surr: 2-Fluorobiphenyl	*52.5*			*48-120*	*%REC*	1	7/18/2011 22:54
Surr: 2-Fluorophenol	*51.9*			*20-120*	*%REC*	1	7/18/2011 22:54
Surr: 4-Terphenyl-d14	*69.0*			*51-135*	*%REC*	1	7/18/2011 22:54
Surr: Nitrobenzene-d5	*55.4*			*41-120*	*%REC*	1	7/18/2011 22:54
Surr: Phenol-d6	*65.5*			*20-120*	*%REC*	1	7/18/2011 22:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW11B-20110712
Collection Date: 7/12/2011 06:15 PM

Work Order: 1107385
Lab ID: 1107385-07
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
Acenaphthene	**0.084**		**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Acenaphthylene	**0.0012**	J	**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Anthracene	**0.0054**		**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 23:17
Dibenzofuran	**0.038**		**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Di-n-butyl phthalate	U		0.00050	0.0050	mg/L	1	7/18/2011 23:17
Fluoranthene	**0.0046**	J	**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Fluorene	**0.046**		**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Naphthalene	**0.060**		**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Phenol	U		0.00050	0.0050	mg/L	1	7/18/2011 23:17
Pyrene	**0.0024**	J	**0.00050**	**0.0050**	**mg/L**	1	7/18/2011 23:17
Surr: 2,4,6-Tribromophenol	*59.1*			*42-124*	*%REC*	1	7/18/2011 23:17
Surr: 2-Fluorobiphenyl	*51.5*			*48-120*	*%REC*	1	7/18/2011 23:17
Surr: 2-Fluorophenol	*50.8*			*20-120*	*%REC*	1	7/18/2011 23:17
Surr: 4-Terphenyl-d14	*70.9*			*51-135*	*%REC*	1	7/18/2011 23:17
Surr: Nitrobenzene-d5	*54.5*			*41-120*	*%REC*	1	7/18/2011 23:17
Surr: Phenol-d6	*66.1*			*20-120*	*%REC*	1	7/18/2011 23:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW10A-20110713
Collection Date: 7/13/2011 07:45 AM

Work Order: 1107385
Lab ID: 1107385-08
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Acenaphthene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Anthracene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Bis(2-ethylhexyl)phthalate	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Dibenzofuran	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Fluoranthene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Fluorene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Naphthalene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Phenanthrene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Pyrene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:58
Surr: 2,4,6-Tribromophenol	*66.7*			*42-124*	*%REC*	1	7/19/2011 14:58
Surr: 2-Fluorobiphenyl	*50.6*			*48-120*	*%REC*	1	7/19/2011 14:58
Surr: 2-Fluorophenol	*42.1*			*20-120*	*%REC*	1	7/19/2011 14:58
Surr: 4-Terphenyl-d14	*71.7*			*51-135*	*%REC*	1	7/19/2011 14:58
Surr: Nitrobenzene-d5	*45.4*			*41-120*	*%REC*	1	7/19/2011 14:58
Surr: Phenol-d6	*45.9*			*20-120*	*%REC*	1	7/19/2011 14:58

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW10B-20110713
Collection Date: 7/13/2011 08:45 AM

Work Order: 1107385
Lab ID: 1107385-09
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
Acenaphthene	**0.054**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/19/2011 00:04
Anthracene	**0.0033**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Bis(2-ethylhexyl)phthalate	**0.0013**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Dibenzofuran	**0.019**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Di-n-butyl phthalate	U		0.00050	0.0050	mg/L	1	7/19/2011 00:04
Fluoranthene	**0.0023**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Fluorene	**0.032**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Naphthalene	**0.0018**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Phenol	U		0.00050	0.0050	mg/L	1	7/19/2011 00:04
Pyrene	**0.0011**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:04
Surr: 2,4,6-Tribromophenol	*61.8*			*42-124*	*%REC*	1	7/19/2011 00:04
Surr: 2-Fluorobiphenyl	*54.8*			*48-120*	*%REC*	1	7/19/2011 00:04
Surr: 2-Fluorophenol	*55.3*			*20-120*	*%REC*	1	7/19/2011 00:04
Surr: 4-Terphenyl-d14	*73.1*			*51-135*	*%REC*	1	7/19/2011 00:04
Surr: Nitrobenzene-d5	*60.0*			*41-120*	*%REC*	1	7/19/2011 00:04
Surr: Phenol-d6	*73.2*			*20-120*	*%REC*	1	7/19/2011 00:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW02-20110713
Collection Date: 7/13/2011 09:50 AM

Work Order: 1107385
Lab ID: 1107385-10
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	**0.0021**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Acenaphthene	**0.026**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/19/2011 00:27
Anthracene	U		0.00050	0.0050	mg/L	1	7/19/2011 00:27
Bis(2-ethylhexyl)phthalate	**0.0021**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Dibenzofuran	**0.0038**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Fluoranthene	**0.0012**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Fluorene	**0.015**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Naphthalene	**0.0037**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 00:27
Phenanthrene	U		0.00050	0.0050	mg/L	1	7/19/2011 00:27
Pyrene	U		0.00050	0.0050	mg/L	1	7/19/2011 00:27
Surr: 2,4,6-Tribromophenol	*64.9*			*42-124*	*%REC*	1	7/19/2011 00:27
Surr: 2-Fluorobiphenyl	*53.9*			*48-120*	*%REC*	1	7/19/2011 00:27
Surr: 2-Fluorophenol	*54.0*			*20-120*	*%REC*	1	7/19/2011 00:27
Surr: 4-Terphenyl-d14	*71.4*			*51-135*	*%REC*	1	7/19/2011 00:27
Surr: Nitrobenzene-d5	*57.6*			*41-120*	*%REC*	1	7/19/2011 00:27
Surr: Phenol-d6	*71.6*			*20-120*	*%REC*	1	7/19/2011 00:27

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-MW01A-20110713
Collection Date: 7/13/2011 11:10 AM

Work Order: 1107385
Lab ID: 1107385-11
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	**0.0068**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Acenaphthene	**0.10**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Acenaphthylene	**0.0011**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Anthracene	**0.0029**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Bis(2-ethylhexyl)phthalate	**0.0030**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Dibenzofuran	**0.0054**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Fluoranthene	**0.0062**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Fluorene	**0.056**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Naphthalene	U		0.00050	0.0050	mg/L	1	7/19/2011 13:49
Phenanthrene	**0.0020**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Pyrene	**0.0028**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 13:49
Surr: 2,4,6-Tribromophenol	*78.8*			*42-124*	*%REC*	1	7/19/2011 13:49
Surr: 2-Fluorobiphenyl	*66.1*			*48-120*	*%REC*	1	7/19/2011 13:49
Surr: 2-Fluorophenol	*50.8*			*20-120*	*%REC*	1	7/19/2011 13:49
Surr: 4-Terphenyl-d14	*73.0*			*51-135*	*%REC*	1	7/19/2011 13:49
Surr: Nitrobenzene-d5	*61.2*			*41-120*	*%REC*	1	7/19/2011 13:49
Surr: Phenol-d6	*57.2*			*20-120*	*%REC*	1	7/19/2011 13:49

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *19-Jul-11*

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
Sample ID: WG-1620-FD01-20110713
Collection Date: 7/13/2011 11:10 AM

Work Order: 1107385
Lab ID: 1107385-12
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
SEMIVOLATILES - SW8270D		Method: **SW8270**			Prep: SW3510 / 7/15/11		Analyst: **JLJ**
2-Methylnaphthalene	**0.0021**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Acenaphthene	**0.092**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Acenaphthylene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:12
Anthracene	**0.0027**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Bis(2-ethylhexyl)phthalate	**0.0012**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Dibenzofuran	**0.0027**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Fluoranthene	**0.0059**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Fluorene	**0.051**		**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Naphthalene	U		0.00050	0.0050	mg/L	1	7/19/2011 14:12
Phenanthrene	**0.0011**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Pyrene	**0.0027**	J	**0.00050**	**0.0050**	**mg/L**	1	7/19/2011 14:12
Surr: 2,4,6-Tribromophenol	*92.5*			*42-124*	*%REC*	1	7/19/2011 14:12
Surr: 2-Fluorobiphenyl	*74.2*			*48-120*	*%REC*	1	7/19/2011 14:12
Surr: 2-Fluorophenol	*67.2*			*20-120*	*%REC*	1	7/19/2011 14:12
Surr: 4-Terphenyl-d14	*82.1*			*51-135*	*%REC*	1	7/19/2011 14:12
Surr: Nitrobenzene-d5	*63.5*			*41-120*	*%REC*	1	7/19/2011 14:12
Surr: Phenol-d6	*72.8*			*20-120*	*%REC*	1	7/19/2011 14:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 19-Jul-11

METHOD DETECTION / REPORTING LIMITS

WorkOrder: 1107385
InstrumentID: SV-3
Test Code: 8270_W
Test Number: SW8270
Test Name: Semivolatiles - SW8270D **Matrix:** Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	2-Methylnaphthalene	91-57-6	0.0027	0.00050	0.0050
A	Acenaphthene	83-32-9	0.0027	0.00050	0.0050
A	Acenaphthylene	208-96-8	0.0028	0.00050	0.0050
A	Anthracene	120-12-7	0.0029	0.00050	0.0050
A	Bis(2-ethylhexyl)phthalate	117-81-7	0.0028	0.00050	0.0050
A	Dibenzofuran	132-64-9	0.0029	0.00050	0.0050
A	Di-n-butyl phthalate	84-74-2	0.0030	0.00050	0.0050
A	Fluoranthene	206-44-0	0.0028	0.00050	0.0050
A	Fluorene	86-73-7	0.0028	0.00050	0.0050
A	Naphthalene	91-20-3	0.0029	0.00050	0.0050
A	Phenanthrene	85-01-8	0.0029	0.00050	0.0050
A	Phenol	108-95-2	0.0024	0.00050	0.0050
A	Pyrene	129-00-0	0.0028	0.00050	0.0050
S	Surr: 2,4,6-Tribromophenol	118-79-6	0	0.0050	0.0050
S	Surr: 2-Fluorobiphenyl	321-60-8	0	0.0050	0.0050
S	Surr: 2-Fluorophenol	367-12-4	0	0.0050	0.0050
S	Surr: 4-Terphenyl-d14	1718-51-0	0	0.0050	0.0050
S	Surr: Nitrobenzene-d5	4165-60-0	0	0.0050	0.0050
S	Surr: Phenol-d6	13127-88-3	0	0.0050	0.0050

ALS Environmental

Date: 19-Jul-11

METHOD DETECTION / REPORTING LIMITS

WorkOrder: 1107385
InstrumentID: SV-5
Test Code: 8270_W
Test Number: SW8270
Test Name: Semivolatiles - SW8270D **Matrix:** Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	2-Methylnaphthalene	91-57-6	0.0026	0.00050	0.0050
A	Acenaphthene	83-32-9	0.0026	0.00050	0.0050
A	Acenaphthylene	208-96-8	0.0025	0.00050	0.0050
A	Anthracene	120-12-7	0.0027	0.00050	0.0050
A	Bis(2-ethylhexyl)phthalate	117-81-7	0.0026	0.00050	0.0050
A	Dibenzofuran	132-64-9	0.0027	0.00050	0.0050
A	Di-n-butyl phthalate	84-74-2	0.0027	0.00050	0.0050
A	Fluoranthene	206-44-0	0.0027	0.00050	0.0050
A	Fluorene	86-73-7	0.0028	0.00050	0.0050
A	Naphthalene	91-20-3	0.0025	0.00050	0.0050
A	Phenanthrene	85-01-8	0.0027	0.00050	0.0050
A	Phenol	108-95-2	0.0022	0.00050	0.0050
A	Pyrene	129-00-0	0.0028	0.00050	0.0050
S	Surr: 2,4,6-Tribromophenol	118-79-6	0	0.0050	0.0050
S	Surr: 2-Fluorobiphenyl	321-60-8	0	0.0050	0.0050
S	Surr: 2-Fluorophenol	367-12-4	0	0.0050	0.0050
S	Surr: 4-Terphenyl-d14	1718-51-0	0	0.0050	0.0050
S	Surr: Nitrobenzene-d5	4165-60-0	0	0.0050	0.0050
S	Surr: Phenol-d6	13127-88-3	0	0.0050	0.0050

Batch ID: **53947** Instrument ID **SV-3** Method: **SW8270**

MBLK Sample ID: **SBLKW3-110715-53947** Units: **µg/L** Analysis Date: **7/15/2011 02:14 PM**

Client ID: Run ID: **SV-3_110718A** SeqNo: **2463804** Prep Date: **7/15/2011** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	U	5.0								
Acenaphthene	U	5.0								
Acenaphthylene	U	5.0								
Anthracene	U	5.0								
Bis(2-ethylhexyl)phthalate	U	5.0								
Dibenzofuran	U	5.0								
Di-n-butyl phthalate	U	5.0								
Fluoranthene	U	5.0								
Fluorene	U	5.0								
Naphthalene	U	5.0								
Phenanthrene	U	5.0								
Phenol	U	5.0								
Pyrene	U	5.0								
Surr: 2,4,6-Tribromophenol	*83.2*	5.0	*100*	0	*83.2*	*42-124*	0			
Surr: 2-Fluorobiphenyl	*72.75*	5.0	*100*	0	*72.7*	*48-120*	0			
Surr: 2-Fluorophenol	*61.06*	5.0	*100*	0	*61.1*	*20-120*	0			
Surr: 4-Terphenyl-d14	*77.77*	5.0	*100*	0	*77.8*	*51-135*	0			
Surr: Nitrobenzene-d5	*72.15*	5.0	*100*	0	*72.1*	*41-120*	0			
Surr: Phenol-d6	*58.06*	5.0	*100*	0	*58.1*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1107385
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **53947** Instrument ID **SV-3** Method: **SW8270**

LCS Sample ID: **SLCSW3-110715-53947** Units: **µg/L** Analysis Date: **7/15/2011 02:37 PM**

Client ID: Run ID: **SV-3_110718A** SeqNo: **2463805** Prep Date: **7/15/2011** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	42.54	5.0	50	0	85.1	55-120	0			
Acenaphthene	44.09	5.0	50	0	88.2	55-120	0			
Acenaphthylene	42.99	5.0	50	0	86	55-120	0			
Anthracene	44.57	5.0	50	0	89.1	55-120	0			
Bis(2-ethylhexyl)phthalate	44.93	5.0	50	0	89.9	50-125	0			
Dibenzofuran	44.21	5.0	50	0	88.4	55-120	0			
Di-n-butyl phthalate	45.21	5.0	50	0	90.4	55-120	0			
Fluoranthene	46.16	5.0	50	0	92.3	55-120	0			
Fluorene	44.51	5.0	50	0	89	55-120	0			
Naphthalene	42.75	5.0	50	0	85.5	55-120	0			
Phenanthrene	44.58	5.0	50	0	89.2	55-120	0			
Phenol	75.45	5.0	100	0	75.5	50-120	0			
Pyrene	45.13	5.0	50	0	90.3	55-120	0			
Surr: 2,4,6-Tribromophenol	*80.49*	5.0	*100*	0	*80.5*	*42-124*	0			
Surr: 2-Fluorobiphenyl	*79.19*	5.0	*100*	0	*79.2*	*48-120*	0			
Surr: 2-Fluorophenol	*72.33*	5.0	*100*	0	*72.3*	*20-120*	0			
Surr: 4-Terphenyl-d14	*74.84*	5.0	*100*	0	*74.8*	*51-135*	0			
Surr: Nitrobenzene-d5	*73.57*	5.0	*100*	0	*73.6*	*41-120*	0			
Surr: Phenol-d6	*69.02*	5.0	*100*	0	*69*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1107385
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **53947** Instrument ID **SV-3** Method: **SW8270**

MS Sample ID: **1107385-02AMS** Units: **µg/L** Analysis Date: **7/18/2011 08:59 PM**

Client ID: **WG-1620-P12-20110712** Run ID: **SV-3_110718A** SeqNo: **2463829** Prep Date: **7/15/2011** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	38.71	5.0	50	0	77.4	55-120	0			
Acenaphthene	32.58	5.0	50	0	65.2	55-120	0			
Acenaphthylene	31.82	5.0	50	0	63.6	55-120	0			
Anthracene	39.14	5.0	50	0	78.3	55-120	0			
Bis(2-ethylhexyl)phthalate	54.34	5.0	50	0	109	50-125	0			
Dibenzofuran	33.62	5.0	50	0	67.2	55-120	0			
Di-n-butyl phthalate	40.58	5.0	50	0	81.2	55-120	0			
Fluoranthene	36.52	5.0	50	0	73	55-120	0			
Fluorene	35.28	5.0	50	0	70.6	55-120	0			
Naphthalene	31.34	5.0	50	0	62.7	55-120	0			
Phenanthrene	36.2	5.0	50	0	72.4	55-120	0			
Phenol	76.02	5.0	100	0	76	50-120	0			
Pyrene	42	5.0	50	0	84	55-120	0			
Surr: 2,4,6-Tribromophenol	*61.38*	5.0	*100*	0	*61.4*	*42-124*	0			
Surr: 2-Fluorobiphenyl	*52.17*	5.0	*100*	0	*52.2*	*48-120*	0			
Surr: 2-Fluorophenol	*59.75*	5.0	*100*	0	*59.7*	*20-120*	0			
Surr: 4-Terphenyl-d14	*71.96*	5.0	*100*	0	*72*	*51-135*	0			
Surr: Nitrobenzene-d5	*51.96*	5.0	*100*	0	*52*	*41-120*	0			
Surr: Phenol-d6	*63.12*	5.0	*100*	0	*63.1*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pastor, Behling & Wheeler, LLC
Work Order: 1107385
Project: HWPW SWMU 1

QC BATCH REPORT

Batch ID: **53947** Instrument ID **SV-3** Method: **SW8270**

MSD Sample ID: **1107385-02AMSD** Units: **µg/L** Analysis Date: **7/18/2011 09:22 PM**

Client ID: **WG-1620-P12-20110712** Run ID: **SV-3_110718A** SeqNo: **2463830** Prep Date: **7/15/2011** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Methylnaphthalene	43.37	5.0	50	0	86.7	55-120	38.71	11.4	20	
Acenaphthene	33.58	5.0	50	0	67.2	55-120	32.58	3.04	20	
Acenaphthylene	33.19	5.0	50	0	66.4	55-120	31.82	4.21	20	
Anthracene	38.37	5.0	50	0	76.7	55-120	39.14	1.99	20	
Bis(2-ethylhexyl)phthalate	56.3	5.0	50	0	113	50-125	54.34	3.54	20	
Dibenzofuran	34.4	5.0	50	0	68.8	55-120	33.62	2.29	20	
Di-n-butyl phthalate	40.61	5.0	50	0	81.2	55-120	40.58	0.0611	20	
Fluoranthene	36.59	5.0	50	0	73.2	55-120	36.52	0.195	20	
Fluorene	34.93	5.0	50	0	69.9	55-120	35.28	0.998	20	
Naphthalene	31.14	5.0	50	0	62.3	55-120	31.34	0.671	20	
Phenanthrene	36.2	5.0	50	0	72.4	55-120	36.2	0.00125	20	
Phenol	77.54	5.0	100	0	77.5	50-120	76.02	1.97	20	
Pyrene	42.78	5.0	50	0	85.6	55-120	42	1.85	20	
Surr: 2,4,6-Tribromophenol	*62.36*	5.0	*100*	0	*62.4*	*42-124*	61.38	*1.59*	*20*	
Surr: 2-Fluorobiphenyl	*52.73*	5.0	*100*	0	*52.7*	*48-120*	52.17	*1.07*	*20*	
Surr: 2-Fluorophenol	*60.39*	5.0	*100*	0	*60.4*	*20-120*	59.75	*1.07*	*20*	
Surr: 4-Terphenyl-d14	*72.33*	5.0	*100*	0	*72.3*	*51-135*	71.96	*0.513*	*20*	
Surr: Nitrobenzene-d5	*52.4*	5.0	*100*	0	*52.4*	*41-120*	51.96	*0.836*	*20*	
Surr: Phenol-d6	*65.12*	5.0	*100*	0	*65.1*	*20-120*	63.12	*3.12*	*20*	

The following samples were analyzed in this batch:

1107385-01A	1107385-02A	1107385-03A
1107385-04A	1107385-05A	1107385-06A
1107385-07A	1107385-08A	1107385-09A
1107385-10A	1107385-11A	1107385-12A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 19-Jul-11

Client: Pastor, Behling & Wheeler, LLC
Project: HWPW SWMU 1
WorkOrder: **1107385**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 1 of 2

COC ID: 26847

1107385

PBW: Pastor, Behling & Wheeler, LLC

Project: UPRR Houston Wood SWMU 1

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	UPRR Houston Wood SWMU 1	A	LL SVOC (8270) Select (ATZ SPECIFIC LIST)
Work Order		Project Number	1129.05	B	LL SVOC (8270) SELECT (BTZ SPECIFIC LIST)
Company Name	Pastor, Behling & Wheeler, LLC	Bill To Company	Union Pacific Railroad	C	
Send Report To	Eric Matzner	Invoice Attn		D	
Address	2201 Double Creek Drive Suite 4004	Address	1400 Douglas Street Stop 0780	E F	
City/State/Zip	Round Rock, TX 78664	City/State/Zip	Omaha, NE 68179-0780	G	
Phone	(512) 671-3434	Phone		H	
Fax	(512) 671-3446	Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WG-1620-MW08-20110712	7-12-11	1340	W	—	2	X										
2	WG-1620-P12-20110712	7-12-11	1430	W	—	2		X									
3	WG-1620-P12MS-20110712	7-12-11	1430	W	—	2		X									
4	WG-1620-P12MSD-20110712	7-12-11	1430	W	—	2		X									
5	WG-1620-MW07-20110712	7-12-11	1520	W	—	2	X										
6	WG-1620-P10-20110712	7-12-11	1630	W	—	2		X									
7	WG-1620-FD02-20110712	7-12-11	1630	W	—	2		X									
8	WG-1620-MW11A-20110712	7-12-11	1720	W	—	2	X										
9	WG-1620-MW11B-20110712	7-12-11	1815	W	—	2		X									
10	WG-1620-MW10A-20110713	7-13-11	0745	W	—		X										

Sampler(s) Please Print & Sign: JOHN BRAXTON [signature]

Shipment Method: HAND DELIVERED

Required Turnaround Time: (Check Box) ☒ Std 10 WK Days ☐ 5 WK Days ☐ Other ____ ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
[signature]	7-13-11	12:28	
Relinquished by:	Date:	Time:	Received by (Laboratory): [signature]
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: 10 Day TAT

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)

☐ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other / EDD

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 2 of 2

COC ID: 26846

ALS Environmental
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager:		ALS Work Order #:	

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	JPRR Houston West SWMU 1	A	LL SVOC (8270) Select (CATZ SPECIFIC LIST)
Work Order		Project Number	1179-03	B	LL SVOC (8270) SELECT (BTZ SPECIFIC LIST)
Company Name	Pastor, Behling & Wheeler, LLC	Bill To Company	Union Pacific Railroad	C	
Send Report To	Eric Meitzner	Invoice Attn		D	
Address	2201 Double Creek Drive Suite 2004	Address	1400 Douglas Street Stop 0750	E	
				F	
City/State/Zip	Round Rock, TX 78664	City/State/Zip	Omaha, NE 681790750	G	
Phone	(512) 671-3434	Phone		H	
Fax	(512) 671-3446	Fax		I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WG-1620-MW10B-20110713	7-13-11	0845	W	-	2		X									
2	WG-1620-MW02-20110713	7-13-11	0950	W	-	2	X										
3	WG-1620-MW01A-20110713	7-13-11	1110	W	-	2	X										
4	WG-1620-FD01-20110713	7-13-11	1110	W	-	2	X										
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign	Shipment Method	Required Turnaround Time: (Check Box)	Results Due Date:
JOHN BRAYTON John Brayton	HAND DELIVERED	Std 10 WK Days ☐ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 1 Day	

Relinquished by:	Date:	Time:	Received by:	Notes: 10 Day TAT
John Brayton	7-13-11			
Relinquished by:	Date:	Time: 12:28	Received by (Laboratory):	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)
		☐ Level III Std QC ☐ Level III Std QC/Raw Data ☐ Level IV SW846/CLP ☐ Other / EDD ☐ TRRP Checklist ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental

Sample Receipt Checklist

Client Name: **PBW** Date/Time Received: **13-Jul-11 12:28**

Work Order: **1107385** Received by: **SAY**

Checklist completed by Salvador A. Yanez (eSignature) 13-Jul-11 (Date) Reviewed by: Patricia L. Lynch (eSignature) 14-Jul-11 (Date)

Matrices: Water
Carrier name: Client

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c, 1.7c, 1.9c	002	
Cooler(s)/Kit(s):	4097, 3993, 3405		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

APPENDIX D
WASTE MANIFEST

WO#1631

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
TXD000820268	1	866-780-3118	008615004 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: 281-350-7487

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

6. Transporter 1 Company Name: BAYOU CITY ENV. SERVICES
U.S. EPA ID Number: TXR000032045

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
US ECOLOGY OF TEXAS
2.5 MILES S. ON PETRONILLA ROAD
ROBSTOWN, TX 77287
Facility's Phone: 800-242-3200
U.S. EPA ID Number: TXD069452340

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. HAZARDOUS WASTE LIQUIDS, N.O.S. (PURGE WATER), 9, NA3082, PGIII	002	DM	800	P	D014 R001	1011H	F034
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
PROFILE NUMBER 09-0073928-0
USA JOB # 2469-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 KEEDER
Signature: Geoffrey Keeder
Month: 10 Day: 6 Year: 11

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. DeLaMora
Signature:
Month: 10 Day: 6 Year: 11

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.
H141			

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: Received
Signature
Month: 10 Day: 11 Year: 11

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

TRANSPORTER'S COPY

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

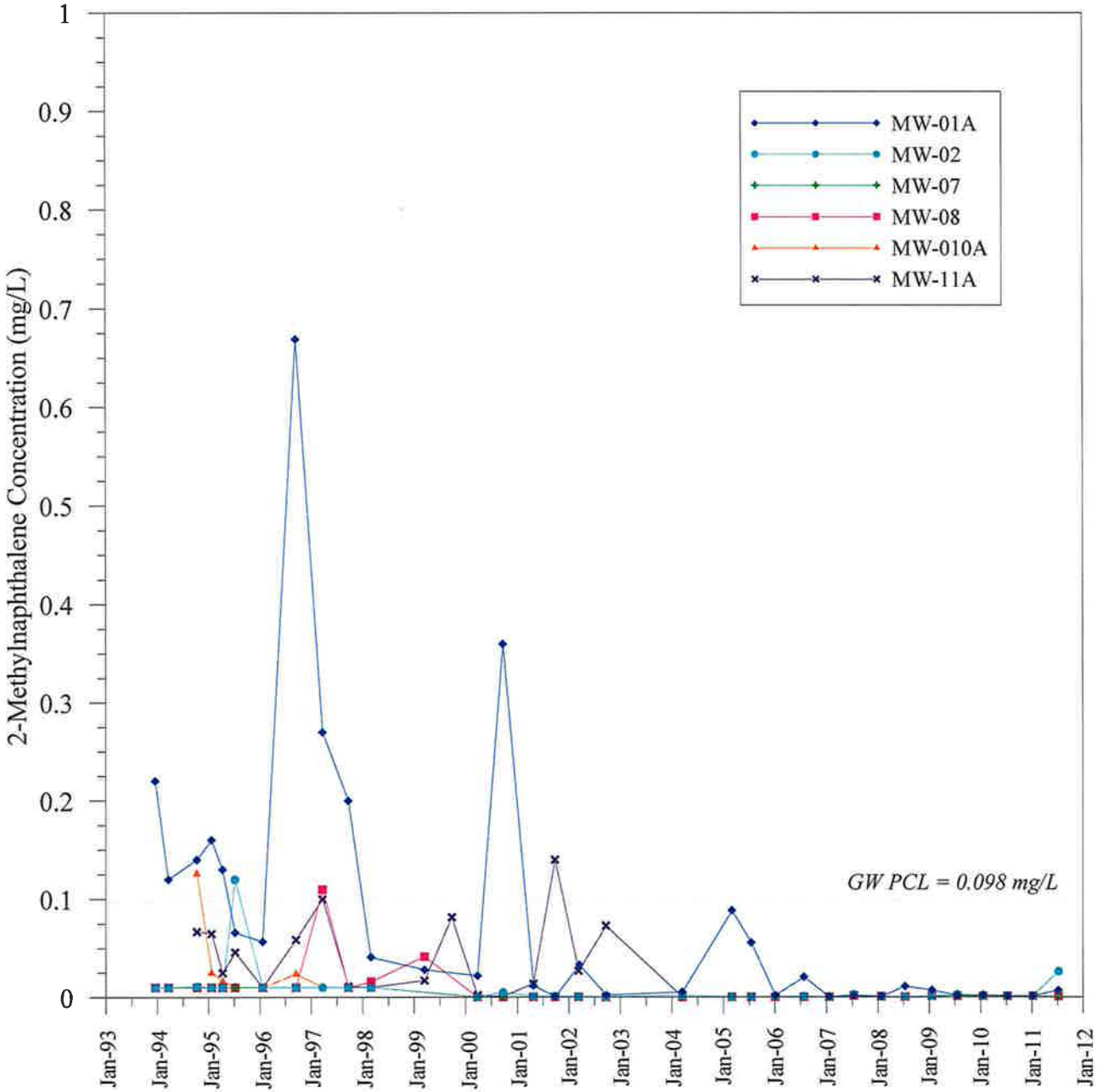


Figure E-2
Dibenzofuran Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

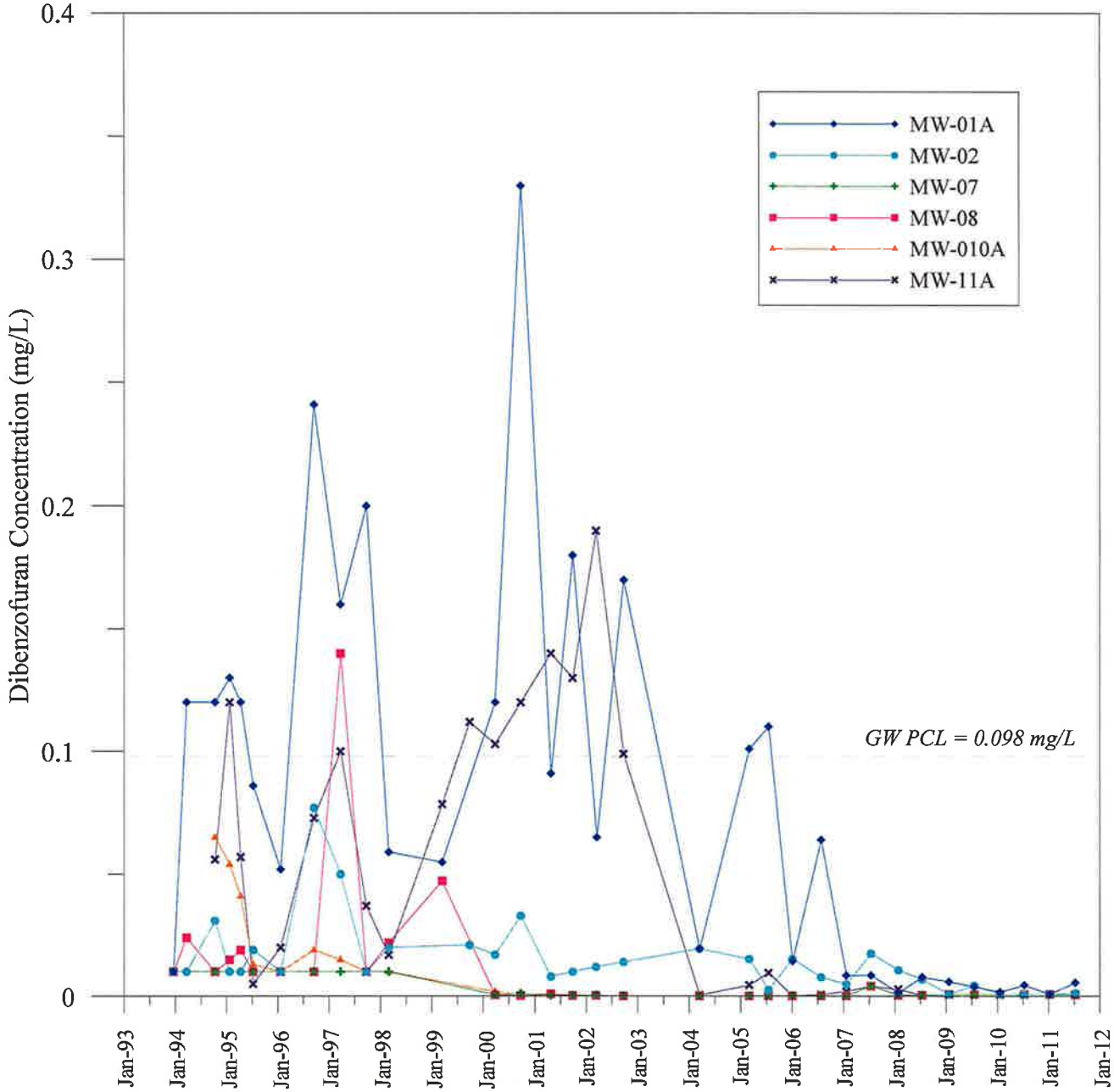


Figure E-3
Naphthalene Concentrations vs Time - A-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

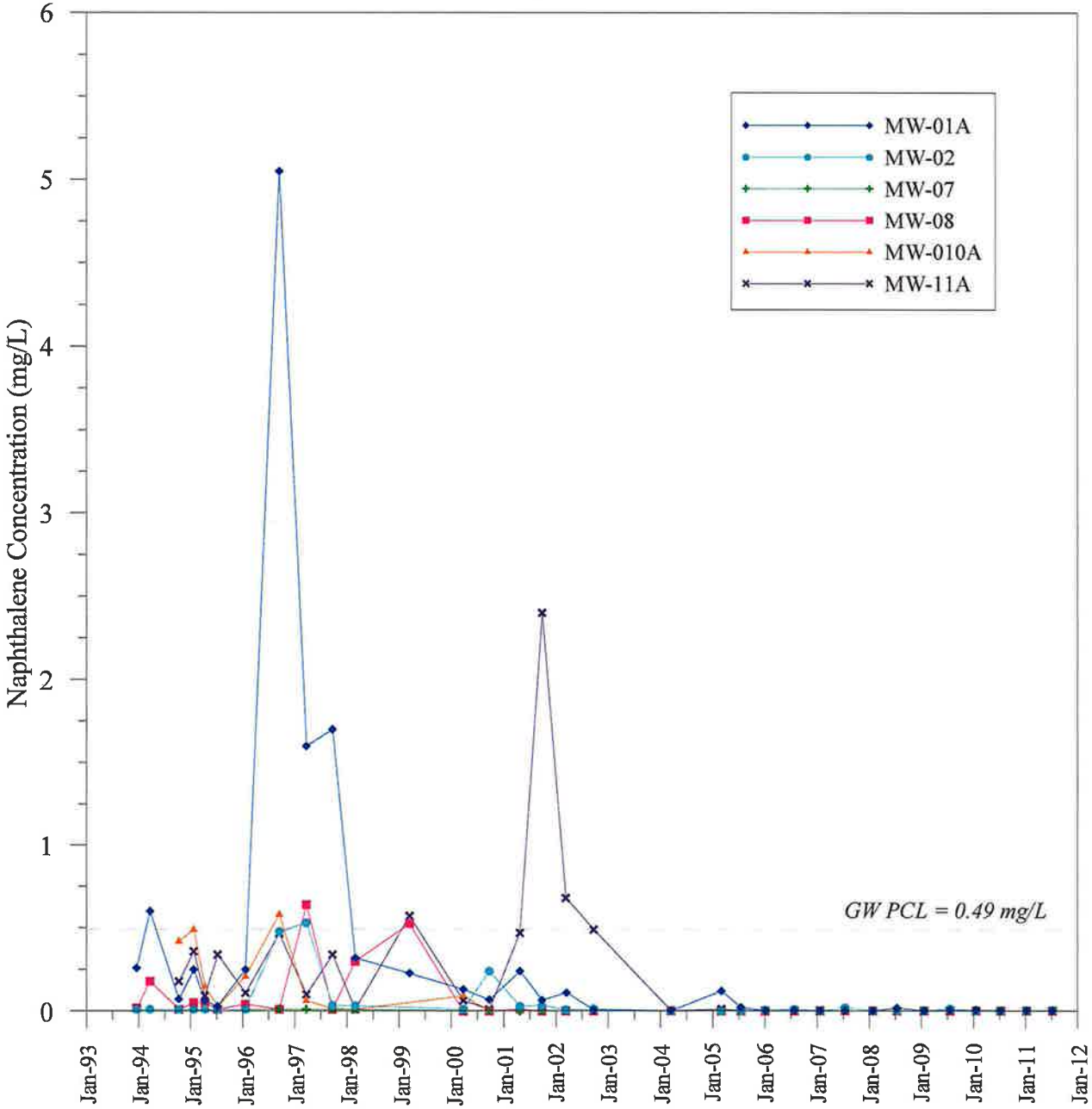


Figure E-4
Dibenzofuran Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1

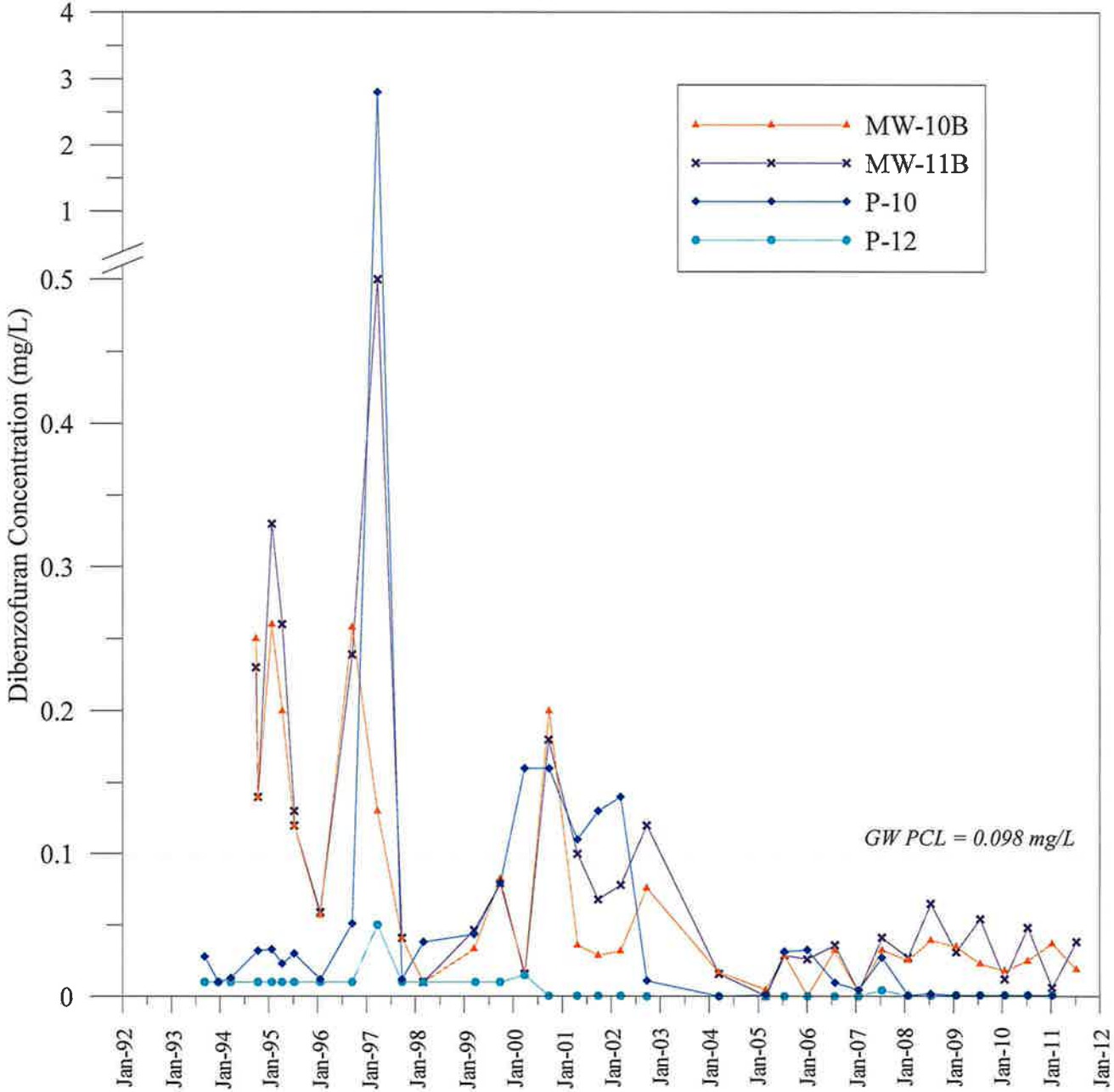
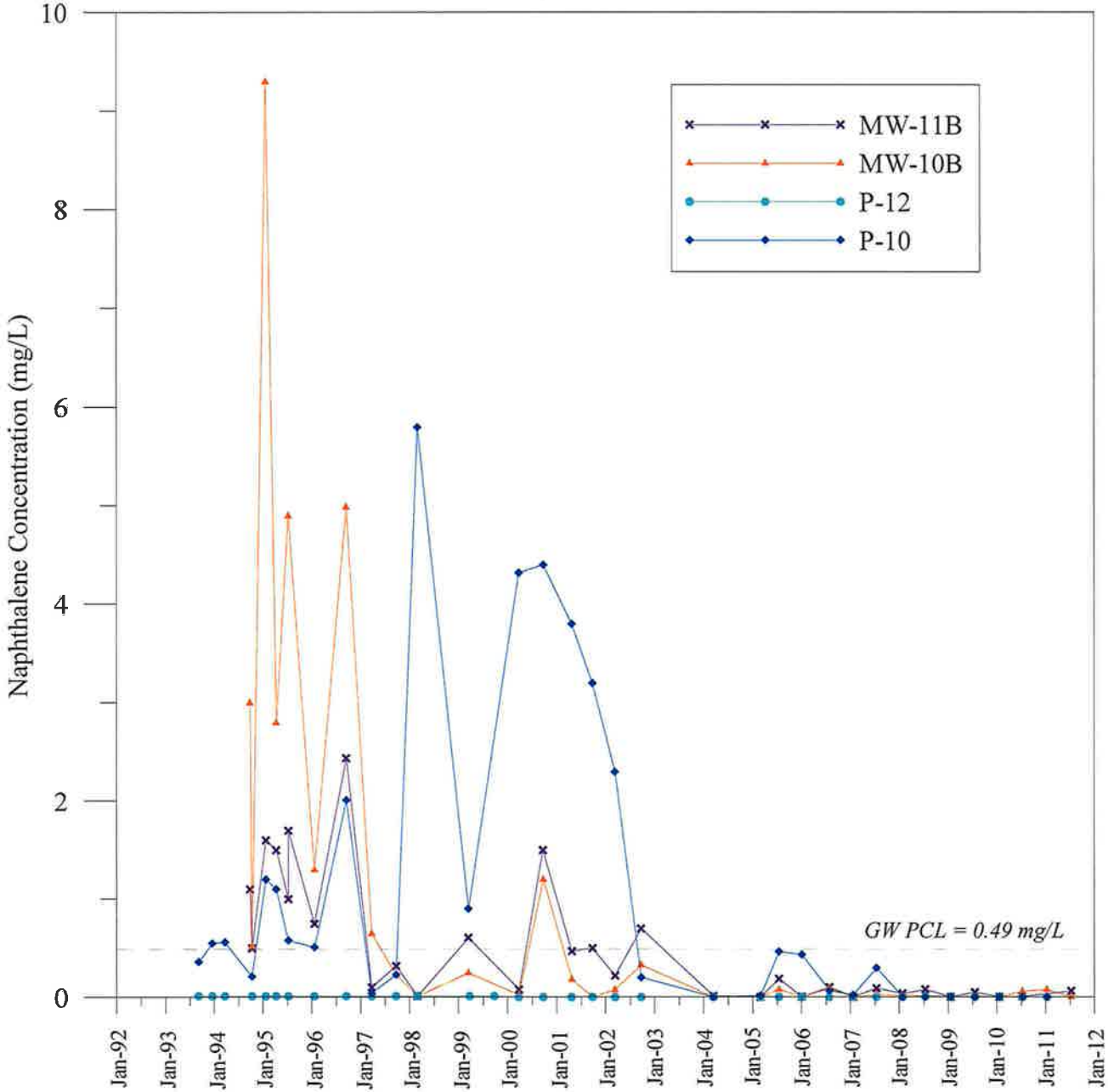
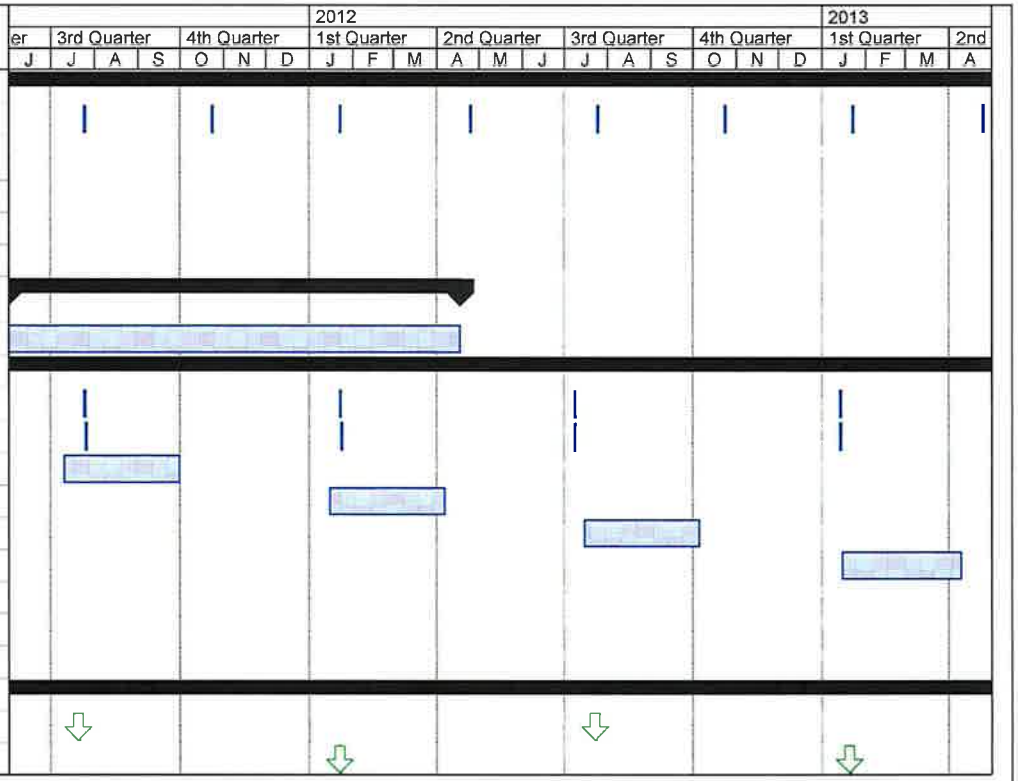


Figure E-5
Naphthalene Concentrations vs Time - B-TZ Unit
UPRR HWPW Facility - RCRA SWMU No. 1



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]
34	**Addendum to the Affected Property Assessment Report (APAR) [Permit Section IX.A; CP Section VIII.D]**
35	Respond to TCEQ Comments on the APAR Addendum
36	Addition Delineation Field Investigation (Groundwater/Soil)
37	Prepare and Submit Final APAR Addendum
38	**Corrective Measures Implementation (CMI)/Response Action Plan (RAP) [CP Section VIII.F]**
39	Prepare and Submit Response Action Plan (RAP)
40	**Ground-Water Monitoring Program [Permit Section VI.A.; CP Section VI.]**
41	Water Level Measurements (Semiannually) [CP Section VI.C.4.a]1
61	Monitoring Well Inspections (Semiannually) [CP Section VI.C.4.a]1
79	Ground Water Sampling and Data Evaluation (2nd Semiannual) [CP Setion VI.C.2]
80	Ground Water Sampling and Data Evaluation (1st Semiannual) [CP Setion VI.C.2]
81	Ground Water Sampling and Data Evaluation (2nd Semiannual) [CP Setion VI.C.2]
82	Ground Water Sampling and Data Evaluation (1st Semiannual) [CP Setion VI.C.2]
83	Ground Water Sampling and Data Evaluation (2nd Semiannual) [CP Setion VI.C.2]
84	Ground Water Sampling and Data Evaluation (1st Semiannual) [CP Setion VI.C.2]
85	Ground Water Sampling and Data Evaluation (2nd Semiannual) [CP Setion VI.C.2]
86	**Response and Reporting [Permit Section II.B.7; CP Section VII.)**
87	First Semi-Annual GW Monitoring Report - July 21 [CP Section VII.C.2]
103	Second Semi-Annual GW Monitoring Report - January 21 [CP Section VII.C.2]



Compliance Schedule
UPRR Houston Wood Preserving Works Site
Houston, Texas

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

APPENDIX G
LABORATORY DATA QA/QC REPORT CHECKLIST

FORMER HOUSTON WOOD PRESERVING WORKS
LABORATORY DATA QA/QC REPORT CHECKLIST
ANALYTICAL REPORT 1107385
JULY 2011

Facility Name: Former Houston Wood Preserving Works SWMU 1	**Permit/ISW Reg No.: 50343**	**For TCEQ Use Only**
Laboratory Name: ALS Environmental	**EPA I.D. No.:**	**Project Mgr:**
Reviewer Name: Jennifer Bush	**TCEQ Project Manager/Data Reviewer:**	
Date: December 15, 2011	**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?	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? If not were data flagged with explanation in Case Narrative?	Yes☒ No☐ NA☐ Yes☐ No☐ NA☒	☐	Yes☐ No☐ NA☐

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
	NA	