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T/F/HW 31547	RP
WWC COMM #10878/24 PROJ MGR M ACH	_
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WST IHW/ REPORTS 1st ID: 31547 Vol: 001 Date: 1/1/2005 BBC: 40056701

January 24, 2005

Dr. Ata-ur-Rhaman Permits Section Industrial and Hazardous Waste Division Texas Commission on Environmental Quality 12100 Park 35 Circle MC 130 Austin, Texas 78753

Received

JAN 2 4 2005 Remediation Division Corrective Action Section

Subject: Transmittal of Annual Report, Permit No. HW-50343-000, January 1 through December 31, 2004, EPA ID No. TD000820266, Houston Wood Preserving Works

Dear Dr. Rahman:

Pursuant to the requirements of Provisions III.B, 1.IV, C.5.g, and V.F. of Post-Closure Care Permit No. HW-50343-000, enclosed are two copies of the referenced report.

If you have any questions regarding the enclosed report, please call me at (281) 350-7197.

Sincerely,

Union Pacific Railroad Company

Seopon Keeson

Geoffrey B. Reeder, P.G. Manager, Environmental Site Remediation

GBR/mnt Enclosure



cc: Ray Risner, TCEQ-Austin Marsha Hill, TCEQ Region 12 - Houston Christopher Young, Environmental Resources Management

> Geoffrey B. Reeder, M.S. Manager, Environmental Site Remediation

UNION PACIFIC RAILROAD 24125 Aldine Westfield Road, Spring, Texas 77373 ph. (281) 350-7197 fx. (281) 350-7362



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## Annual Report, Permit No. HW-50343-000, January 1 through December 31, 2004

EPA ID No. TD000820266 Houston Wood Preserving Works

Union Pacific Railroad Company

January 24, 2005

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Annual Report, Permit No. HW-05343-000, January 1 through December 31, 2004 EPA ID No. TD000820266 Houston Wood Preserving Works

January 24, 2005

Project No. 0014419

Paul A. Stefan, P.G Partner-in-Charge

WI. Christopher M. Young, P.C.



Christopher M. Young, P.G. Project Manager

Mike Robbins Project Scientist

Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084-5140 T: 281-600-1000 F: 281-600-1001

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1.0 INTRODUCTION

On June 20, 1994, the Texas Natural Resources Conservation Commission (TNRCC; known as the Texas Commission on Environmental Quality (TCEQ) as of September 1, 2002) issued RCRA Permit Number HW-50343-000 (the Permit) and TNRCC Compliance Plan Number CP-50343 to Southern Pacific Transportation Company (SPTCo). The Permit authorizes post-closure care for one former surface impoundment (TCEQ Permit Unit No. II.B.1) located at the former Houston Wood Preserving Works facility at 4910 Liberty Road, Houston, Texas (Figure 1-1). Union Pacific Railroad became responsible for the facility in 1997. This Annual Report for 2004 was prepared by Environmental Resources Management (ERM) on behalf of Union Pacific Railroad (UPRR) in accordance with the requirements of Provisions III.B.1, IV.C.5.g, and V.F. of the Permit.

## 1.1 PERMIT REQUIREMENTS

Provision III.B.1 of the Permit requires that the Annual Report include the following:

- 1. Information and records required by Title 30 Texas Administrative Code (TAC) Section 335.154, including:
  - U.S. EPA identification number, name, and address of the facility;
  - Calendar year covered by the report;
  - TCEQ (formerly TNRCC and Texas Water Commission) hazardous waste code and quantity of each hazardous waste received by the facility during the year;
  - Method of storage, processing, or disposal of each hazardous waste;
  - Most recent closure cost estimate under the regulations contained in 40 Code of Federal Regulations (CFR) §264.142 and 30 TAC §335.178 and, for disposal facilities, the most recent post-closure care estimate under 40 CFR §264.144;
  - For generators who treat, store, or dispose of hazardous waste on site, a description of efforts undertaken to reduce the volume and toxicity of waste generated;
  - For generators who treat, store, or dispose of hazardous waste on site, a description of changes in volume and toxicity of waste actually achieved in comparison with previous years; and
  - Certification signed by owner or operator of the facility or authorized representative.
- 2. Summary of ground water compliance monitoring activities;
- 3. Summary of inspections made and any remedial and/or maintenance activities conducted;

## 4. Summary of annual cost estimate adjustments for facility closure and postclosure care; and

- 5. Certification of waste minimization in accordance with Permit Provision V.N., as follows:
  - Permittee has a program in place to reduce the volume and toxicity of all hazardous wastes generated by the facility operation to the degree determined to be economically practicable; and
  - The proposed method of treatment, storage, or disposal that is the most practical method currently available to the permittee, which minimizes the present and future threat to human health and the environment.

As provided in Provision II.B, the Permit authorizes and requires the permittee to perform post-closure care for a closed landfill consisting of one former surface impoundment, Notice of Registration (NOR) Facility No. 01. This impoundment has a total surface area of 0.5923 acre and a total capacity of 5,065 cubic yards. The waste was removed from the impoundment in 1984. Because this facility is clean-closed, hazardous and toxic waste is not received or disposed at the facility. Wastes are being generated as Investigation-Derived Wastes (IDW) associated with the periodic monitoring of Point of Compliance (POC) and Corrective Action Observation (CAO) wells, interim remedial activities, and implementation of investigation work plans approved under the Permit and Compliance Plan. A recovery system has not been installed for this facility; therefore, items 1 through 5, listed above are addressed as they relate to ground water monitoring and inspections of the impoundment.

## 1.2 GEOLOGIC ZONE DESIGNATION

For simplicity and organizational reasons, the nomenclature to designate geological strata has been modified from the designations in the Permit. The native cohesive and transmissive zones underlying the site have been redesignated alphabetically from shallowest to deepest. The shallowest or uppermost transmissive zone is referred to as the A-Transmissive Zone or A-TZ. The lithologic units that underlie the site are the fill material, the A-Cohesive Zone (A-CZ), the A-Transmissive Zone (A-TZ), the B-Cohesive Zone (B-CZ), the B-Transmissive Zone (B-TZ), the C-Cohesive Zone (C-CZ), and the D-Cohesive Zone (D-CZ).

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2.0	REPORT ITEMS	
	This section includes the Permit and listed a	he information and records required by Provision III.B.1 of s numbers 1 through 5 in Section 1.1 of this report.
2.1	INFORMATION AND	RECORDS REQUIRED BY 30 TAC §335.154
	Although 30 TAC 335. on February 5, 1999; 24 3730), the requested in previously submitted a identification, period c information, post-closu certification.	154 was repealed in 1999 (proposed in the Texas Register Fex. Reg. 682; and adopted on May 14, 1999; 24 Tex. Reg. formation is provided in this report for consistency with annual reports. The following sub-sections discuss facility overed, hazardous waste codes, waste storage are care cost estimate revisions, waste minimization, and
2.1.1	Facility Identification	
	This facility is identifie	ed by the following information:
	EPA identification nur Facility name: Facility address:	nber: TXD000820266 Union Pacific Railroad Houston Tie Plant Union Pacific Railroad 4910 Liberty Road Houston, Texas 77020
2.1.2	Calendar Year Coverea	l by This Report
	The activity period cov Permit and encompass	vered by this report is designated in Provision III.B.1 of the es January 1 through December 31, 2004.
2.1.3	Hazardous Waste Cod	es and Quantities Received
	Based on a review of the facility during 2004 were generated at the f	he NOR for the facility and waste generation activities for 4, the following hazardous waste codes and quantities facility in 2004:
	TCEQ Waste Code	Description Annual Quantity Generated
	0917406H	Plastic and used PPE generated as a 100 lbs. result of monitor well and/or soil sampling.
	0914101H	Ground water generated from 100 lbs. purging of various monitor wells for investigative purposes
2.1.4	Method of Storage, Pro	ocessing, or Disposal of Hazardous Wastes
	The hazardous waste g was identified in Section	generated at the facility during the 2004 reporting period on 2.1.3. These wastes were stored temporarily in the

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	Container Storage Area (NOR Unit No. 004) pending off-site disposal. The Container Storage Area is a less than 90-day storage facility for hazardous waste and stores other non-hazardous wastes. The Annual Waste Summary for 2004 is presented in Appendix A.
2.1.5	Post-Closure Care Cost Estimate
	The regulated unit was clean-closed in 1984. A revised post-closure care cost estimate for 2004 prepared in accordance with 40 CFR §264.144 is addressed in Section 2.4 of this Annual Report. The total estimated cost for post-closure care for 2005 is \$30,000.00.
2.1.6	Reduction of Volume and Toxicity of Waste Generated
	Waste minimization typically applies to operating facilities. As stated above, the only wastes generated at this facility are a result of the specific investigation or post-closure care activities directed by the TCEQ under the Permit and Compliance Plan. These IDW are related to the scope of the RCRA Facility Investigation (RFI) and Extent of Contamination (EOC) activities, as approved by the TCEQ under the Permit and Compliance Plan.
	No hazardous wastes were treated or disposed on site during 2004. The only hazardous waste stored on site was a limited quantity of plastic and used personal protective equipment generated during site investigation and monitoring and ground water generated from purging various monitor wells for investigative purposes. The remaining waste was non-hazardous. Investigative techniques such as low-flow ground water sampling and direct-push technologies are utilized when possible during installation and sampling of soil borings, monitor wells and piezometers in order to reduce the volume of soil cuttings and purge water generated for off-site disposal.
2.1.7	Description of the Change in Volume and Toxicity Achieved
	This requirement is not applicable to the facility because the waste generated is related to the implementation of the RFI and EOC Work Plan.
2.1.8	Certification
	A certification signed by the owner or operator of the facility or his authorized representative, as required, is included as Appendix B.
2.2	SUMMARY OF GROUND WATER COMPLIANCE MONITORING ACTIVITIES
	Existing CAO and POC wells were monitored and sampled on a semiannual basis in March and September 2004 to evaluate the extent of affected ground water in the A-TZ and B-TZ. A map showing the location of CAO and POC wells is presented as Figure 2-1. The schedule for ground water monitoring was
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changed from quarterly to semiannual beginning in July 1995, as provided by Provision VI.C.3 of the Compliance Plan. Ground water monitoring results for the March 2004 monitoring event were presented in the first semiannual report, dated July 21, 2004. Ten wells completed in the A-TZ and two wells and three piezometers completed in the B-TZ were sampled during each event in 2004. Ground water monitoring results for the September 2004 monitoring event are included in the *Semiannual Monitoring Report: Second Semiannual Event 2004* submitted under separate cover.

The CAO and POC wells and piezometers are summarized below:

- A-TZ POC wells: MW-01A, MW-02, MW-07, MW-10A, and MW-11A;
- A-TZ CAO wells: MW-04, MW-05, MW-07, MW-08, and MW-09;
- B-TZ POC wells: MW-10B, MW-11B, and P-10; and
- B-TZ CAO wells: P-11 and P-12.

In addition, MW-03, which represents the A-TZ adjacent to the impoundment, was also sampled.

For the purposes of this report, the ground water analytical data for each semiannual sampling event are listed in Tables 2-1 through 2-4. The results are tabulated separately for the A-TZ and B-TZ. For each sampling event, detected concentrations of analytes in excess of the Ground Water Protection Standard are indicated by boxes.

Table 2-5 lists the total depth, casing reference elevation, the measured depth to water, and the calculated water level elevation relative to Mean Sea Level for each monitor well and piezometer. For both water-bearing zones, the monitor wells and piezometers provide a general indication that the potentiometric surfaces have relatively low gradients. Data gathered as part of the RFI indicates that the horizontal hydraulic gradient is typically 0.0064 ft/ft in the A-TZ and 0.0122 ft/ft in the B-TZ.

# SUMMARY OF INSPECTIONS AND REMEDIAL/MAINTENANCE ACTIVITIES

In a letter dated January 10, 1995, the TCEQ acknowledged fulfillment of the requirement of Compliance Plan Provision XI.B by approving the Operation and Maintenance (O&M) Plan, dated August 19, 1994, and the addendum to the O&M Plan, dated December 8, 1994. Under this O&M Plan, inspections of the former surface impoundment and monitor wells are conducted on a monthly basis. O&M Plan Amendment 2, dated May 20, 1995 and Amendment 3 dated June 23, 1995 were submitted to the TCEQ on May 21, 1995 and August 8, 1995, respectively. In a letter dated October 13, 1995, the TCEQ-approved the second and third amendments to the O&M Plan. O&M Plan Amendment 3 establishes a weekly inspection schedule for the former surface impoundment and a quarterly inspection schedule for the monitor wells.

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Inspection of the integrity of the well casings was conducted during March, June, September, and December 2004. No integrity issues were identified concerning monitor wells in 2004.

Inspections related to the former surface impoundment and container storage areas for IDW were performed weekly. The former surface impoundment was mowed the week of June 21, 2004 and September 6, 2004. No additional issues were identified regarding the former surface impoundment.

## SUMMARY OF ANNUAL COST ESTIMATE FOR POST-CLOSURE CARE

An adjusted annual cost estimate for post-closure care in 2004 is presented in Appendix C. The post-closure care cost estimate includes ground water monitoring, inspection, and operation and maintenance costs averaged on an annual basis. Ground water monitoring includes semiannual sampling and analysis for existing monitor wells and piezometers. Inspection and maintenance activities include monthly inspection for monitor well integrity, weekly inspections of the closed surface impoundment and the container storage areas, and minor repairs and upgrades. Cost for replacement of existing monitor wells is not included.

The annual cost estimate for post-closure care has been adjusted from 2004 dollars in accordance with 40 CFR §264.144 using the Implicit Price Deflator obtained from the U.S. Department of Commerce. The Implicit Price Deflator results in an inflation factor of 1.0152. The total estimated post-closure care cost for 2005 is \$30,000.00.

## CERTIFICATION OF WASTE MINIMIZATION

The volume and toxicity of IDW are directly controlled by the activities required by the Permit and Compliance Plan. The scope and schedule of activities proposed in the RFI and EOC Work Plans, as approved by the TCEQ, were designed to reduce the volume and toxicity of the IDW generated by the facility investigations in accordance with the requirements of the Permit and Compliance Plan. Waste minimization has occurred and will continue through the use of low-flow ground water sampling and direct push investigation techniques, where practical, as outlined in the Work Plans. Relative to the method of treatment, storage, or disposal utilized at the facility, waste is temporarily stored and disposed of using methods designed to reduce the present and future potential threat to human health and the environment.

## Tables

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January 24, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten Place-, Suite 300 Houston, Texas 77084-5140 (281) 600-1000

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#### TABLE 2-1

#### Summary of Analytical Results for the A-Transmissive Zone (A-TZ) Semiannual Monitoring Report: Second Semiannual Event 2004

Houston Wood Preserving Works Houston, Texas

A mail da	PQL	Monitor Well ID:	MW-01A	MW-02	MW-02D (*)	MW-03	MW-04	MW-05	MW-07	MW-08	MW-09	MW-10A	MW-11A	MW-11AD (b)	
Analyte	(GWPS)	Sample Date:	9/14/04	9/15/04	9/15/04	9/15/04	9/14/04	9/14/04	9/13/04	9/13/04	9/14/04	9/10/04	9/13/04	3/14/04	
Volatile Organic Constituents															
Benzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloroethane	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methylene chloride	0.010		ND	ND	ND	0.00136 J, <i>U</i>	ND	ND	ND	ND	0.00137 J, <i>U</i>	ND	ND	ND	
Ethylbenzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Xylene (total)	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Semivolatile Organic Constitue	nts														
Acenaphthene	0.010	Г	0.231	0.0604	0.0658	0.00662	0.00722	0.00156	ND	ND	ND	0.106	0.0987	0.0881	$\frown$
Acenaphthylene	0.010	-	0.00196	0.000768	0.000838	ND	0.000166 J	ND	ND	ND	ND	0.0076	0.000797	0.000657	
Anthracene	0.010	ſ	0.0116	0.00218	0.0024	0.000792	0.00129	0.000563	0.000955	0.000307 J	0.000483	0.00237	0.00315	0.00354	$\sim$
Benzo(a)anthracene	0.010	-	ND	ND	0.000245	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzo(a)pyrene	0.010		ND	ND	ND	ND, UJ	ND, UJ	ND, UJ	ND	ND	0.000068 J	ND	ND	ND, UJ	
bis(2-Chloroethoxy)methane	0.010		ND	ND	ND	ND, UJ	ND, UJ	ND, <i>UJ</i>	ND	ND	ND	ND	ND	ND, UJ	
2-Chloronaphthalene	0.010		ND	0.000147 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chrysene	0.010		ND	ND	0.000172 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibenzofuran	0.010	Γ	0.114	0.0302	0.0346	0.00391	0.0011	ND	ND	ND	ND	0.0391	0.00919	0.00872	
Di-n-butyl phthalate	0.010	-	ND	0.000519 U	0.000299 J, U	0.00076 U	0.000637 U	ND	0.000238 J, U	0.000449 J, U	0.000364 J, U	ND	0.000279 J, U	0.000386 J, <i>U</i>	
2,4-Dimethylphenol	0.010		ND	0.00134 J	0.00244 J	ND, <i>UJ</i>	ND	ND	ND	ND	ND	ND, <i>UJ</i>	ND	ND	
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2,4-Dinitrotoluene	0.010		ND	ND	ND	ND, UJ	ND, <i>UJ</i>	ND, <i>UJ</i>	ND	ND	ND	ND	ND	ND, UJ	
2,6-Dinitrotoluene	0.010		ND	ND	ND	ND, <i>UJ</i>	ND, UJ	ND, UJ	ND	ND	ND	NĎ	ND	ND, UJ	
1,2-Diphenylhydrazine	0.010		ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, UJ	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	
bis(2-Ethylhexyl)phthalate	0.010	_	0.000672	ND	0.000675	ND	0.000846	0.000608	ND	0.000689	ND	ND	ND	0.000714	
Fluoranthene	0.010		0.0154	0.00202 J	0.00283 J	ND, UJ	0.000355 J	0.000135J	0.000352 J	0.000287 J	ND	0.0085 J	0.0099	0.0121	
Fluorene	0.010	[	0.136	0.0328	0.0387	0.0113	0.00339	0.00016 J	ND	ND	ND	0.00297	0.0455	0.0474	
2-Methylnaphthalene	0.010		0.00834	0.01029	0.00993	0.224	ND	ND	ND	ND	ND	ND	ND	0.000877	
Naphthalene	0.010		0.000884 J	0.0555 J	0.108 J	0.0425 J	ND, UJ	0.00131 J	ND, UJ	ND, UJ	ND, UJ	0.000395 J, J	0.000236 J, J	0.00255 J	
Nitrobenzene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
p-Nitrophenol	0.050		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Pentachlorophenol	0.050		ND	ND	ND	ND, <i>UJ</i>	ND, UJ	ND, UJ	ND	ND	0.000376	ND	ND	ND, UJ	
Phenanthrene	0.010		0.00152 <i>JH</i>	0.00554 JH	0.00573 JH	0.0106 JH	0.000278 J, <i>JH</i>	ND	ND	ND	ND	0.00133 <i>JH</i>	0.000594 JH	0.000895 JH	
Phenol	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Pyrene	0.010		0.00676	0.00122	0.00136	0.000392 J	0.000398 J	0.000241 J	0.000563	0.000412 J	ND	0.00474	0.00483	0.00552	

NOTES:

All values reported in mg/L.

ND = Not detected at the Method Detection Limit (MDL), which is less than or equal to the Practical Quantitation Limit (PQL) in all instances and can be found in the laboratory reports in Appendix C. PQL = Practical Quantitation Limit, as defined on Table I of the Compliance Plan and determined by the analytical methods of EPA SW-846 Test Methods for Determining Solid Wastes.

The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.

indicates value reported above the GWPS.

(a) MW-02D is a duplicate of MW-02.

(b) MW-11AD is a duplicate of MW-11A

J = Estimated value between the reporting limit and MDL.

U = Not Detected based on third party qualification

J = Estimated data based on third party qualification

L = Low bias based on third party qualification

H = High bias based on third party qualification

#### TABLE 2-2

#### Summary of Analytical Results for the B-Transmissive Zone (B-TZ) First Semiannual Event 2004

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#### Houston Wood Preserving Works Houston, Texas

Analyte	PQL (GWPS)	Monitor Well ID: Sample Date:	MW-10B 3/16/04	MW-10BD <sup>(#)</sup> 3/16/04	MW-11B 3/16/04	P-10 3/16/04	P-10D <sup>(b)</sup> 3/16/04	P-11 3/17/04	P-12 3/17/04
Volatile Organic Constituents									
Benzene	0.005		0.00231 J	0.00228 J	ND	ND	ND	ND	ND
Chlorobenzene	0.005		ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005		ND	ND	ND	ND	ND	ND	ND
Methylene chloride	0.010		ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.005		ND	ND	ND	ND	ND	ND	ND
Toluene	0.005		ND	ND	ND	ND	ND	ND	ND
Xylene (total)	0.005		ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Constituen	ts								
Acenaphthene	0.010	Г	0.04421	0.04517	0.0486	ND. <i>UJ</i> Г	0.08375 J	0.1301	ND
Acenaphthylene	0.010	L	0.000833	0.000855	0.001163	ND. UJ	0.000586 J	ND	ND
Anthracene	0.010		0.002478	0.00243	0.000854	ND. UJ	0.004746 J	0.005611	ND
Benzo(a)anthracene	0.010		ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND	ND	ND	ND	ND	ND, UJ	ND
bis(2-Chloroethoxy)methane	0.010		NÐ	ND	ND	ND	ND	ND, UJ	ND
2-Chloronaphthalene	0.010		ND	ND	ND	ND	ND	ND	ND
Chrysene	0.010		ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	0.010	Γ	0.0171	0.01702	0.01581	ND, <i>UJ</i>	0.03219 J	0.003985	ND
Di-n-butyl phthalate	0.010	•	0.000303 J, U	0.000251 J, U	0.000348 J, U	0.000379 J, U	0.000418 J, U	0.000923 U	0.000922 U
2,4-Dimethylphenol	0.010		ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.010		ND	ND	ND	ND	ND	ND, <i>UJ</i>	ND
2,6-Dinitrotoluene	0.010		ND	ND	ND	ND	ND	ND, <i>UJ</i>	ND
1,2-Diphenylhydrazine	0.010		ND	ND	ND	ND	ND	ND, <i>UJ</i>	ND
bis(2-Ethylhexyl)phthalate	0.010		0.000982	0.000988	ND	ND	ND	0.000904 U	0.001748 U
Fluoranthene	0.010	_	0.001567	0.0001681	0.001971	ND, UJ	0.003192 J	0.008623	ND
Fluorene	0.010	[	0.02079	0.0213	0.0112	ND, <i>UJ</i>	0.04259 J	0.05025	ND
2-Methylnaphthalene	0.010	_	0.00013 J	ND_	0.001569	ND, <i>UJ</i>	0.0218 J	0.001097	ND
Naphthalene	0.010		0.001853	0.001653	0.01168	ND, <i>UJ</i>	0.4144 J	0.007031	ND
Nitrobenzene	0.010		ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.050		ND	ND	ND	ND	ND	<u>ND, R</u>	0.000337 JL
Phenanthrene	0.010		0.008858	0.00956	0.000198 J	ND, <i>UJ</i> [	0.02155 J	0.01956	ND
Phenol	0.010		ND	ND	ND	ND	ND	ND	ND
Pyrene	0.010		0.000718	0.000694	0.000991	ND, UJ	0.001372 J	0.00445	0.007348

#### NOTES:

All values reported in mg/L.

ND = Not detected at the Method Detection Limit (MDL), which can be found in the laboratory reports in Appendix C and is less than or equal to the GWPS in all instances. PQL = Practical Quantitation Limit, as defined on Table 1 of the Compliance Plan and determined by the analytical methods of EPA SW-846 Test Methods for Determining Solid Wastes. The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.

indicates value reported above the GWPS.

(a) MW-10BD is a duplicate of MW-10B.

(b) P-10D is a duplicate of P-10,

J = Estimated value between the reporting limit and MDL.

U = Not Detected based on third party qualification

J = Estimated data based on third party qualification

L = Low bias based on third party qualification

H = High bias based on third party qualification

TABL	.E 2-3
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#### Summary of Analytical Results for the A-Transmissive Zone (A-TZ) Second Semiannual Event 2004

#### Houston Wood Preserving Works Houston, Texas

	PQL	Monitor Well ID:	MW-01A	MW-02	MW-02D (*)	MW-03	MW-04	MW-05	MW-07	MW-08	MW-09	MW-10A	MW-11A	MW-11AD (b)
Analyte	(GWPS)	Sample Date:	9/14/04	9/15/04	9/15/04	9/15/04	9/14/04	9/14/04	9/13/04	9/13/04	9/14/04	9/15/04	9/13/04	9/14/04
Volatile Organic Constituents														
Benzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	0.010		ND	ND	ND	0.00136 J, <i>U</i>	ND	ND	ND	ND	0.00137 J, <i>U</i>	ND	ND	ND
Ethylbenzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Constituents														
Acenaphthene	0.010	ſ	0.231	0.0604	0.0658	0.00662	0.00722	0.00156	ND	ND	ND	0.106	0.0987	0.0881
Acenaphthylene	0.010	-	0.00196	0.000768	0.000838	- ND	0.000166 J	ND	ND	ND	ND	0.0076	0.000797	0.000657
Anthracene	0.010	Г	0.0116	0.00218	0.0024	0.000792	0.00129	0.000563	0.000955	0.000307 J	0.000483	0.00237	0.00315	0.00354
Benzo(a)anthracene	0.010	-	ND	ND	0.000245	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND	ND	ND	ND, <i>UJ</i>	ND, UJ	ND, <i>UJ</i>	ND	ND	0.000068 J	ND	ND	ND, UJ
bis(2-Chloroethoxy)methane	0.010		ND	ND	ND	ND, <i>UJ</i>	ND, UJ	ND, <i>UJ</i>	ND	ND	ND	ND	ND	ND, <i>UJ</i>
2-Chloronaphthalene	0.010		ND	0.000147 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	0.010	_	ND	ND	0.000172 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	0.010		0.114	0.0302	0.0346	0.00391	0.0011	ND	ND	ND	ND	0.0391	0.00919	0.00872
Di-n-butyl phthalate	0.010		ND	0.000519 U	0.000299 J, U	0.00076 U	0.000637 U	ND	0.000238 J, <i>U</i>	0.000449 J, <i>U</i>	0.000364 J, U	ND	0.000279 J, <i>U</i>	0.000386 J, <i>U</i>
2,4-Dimethylphenol	0.010		ND	0.00134 <i>J</i>	0.00244 J	ND, <i>UJ</i>	ND	ND	ND	ND	ND	ND, <i>UJ</i>	ND	ND
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.010		ND	ND	ND	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND	ND	ND	ND	ND	ND, <i>UJ</i>
2,6-Dinitrotoluene	0.010		ND	ND	ND	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, UJ	ND	ND	ND	ND	ND	ND, <i>UJ</i>
1,2-Diphenylhydrazine	0.010		ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>U</i> J	<i>I</i> ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, <i>UJ</i>	ND, UJ
bis(2-Ethylhexyl)phthalate	0.010	-	0.000672	ND	0.000675	ND	0.000846	0.000608	ND	0.000689	ND	ND	ND	0.000714
Fluoranthene	0.010	Ļ	0.0154	0.00202 J	0.00283 J	<u>ND, <i>UJ</i>_</u>	0.000355 J	0.000135J	0.000352 J	0.000287 J	ND	0.0085 J	0.0099	0.0121
Fluorene	0.010	Ĺ	0.136	0.0328	0.0387	0.0113	0.00339	0.00016 J	ND	ND	ND	0.00297	0.0455	0.0474
2-Methylnaphthalene	0.010		0.00834	0.01029	0.00993	0.224	ND	ND	ND	ND	ND	ND	ND	0.000877
Naphthalene	0.010		0.000884 J	0.0555 J	0.108 J	0.0425 J	ND, UJ	0.00131 J	ND, UJ	ND, UJ	ND, UJ	0.000395 J, <i>J</i>	0.000236 J, J	0.00255 J
Nitrobenzene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Nitrophenol	0.050		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.050		ND	ND	ND	<u>ND, <i>UJ</i>_</u>	ND, UJ	ND, UJ	ND	ND	0.000376	ND	ND	ND, UJ
Phenanthrene	0.010		0.00152 <i>JH</i>	0.00554 JH	0.00573 JH	0.0106 JH	0.000278 J, <i>JH</i>	ND	ND	ND	ND	0.00133 <i>JH</i>	0.000594 JH	0.000895 JH
Phenol	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	0.010		0.00676	0.00122	0.00136	0.000392 J	0.000398 J	0.000241 J	0.000563	0.000412 J	ND	0.00474	0.00483	0.00552

NOTES:

All values reported in mg/L.

ND = Not detected at the Method Detection Limit (MDL), which is less than or equal to the Practical Quantitation Limit (PQL) in all instances and can be found in the laboratory reports in Appendix C. PQL = Practical Quantitation Limit, as defined on Table 1 of the Compliance Plan and determined by the analytical methods of EPA SW-846 Test Methods for Determining Solid Wastes.

The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.

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indicates value reported above the GWPS.

(a) MW-02D is a duplicate of MW-02.

(b) MW-11AD is a duplicate of MW-11A

J = Estimated value between the reporting limit and MDL.

U = Not Detected based on third party qualification

J = Estimated data based on third party qualification

L = Low bias based on third party qualification

H = High bias based on third party qualification

#### TABLE 2-4

#### Summary of Analytical Results for the B-Transmissive Zone (B-TZ) Second Semiannual Event 2004

#### Houston Wood Preserving Works Houston, Texas

	PQL	Monitor Well ID:	MW-10B	MW-11B	P-10	P-11	P-12
Analyte	(GWPS)	Sample Date:	9/14/04	9/14/04	9/13/04	9/15/04	9/14/04
Volatile Organic Constituents							
Benzene	0.005		0.0025 J	ND	ND	ND	ND
Chlorobenzene	0.005		ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005		ND	ND	ND	ND	ND
Methylene chloride	0.010		ND	ND	ND	ND	ND
Ethylbenzene	0.005		ND	ND	ND	ND	ND
Toluene	0.005		ND	ND	ND	ND	ND
Xylene (total)	0.005		ND	ND	ND	ND	ND

Semivolatile Organic Constituents						
Acenaphthene	0.010	0.0864	0.151	0.0244	0.151	ND
Acenaphthylene	0.010	0.00161	0.00193	0.000179 J	ND	ND
Anthracene	0.010	0.00549	0.00764	0.000798	0.00666	ND
Benzo(a)anthracene	0.010	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010	ND, UJ	NĎ	ND	ND	ND
bis(2-Chloroethoxy)methane	0.010	ND, UJ	ND	ND	ND	ND
2-Chloronaphthalene	0.010	ND	ND	ND	ND	ND
Chrysene	0.010	ND	ND	ND	ND	ND
Dibenzofuran	0.010	0.0404	0.0804	0.00643	0.00261	ND
Di-n-butyl phthalate	0.010	0.000419 J, U	0.000449 J, U	0.000456 J, U	0.000532 U	0.000279 J, U
2,4-Dimethylphenol	0.010	ND	ND	ND	ND, <i>UJ</i>	ND
4,6-Dinitro-o-cresol	0.050	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.010	ND, UJ	ND	ND	ND	ND
2,6-Dinitrololuene	0.010	ND, UJ	ND	ND	ND	ND
1,2-Diphenylhydrazine	0.010	ND, UJ	ND, UJ	ND, UJ	ND, <i>UJ</i>	ND, UJ
bis(2-Ethylhexyl)phthalate	0.010	0.0081	0.000649	ND	ND	0.000861
Fluoranthene	0.010	0.00294	0.00536	0.000474 J	0.00635 J	ND
Fluorene	0.010	0.044	0.0671	0.00768	0.0643	ND
2-Methyinaphthalene	0.010	0.0127	0.0748	0.00264	0.00152	ND
Naphthalene	0.010	0.107 J	0.184 J	0.119 J	0.364 J	ND, <i>UJ</i>
Nitrobenzene	0.010	ND	ND	ND	ND	ND
p-Nitrophenol	0.050	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010	ND	ND	ND	ND	ND
Pentachlorophenol	0.050	ND, UJ	ND	ND	ND	ND
Phenanthrene	0.010	0.0256 JH	0.0422 JH	0.00234 JH	0.0352 JH	ND
Phenol	0.010	ND	ND	ND	ND	ND
Pyrene	0.010	0.00137	0.00268	0.000221 J	0.00375	0.00457

#### NOTES:

All values reported in mg/L.

ND = Not detected at the Method Detection Limit (MDL), which is less than or equal to the Practical Quantitation Limit (PQL) in all instances and can be found in the laboratory reports in Appendix C. PQL = Practical Quantitation Limit, as defined on Table 1 of the Compliance Plan and determined by the analytical methods of EPA SW-846 Test Methods for Determining Solid Wastes.

The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.

indicates value reported above the GWPS.

(a) MW-02D is a duplicate of MW-02.

(b) MW-11AD is a duplicate of MW-11A

J = Estimated value between the reporting limit and MDL.

U = Not Detected based on third party qualification

J = Estimated data based on third party qualification

L = Low bias based on third party qualification

H = High bias based on third party qualification

## TABLE 2-5

## Water Level and Total Depth of Well Measurements Semiannual Events 2004

Houston Wood Preserving Works Houston, Texas

	Top-of-Casing Elevation <sup>(a)</sup>	Depth t (ft T	o Water OC)	Ground Wat (ft N	ter Elevation /ISL)	Total Measured Well Depth <sup>(b)</sup>	Total Depth as* Completed
Well ID	(ft MSL)	3/15/04	9/13/04	3/15/04	9/13/04	(ft TOC)	(ft TOC)
A-TZ Moni	toring Locations						
MW-01A	47.92	3.49	8.26	44.43	39.66	19.61	20.2
MW-02	47.97	2.87	8.71	45.10	39.26	NM	20.3
MW-03	48.34	3.27	9.03	45.07	39.31	19.52	20.9
MW-04	49.85	4.80	9.80	45.05	40.05	21.60	23.4
MW-05	49.24	4.22	8.58	45.02	40.66	27.30	28.3
MW-07	48.86	3.89	9.04	44.97	39.82	24.69	N/A
MW-08	49.33	4.31	9.31	45.02	40.02	24.98	26.8
MW-09	49.26	4.18	8.39	45.08	40.87	25.14	26.8
MW-10A	49.86	4.69	10.30	45.17	39.56	NM	25.9
MW-11A	50.05	4.99	10.28	45.06	39.77	23.75	24.4
B-TZ Moni	toring Locations						
MW-10B	49.94	5.78	10.41	44.16	39.53	46.42	48.8
MW-11B	50.18	5.16	10.53	45.02	39.65	46.66	46.8
P-10	47.69	2.85	7.99	44.84	39.70	42.80	N/A
P-11	48.98	4.11	9.14	44.87	39.84	42.69	51.8
P-12	48.78	3.55	7.93	45.23	40.85	42.70	51.7

## NOTES:

NAPL was not detected in any well.

ft MSL = feet above Mean Sea Level

ft TOC = feet below the Top Of (the well) Casing

\* Reporting during well installation and completion

N/A = Information not available

(a) TOC elevations resurveyed by Baseline Surveyors on April 21 and 28, 2004.

(b) Total Depth measurements reported from Second Semiannual Event only.

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## Figures

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January 24, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten Place Suite 300 Houston, Texas 77084-5140 (281) 600-1000





## Annual Waste Summary for Data Year 2004 Appendix A

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January 24, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten place, Suite 300 Houston, Texas 77084-5140 (281) 600-1000

	REGISTHATION AND REPORTING SECTION MC 129 REGISTRATION, REVIEW AND REPORTING DIVISION TEXAS COMMISSION ON ENVIRONMENTAL QUALITY P.O. BOX 13087 AUSTIN, TEXAS 76711-3087 TELEPHONE: (512) 239-6413	ANNUAL WASTE SUMMARY	<b>G 1</b> Report for: 2004 6
	Geoffrey B Reeder Union Pacific Railroad Company 4910 Liberty Road Houston, TX 77026-5264 281-350-7197	NO REPORT REQUIRED       IOUIT (See 30 TAC 335.9(a)(3); also see instructions)       IOUIT (See 30 TAC 335.9(a)(3); also see instructions)         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Image: Summary Status       Image: Summary Status       Image: Summary Status         Imag	<u>,X,D,O,O,O,8,2,Q,26,6</u> <b>SUPPLEMENTAL SUMMARY</b>
	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	S EPA HAZARDOUS     WASTE NO.     Plastic and used Personal Protective Equipment generated as     45	
	QUANTITY HANDLED     UNITS     SYSTEM TYPE CODE     FEE     FACILITY NUMBER       59     1     0     0     P     69     72     3     0     2     7     1	RECEIVER'S EPA ID #         COMMENTS           T X D 0 7 4 1 96 33 3 8         90	
	$\begin{bmatrix} \\ 59 \\ 59 \\ 59 \\ 59 \\ 59 \\ 59 \\ 59 \\ 5$	78     90       78     90       78     90       78     90	119 119 119
•	TEXAS WASTE CODE     EPA HAZARDOUS WASTE NO.     EPA HAZARDOUS WASTE NO.     EPA HAZARDOUS WASTE NO.       14781011     33     37     41	AS EFA HAZARDOUS WASTE NO. Petroleum-affected purge water generated as part of ground w 45	TOTAL QUANTITY GENERATED UNITS
	TEXAS WASTE CODE     EPA HAZARDOUS WASTE NO.     EPA HAZARDOUS WASTE NO.     EPA HAZARDOUS WASTE NO.       14781011	IS EPA HAZARDOUS         WASTE DESCRIPTION         WASTE DESCRIPTION         Petroleum-affected purge water generated as part of ground w         45         RECEIVER'S EPA ID #       COMMENTS         T       X       D       0       7       4       19       6       3       3       8       90         78       90       1	TOTAL QUANTITY GENERATED UNITS 49 49 119 119
	TEXAS WASTE CODE       EPA HAZARDOUS WASTE NO.       EPA HAZARDOUS WASTE NO.       EPA HAZARDOUS WASTE NO.       EPA HAZARDOUS WASTE NO.         14781011       1111       1111       1111       1111       1111         25       33       37       41       41         QUANTITY HANDLED       UNITS       SYSTEM SYSTEM       FRE       FACILITY NUMBER         141       140       70       P       H       11       30       27       1         59       68       69       72       73       73       1	IS EPA HAZARDOUS WASTE NO.         WASTE DESCRIPTION         Petroleum-affected purge water generated as part of ground w         45       RECEIVER'S EPA ID #       COMMENTS         T       X       D       O       74       19       6       3       3       8         78       90       90       90       90       90       90       90       90         78       90	TOTAL QUANTITY GENERATED         UNITS           49         40         7         0         9           119         119         119         119         119           119         119         119         119         119
	TEXAS WASTE CODE       EPA HAZARDOUS WASTE NO.       EPA HAZARDOUS WASTE NO.       EPA HAZARDOUS WASTE NO.       EPA HAZARDOUS WASTE NO.         14781011	IS EPA HAZARDOUS WASTE NO. Petroleum-affected purge water generated as part of ground w 45 RECEIVER'S EPA ID # COMMENTS TX D 0 7 4 19 6 3 3 8 90 COMMENTS 78 90 COMMENTS 90 CO	TOTAL QUANTITY GENERATED UNITS 49 119 119 119 119 119 119
	TEXAS WASTE CODE       EPA HAZARDOUS       EVA HAZARDOUS       EVA HAZARDOUS       EPA HAZARDOUS       EVA HAZARDO	IS EFA HAZARDOUS       WASTE DESCRIPTION         Image: Constraint of the stand all attached documents and that based on my inquiry of ted information is true, accurate, and complete.       COMMERT         Image: Constraint of the stand all attached documents and that based on my inquiry of ted information is true, accurate, and complete.       169         Image: Constraint of the stand all attached documents and that based on my inquiry of ted information is true, accurate, and complete.       169         Image: Constraint of the stand all attached documents and that based on my inquiry of ted information is true, accurate, and complete.       169         Image: Constraint of the stand all attached documents and that based on my inquiry of ted information is true, accurate, and complete.       169         Image: Constraint of the stand all attached documents and that based on my inquiry of ted information is true, accurate, and complete.       169         Image: Constraint of the stand all attached documents and that based on my inquiry of ted information is true, accurate, and complete.       169         Image: Constraint of the stand all attached documents and that based on my inquiry of ted information is true, accurate, and complete.       169         Image: Constraint of the stand all attached documents and that based on the stand all attached ted standards accurate, and complete.       169         Image: Constraint of the standard accurate accur	TOTAL QUANTITY GENERATED       UNITS         49       9         119       119         119       119         119       119         119       119         119       119         119       119         119       119

### **Annual Waste Summary Form Instructions**

For more detailed instructions, please read or download RG-151, Industrial and Hazardous Waste Annual Waste Summary Instruction Booklet found on our website www.tceq.com under Forms and Publications. For the TCEQ mailing address and phone number, see front of form, upper-left corner.

Instructions are in numerical order based on the column number found below the data field. Do not use commas or leading zeroes in number fields. Decimal points must be shown in their own box. Most of the information needed to complete this form is found on the Uniform Hazardous Waste Manifest form used to ship the waste off site.

- 1-5 Your Solid Waste Registration Number: The 5-digit number assigned to the site for which you are reporting.
- 8-11 Report for: The year of the data included in the report. (Example, Report for: 2003, reported in 2004)
- 12-23 Your EPA ID#: Enter the EPA ID Number assigned to the site for which you are reporting.
- 24 No Report Required: Check this box if the facility meets the qualifications found in RG-151.
- 25-32 Texas Waste Code: The 8-digit Texas Waste Code assigned to the waste on the facility's Notice of Registration (NOR). This can also be an 8-digit One-time Shipment waste code number assigned by the TCEQ. Do not report Texas Waste Codes beginning with OUTS, TSDF, UNIV or CESQ.
- 33-48 EPA Hazardous Waste No: Enter the 4-digit EPA Hazardous Waste Number(s) that corresponds to the Texas Waste Code. If the waste is non-hazardous, these fields should be left blank.
- 49-57 Total Quantity Generated: Enter the amount of this waste that was generated on site between January 1 and December 31 of the report year. This quantity must be greater than or equal to zero and cannot be blank. Do not report a negative number.
- 58 Units: Enter the type of unit of measurement that describes the quantity generated. Use only P for pounds, K for kilograms, or T for tons. To convert other units of measurement, read publication RG-151, as stated above.
- 59-67 Quantity Handled: Enter the amount of this waste that was managed on site or shipped off site. If either the receiving facility number or the system type code changes, report a separate quantity handled in the next row. Quantity handled must be greater than zero and cannot be blank.
- 68 Units: Enter the type of unit of measurement that describes the quantity <u>handled</u>. To report several quantities handled for the same Texas Waste Code, the unit of measure must always match that of the Total Quantity Generated. Use only P for pounds, K for kilograms, or T for tons.
- 69-71 System Type Code: Enter the H-code that represents the treatment, storage or disposal of the waste, either on site or at an off site receiving facility. This list is found in the RG-151 or at our website ww.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting.
- 72 Fee: If the treatment of this waste qualifies for an exemption from waste generation fees, enter the code 1, 2, or 3. (See publication RG-151 for a definition of the exemption codes.) If you are not claiming an exemption, leave this field blank.
- 73-77 Facility Number: Enter the 5-digit Solid Waste Registration Number of the off site facility that treated, stored, or disposed of the waste. For waste that is shipped out-of-state, refer to the <u>Codes for</u> <u>Out-of-State Generators and Receivers</u> list found on our website www.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting. If, on December 31, the waste was still on site for treatment, storage or disposal, refer to your NOR and enter the 3-digit waste management unit number for the unit where the waste is located.
- 78-89 Receiver's EPA ID#: Enter the 12-digit EPA ID Number of the off site facility that treated, stored or disposed of the waste. For a foreign receiver's EPA ID Number, refer to the Codes for Out-of-State Generators and Receivers list found at the website stated above. If the waste is non-hazardous and the receiving facility does not have an EPA ID#, leave this field blank and record the receiving facility's name in the Comments field.
- 90-119 Comments: This field is used to record additional 4-digit EPA Waste Numbers or the name of the non-hazardous, out-of-state, receiving facility that does not have an EPA ID#.
- 120-169 Generator Company Name: If the generator company name has changed since the form was preprinted, then complete this field with the current company name. If the form is not preprinted and the company name is blank, enter the current company name.
- 170-199 Company Authorized Agent: Print the name of the person designated by the generating company as the person responsible for the Annual Waste Summary report. Record a phone number for questions, sign and date each page of the form.
- 200-229 Title: Print the title of the Authorized Agent.

REGISTRATION AND REPORTING SECTION MC 129 REGISTRATION, REVIEW AND REPORTING DIVISION TEXAS COMMISSION ON ENVIRONMENTAL QUALITY P.O. BOX 13087 AUTOMIN TEXT TATAL 2021	ANNUAL WASTE SUMMARY
Geoffrey B Reeder Union Pacific Railroad Company	NO REPORT REQUIRED         Your           24         {See 30 TAC 335.9(a)(3); also see instructions}         TX D 0 0 0 8 2 0 2 6 6           12
Houston, TX 77026-5264 281-350-7197	X     ORIGINAL SUMMARY     REVISED SUMMARY     SUPPLEMENTAL SUMMARY
	YOUR WASTE GENERATION FEE IS CALCULATED FROM THIS REPORT. BE SURE THE INFORMATION IS CORRECT TO REPORT WASTEWATER, SEE INSTRUCTION BOOKLET RG-151.
TEXAS WASTE EPA HAZARDOUS EPA HAZARDOUS EPA HAZARDOUS EPA HAZARDOUS WASTE NO. WASTE NO. WASTE NO.	WASTE NO. WASTE DESCRIPTION TOTAL QUANTITY GENERATED UNITS
1 .4 .7 .7 .3 .0 .1 .2	Petroleum-affected soils generated as part of site         1         6         3         4         0         P           45         investigation and corrective action.         49         6         56         56
QUANTITY HANDLED         UNITS         TYPE CODE         FEE         NUMBER           59         6         3         4         8         0         P         69         72         3         0         2         7         1	RECEIVER'S EPA ID #         COMMENTS           T XD 0 4 7 1 9 6 3 3 8         90
59 68 69 72 73	78         90         119
TEXAS WASTE EPA HAZARDOUS EPA HAZARDOUS EPA HAZARDOUS CODE WASTE NO. WASTE NO. WASTE NO.	EPA HAZARDOUS WASTE NO. WASTE DESCRIPTION TOTAL QUANTITY GENERATED UNITS
1 14 18 13 15 11 4 2 33 37 41 25 SYSTEM FACILITY	Drilling mud from boring monitor wells for investigative purposes.
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Image: Separative purposes.
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Image: series index in the series index i
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Image: state of the state at attached documents and that based on my inquiry of ed information is true, accurate, and complete.       Image: state of the state
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Image: state of the state
1       .4       .3       .37       .41         25       .37       .41         0UANTITY HANDLED       UNITS       TYPE CODE       FEE       FACELITY         1       1       4       .33       .37       .41         1       1       4       .33       .37       .41         0       1       1       4       .3       .27       .1         59       .1       4       9       3       .60	$\begin{array}{c c c c c c } \hline \\ \hline $
1       .4       .3       .3       .3       .41         25       .3       .37       .41         0UANTITY HANDLED       UNITS       TYPE CODE       FEE       FACELITY         1       4       9       3       60       P       H       1       41         59       .1       4       9       3       60       P       H       1       41         59       .68       .69       .72       .73	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\frac{1}{45} \qquad \qquad$

### **Annual Waste Summary Form Instructions**

For more detailed instructions, please read or download RG-151, <u>Industrial and Hazardous Waste Annual Waste Summary Instruction Booklet</u> found on our website www.tceq.com under Forms and Publications. For the TCEQ mailing address and phone number, see front of form, upper-left corner.

Instructions are in numerical order based on the column number found below the data field. Do not use commas or leading zeroes in number fields. Decimal points must be shown in their own box. Most of the information needed to complete this form is found on the Uniform Hazardous Waste Manifest form used to ship the waste off site.

- 1-5 Your Solid Waste Registration Number: The 5-digit number assigned to the site for which you are reporting.
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- 33-48 EPA Hazardous Waste No: Enter the 4-digit EPA Hazardous Waste Number(s) that corresponds to the Texas Waste Code. If the waste is non-hazardous, these fields should be left blank.
- 49-57 Total Quantity Generated: Enter the amount of this waste that was generated on site between January 1 and December 31 of the report year. This quantity must be greater than or equal to zero and cannot be blank. Do not report a negative number.
- 58 Units: Enter the type of unit of measurement that describes the quantity generated. Use only P for pounds, K for kilograms, or T for tons. To convert other units of measurement, read publication RG-151, as stated above.
- 59-67 Quantity Handled: Enter the amount of this waste that was managed on site or shipped off site. If either the receiving facility number or the system type code changes, report a separate quantity handled in the next row. Quantity handled must be greater than zero and cannot be blank.
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- 200-229 Title: Print the title of the Authorized Agent.

UNION PACIFIC RAILROAD COMPANY GEOFFREY B REEDER 24125 ALDINE WESTFIELD RD SPRING, TX 77373-9015

	REGISTRATION AND REPORTING SECTION MC 129 REGISTRATION, REVIEW AND REPORTING DIVISION TEXAS COMMISSION ON ENVIRONMENTAL QUALITY P.O. BOX 13087 AUCTUM STARS 78711 2007	ANNUAL WASTE SUMMARY	G1 Report for: 2004
	Geoffrey B Reeder	NO REPORT REQUIRED     Your       24     {See 30 TAC 335.9(a)(3); also see instructions}     T	X,D,O,O,O,8,2,0,26,6
	Union Pacific Railroad Company 4910 Liberty Road Houston IX 77026-5264 281-350-7197		
		YOUR WASTE GENERATION FEE IS CALCULATED FROM THIS REPORT. BE SURE	THE INFORMATION IS CORRECT.
[	TEXAS WASTE EPA HAZARDOUS EPA HAZARDOUS EPA HAZARDOUS CODE WASTE NO. WASTE NO. WASTE NO.	I CREFORT WASTEWATER, SEE INSTRUCTION BOOKLET	TOTAL QUANTITY GENERATED UNITS
	0914101H F034 K001	Groundwater generated from purging of various monitor wells	
	$\begin{array}{c} 23 \\ \hline \begin{array}{c} 23 \\ \hline \begin{array}{c} 23 \\ \hline \begin{array}{c} 23 \\ \hline \end{array} \end{array} \end{array} \xrightarrow{33} \xrightarrow{33} \xrightarrow{33} \xrightarrow{33} \xrightarrow{33} \xrightarrow{41} \xrightarrow{41} \xrightarrow{51} 51$	T         X         D         9         8         0         6         24         0         3         5         1 <th1< th="">         1         1         1</th1<>	
	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		119 119 119
[	TEXAS WASTE EPA HAZARDOUS EPA HAZARDOUS CODE EPA HAZARDOUS EPA HAZARDOUS EPA HAZARDOUS EPA HAZARDOUS WASTE NO. WASTE NO.	B EPA HAZARDOUS WASTE DO. WASTE DESCRIPTION	TOTAL QUANTITY GENERATED UNITS
	0915301H	45 Soll derived from the boring of monitoring wells for investigation	49 D D P 58
	25 33 37 41		
	25 33 37 41 QUANTITY HANDLED UNITS TYPE CODE FEE NUMBER	RECEIVER'S EPA ID #     COMMENTS	
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	RECEIVER'S EPA ID #     COMMENTS	119 119
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	RECEIVER'S EPA ID #     COMMENTS     78     90	
-	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	RECEIVER'S EPA ID #     COMMENTS     FORMENTS     FO	
	25     33     37     41       QUANTITY HANDLED     UNITS     SYSTEM     FEE     FACILITY       59     68     69     72     73       59     68     69     72     73       59     68     69     72     73       59     68     69     72     73       59     68     69     72     73       59     68     69     72     73       59     68     69     72     73       59     68     69     72     73	RECEIVER'S EPA ID # COMMENTS  78  78  78  78  78  78  78  90  Tation submitted in this and all attached documents and that basedon my inquiry of ed information is true, accurate, and complete.	
	25       33       37       41         QUANTITY HANDLED       UNITS       SYSTEM       FEE       FACLUTY         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         1 certify under penalty of law that 1 have personally examined and am familiar with the information, 1 believe that the submitting environmediately responsible for obtaining the information, 1 believe that the submitting environmediately responsible for obtaining the information, 1 believe that the submitting environmediately responsible for obtaining the information, 1 believe that the submitting environmediately responsible for obtaining the information, 1 believe that the submitting environmediately responsible for obtaining the information, 1 believe that the submitting environmediately responsible for obtaining the information, 1 believe that the submitting environmediately responsible for obtaining the information, 1 believe that the submitting environmediately responsible for obtaining the information, 1 believe that the submitting environmediately responsible for obtaining the information, 1 believe that the submitting environmediately responsible for obtaining the information, 1 believe that the submi	RECEIVER'S EPA ID # COMMENTS  78  78  78  78  78  78  90  78  78  78  90  78  78  78  90  78  78  78  78  90  78  78  78  90  78  78  78  78  90  78  78  78  90  78  78  78  78  90  78  78  78  90  78  78  78  78  90  78  78  78  78  90  78  78  78  78  78  90  78  78  78  78  78  78  78  78  78  7	
	25       33       37       41         QUANTITY HANDLED       UNITS       SYSTEM       FEE       FACLITY         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         1       1       1       1       1       1         59       68       69       72       73         1       1       68       69       72       73         1       1       1       1       1       1       1         59       68       69       72       73       1         1       1       1       1       1       1       1         59       68       89       72       73       1         1       1       1       1       1       1       1         59       1       67       72       73       1       1	RECEIVER'S EPA ID #       COMMENTS         78       90         Tation submitted in this and all attached documents and that basedon my inquiry of ed information is true, accurate, and complete.         169       169	
	25       33       37       41         QUANTITY HANDLED       UNITS       SYSTEM       FEE       FACLITY         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         1       certily under penalty of law that 1 have personally examined and am familiar with the inform those individuals immediately responsible for obtaining the information, 1 believe that the submitting ENERATOR COMPANY NAME         QUANTITY UNITS       Company       120         GENERATOR COMPANY NAME IF DIFFERENT FROM THAT PREPRINTED ABOVE       120         120       COMPANY AUTHORIZED AGENT       140	RECEIVER'S EPA ID #       COMMENTS         78       90         100       100         110       100         1110       1110         1110       1110         1110       1110         1110       1110         1110       1110         1110       1100	Page <u>3</u> of <u>6</u>
	25       33       37       41         QUANTITY HANDLED       UNITS       SYSTEM       FEE       FACHTY         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         59       68       69       72       73         1 certily under penalty of law that 1 have personally examined and am familiar with the inform those individuals immediately responsible for obtaining the information, 1 believe that the submitting ENERATOR COMPANY NAME         GENERATOR COMPANY NAME       Union Pacific Railroad Company         120       GENERATOR COMPANY NAME IF DIFFERENT FROM THAT PREPRINTED ABOVE         120       COMPANY AUTHORIZED AGENT         Ge of f f y eyy       R e e d e y         120       COMPANY AUTHORIZED AGENT   <	RECEIVER'S EPA ID #       COMMENTS         78       90         78	

### **Annual Waste Summary Form Instructions**

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- 49-57 Total Quantity Generated: Enter the amount of this waste that was generated on site between January 1 and December 31 of the report year. This quantity must be greater than or equal to zero and cannot be blank. Do not report a negative number.
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GEOFFREY B REEDER 24125 ALDINE WESTFIELD RD SPRING, TX 77373-9015

EGISTHATION AND REPORTING SECTION IC 129 IEGISTRATION, REVIEW AND REPORTING DIVISION EXAS COMMISSION ON ENVIRONMENTAL QUALITY	ANNUAL WASTE SUMMARY	2004
.0. BOX 13087 USTIN, TEXAS 78711-3087 TELEPHONE: (512) 239-6413		8
Geoffrey B Reeder	IND REPORT REQUIRED           24         {See 30 TAC 335.9(a)(3); also see instructions}}	0,2,6,6
4910 Liberty Road Houston, TX 77026-5264 281-350-7197		
	YOUR WASTE GENERATION FEE IS CALCULATED FROM THIS REPORT. BE SURE THE INFORMATION	IS CORRE
TEXAS WASTE EPA HAZARDOUS EPA HAZARDOUS FA HAZARDOU	TO REPORT WASTEWATER, SEE INSTRUCTION BOOKLET RG-151.	
TARTENO. WASTENO. WASTENO.	WASTE NO. WASTE DESCRIPTION TOTAL QUANTITY GENE	
	RECEIVER'S EPA ID #         COMMENTS	
<del>3</del> <u>68</u> <u>69</u> <u>72</u> <u>73</u>	78 90	
TEXAS WASTE EPA HAZARDOUS EPA HAZARDOUS EPA HAZARDOU CODE WASTE NO. WASTE NO. WASTE NO.	US EPA HAZARDOUS WASTE NO. WASTE DESCRIPTION TOTAL QUANTITY GEN	ERATED U
	Purge water generated as part of ground water monitoring and the second se	þ
QUANTITY HANDLED UNITS TYPE CODE FEE NUMBER	RECEIVER'S EPA ID # COMMENTS	•
		······································
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•	ormation submitted in this and all attached documents and that basedon my inquiry of nitted information is true, accurate, and complete.	
certify under penalty of law that I have personally examined and am familiar with the into nose individuals immediately responsible for obtaining the information, I believe that the submit		
certify under penalty of law that I have personally examined and am familiar with the info hose individuals immediately responsible for obtaining the information, I believe that the submi ENERATOR COMPANY NAME Inion Pacific Railroad Company		
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certify under penalty of law that I have personally examined and am familiar with the Info hose individuals immediately responsible for obtaining the information, I believe that the submi- IENERATOR COMPANY NAME Union Pacific Railroad Company 10 ENERATOR COMPANY NAME IF DIFFERENT FROM THAT PREPRINTED ABOVE		6
certify under penalty of law that I have personally examined and am familiar with the Info hose individuals immediately responsible for obtaining the information, I believe that the submi- IENERATOR COMPANY NAME Union Pacific Railroad Company Union	PHONE NUMBER 601 \ 250 7107	6
certify under penalty of law that I have personally examined and am familiar with the lnfc hose individuals immediately responsible for obtaining the information, I believe that the submi- IENERATOR COMPANY NAME Union Pacific Railroad Company Union	Image: Phone NUMBER       169	6

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SPRING, TX 77373-9015

	REGISTRATION AND REPORTING SECTION MC 129 REGISTRATION, REVIEW AND REPORTING DIVISION TEXAS COMMISSION ON ENVIRONMENTAL QUALITY P.O. BOX 13087 AUSTIN, TEXAS 78711-3087 TELEPHONE: (512) 239-6413	ANNUAL WASTE SUMMARY
•	Geoffrey B Reeder Union Pacific Railroad Company 4910 Liberty Road	NO REPORT REQUIRED {See 30 TAC 335.9(a)(3); also see instructions}         Your EPA ID #         T X D 0 0 0 0 8 2 0 2 6 6           SUMMARY STATUS
	HOUSLON, 1X //020-5264 201-350-7197	YOUR WASTE GENERATION FEE IS CALCULATED FROM THIS REPORT. BE SURE THE INFORMATION IS CORRECT. TO REPORT WASTEWATER, SEE INSTRUCTION BOOKLET RG-151.
	TEXAS WASTE EPA HAZARDOUS EPA	A HAZARDOUS WASTE DESCRIPTION Aqueous waste with low surfactants. Groundwater generated fr 49
•	QUANTITY HANDLED     UNITS     SYSTEM TYPE CODE     FEE     FACILITY NUMBER       59     68     69     72     73     78	
		90 119
		WASTE NO. WASTE DESCRIPTION TOTAL QUANTITY GENERATED UNITS Creosote sludge, soll mixture generated as part of corrective and a part of corrective
	QUANTITY HANDLED     UNITS     TYPE CODE     FEE     NUMBER       59     68     69     72     73     78	RECEIVER'S EPA ID #         COMMENTS           90         119
	59 72 73 78 68 69 72 73 78	
	59 72 73 78 i certify under penalty of law that i have personally examined and am familiar with the information those individuals immediately responsible for obtaining the information, I believe that the submitted infor	119 90 119 In submitted in this and all attached documents and that basedon my inquiry of formation is true, accurate, and complete.
•	GENERATOR COMPANY NAME Union Pacific Railroad Company	<u></u>
		PHONE NUMBER 169 Page 5 of 6
	$\frac{ \mathbf{G}   \mathbf{e}   \mathbf{o}   \mathbf{f}   \mathbf{f}   \mathbf{e}   \mathbf{y}   \mathbf{R}   \mathbf{e}   \mathbf{e}   \mathbf{d}   \mathbf{e}   \mathbf{r}     \mathbf{v}                                      $	189     SIGNATURE OF COMPANY AUTHORIZED AGENT     DATE       + i o n     Confrage from the company authorized agent     DATE
	$[M   a   n   a   g   e   r, \models n   v,   S   i \downarrow t   e     k   e   me   g   i   a   t$	

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### **Annual Waste Summary Form Instructions**

For more detailed instructions, please read or download RG-151, <u>Industrial and Hazardous Waste Annual Waste Summary Instruction Booklet</u> found on our website www.tceq.com under Forms and Publications. For the TCEQ mailing address and phone number, see front of form, upper-left corner.

Instructions are in numerical order based on the column number found below the data field. Do not use commas or leading zeroes in number fields. Decimal points must be shown in their own box. Most of the information needed to complete this form is found on the Uniform Hazardous Waste Manifest form used to ship the waste off site.

- 1-5 Your Solid Waste Registration Number: The 5-digit number assigned to the site for which you are reporting.
- 8-11 Report for: The year of the data included in the report. (Example, Report for: 2003, reported in 2004)
- 12-23 Your EPA ID#: Enter the EPA ID Number assigned to the site for which you are reporting.
- 24 No Report Required: Check this box if the facility meets the qualifications found in RG-151.
- 25-32 Texas Waste Code: The 8-digit Texas Waste Code assigned to the waste on the facility's Notice of Registration (NOR). This can also be an 8-digit One-time Shipment waste code number assigned by the TCEQ. Do not report Texas Waste Codes beginning with OUTS, TSDF, UNIV or CESQ.
- 33-48 EPA Hazardous Waste No: Enter the 4-digit EPA Hazardous Waste Number(s) that corresponds to the Texas Waste Code. If the waste is non-hazardous, these fields should be left blank.
- 49-57 Total Quantity Generated: Enter the amount of this waste that was generated on site between January 1 and December 31 of the report year. This quantity must be greater than or equal to zero and cannot be blank. Do not report a negative number.
- 58 Units: Enter the type of unit of measurement that describes the quantity generated. Use only P for pounds, K for kilograms, or T for tons. To convert other units of measurement, read publication RG-151, as stated above.
- 59-67 Quantity Handled: Enter the amount of this waste that was managed on site or shipped off site. If either the receiving facility number or the system type code changes, report a separate quantity handled in the next row. Quantity handled must be greater than zero and cannot be blank.
- 68 Units: Enter the type of unit of measurement that describes the quantity handled. To report several quantities handled for the same Texas Waste Code, the unit of measure must always match that of the Total Quantity Generated. Use only P for pounds, K for kilograms, or T for tons.
- 69-71 System Type Code: Enter the H-code that represents the treatment, storage or disposal of the waste, either on site or at an off site receiving facility. This list is found in the RG-151 or at our website ww.tceq.com under Registration and Reporting Section, Record keeping and Reporting.
- 72 Fee: If the treatment of this waste qualifies for an exemption from waste generation fees, enter the code 1, 2, or 3. (See publication RG-151 for a definition of the exemption codes.) If you are not claiming an exemption, leave this field blank.
- 73-77 Facility Number: Enter the 5-digit Solid Waste Registration Number of the off site facility that treated, stored, or disposed of the waste. For waste that is shipped out-of-state, refer to the <u>Codes for</u> <u>Out-of-State Generators and Receivers</u> list found on our website www.tceq.com under Registration and Reporting Section, Recordkeeping and Reporting. If, on December 31, the waste was still on site for treatment, storage or disposal, refer to your NOR and enter the 3-digit waste management unit number for the unit where the waste is located.
- 78-89 Receiver's EPA ID#: Enter the 12-digit EPA ID Number of the off site facility that treated, stored or disposed of the waste. For a foreign receiver's EPA ID Number, refer to the <u>Codes for Out-of-State</u> <u>Generators and Receivers</u> list found at the website stated above. If the waste is non-hazardous and the receiving facility does not have an EPA ID#, leave this field blank and record the receiving facility's name in the Comments field.
- 90-119 Comments: This field is used to record additional 4-digit EPA Waste Numbers or the name of the non-hazardous, out-of-state, receiving facility that does not have an EPA ID#.
- 120-169 Generator Company Name: If the generator company name has changed since the form was preprinted, then complete this field with the current company name. If the form is not preprinted and the company name is blank, enter the current company name.
- 170-199 Company Authorized Agent: Print the name of the person designated by the generating company as the person responsible for the Annual Waste Summary report. Record a phone number for questions, sign and date each page of the form.
- 200-229 Title: Print the title of the Authorized Agent.

•	REGISTRATION AND REPORTING SECTION MC 129 REGISTRATION, REVIEW AND REPORTING DIVISION TEXAS COMMISSION ON ENVIRONMENTAL QUALITY P.O. BOX 13087	ANNUAL WASTE SUMMARY	G1 Report for: 2004
	AUSTIN, TEXAS 78711-3087 Geoffrey B Reeder Union Pacific Railroad Company	NO REPORT REQUIRED       Your         24       {See 30 TAC 335.9(a)(3); also see instructions}	Ţ,X,D,O,O,O,8,2,Q26,6
	4910 Liberty Road Houston, TX 77026-5264 281-350-7197	SUMMARY STATUS       X     ORIGINAL SUMMARY       REVISED SUMMARY	SUPPLEMENTAL SUMMARY
· 		TO REPORT WASTE VENERATION THE IS CALCULATED FROM THIS REPORT. BE SUR TO REPORT WASTEWATER, SEE INSTRUCTION BOOKLE	T RG-151.
	TEXAS WASTE     EPA HAZARDOUS     EPA HA	WASTE DESCRIPTION  Soli generated primarily by the boring of monitoring wells a	
•••	$\begin{bmatrix} 33 & 03 & 03 & 72 & 73 \\ 59 & 68 & 69 & 72 & 73 & 74 \\ 59 & 73 & 74 & 74 \\ 59 & 73 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 59 & 74 & 74 & 74 \\ 50 & 74 & 74 & 74 \\ 74 & 74 & 74 & 74 \\ 74 & 74 &$		
	59 68 69 72 73 74		119
· · ·	TEXAS WASTE EPA HAZARDOUS EPA HAZARDOUS EPA HAZARDOUS EFA	PA HAZARDOUS WASTE DESCRIPTION	TOTAL QUANTITY GENERATED
		Petroleum contaminated soils generated as part of corrective	49 P 58
	QUANTITY HANDLED       UNITS       TYPE CODE       FEE       FACILITY $59$ $68$ $69$ $72$ $73$ $77$	RECEIVER'S EPA ID #         COMMENTS           1 </th <th>119</th>	119
 	59 F 72 73 77	B B	
.			119
	I certify under penalty of law that I have personally examined and am familiar with the informatic those individuals immediately responsible for obtaining the information, I believe that the submitted in	on submitted in this and all attached documents and that basedon my inquiry of formation is true, accurate, and complete.	
	Union Pacific Railroad Company		
	GENERATOR COMPANY NAME IF DIFFERENT FROM THAT PREPRINTED ABOVE		Page_6 of6
•	COMPANY AUTHORIZED AGENT Geoffrey Reeder	PHONE NUMBER (281) 350-7197	

### **Annual Waste Summary Form Instructions**

For more detailed instructions, please read or download RG-151, Industrial and Hazardous Waste Annual Waste Summary Instruction Booklet found on our website www.tceq.com under Forms and Publications. For the TCEQ mailing address and phone number, see front of form, upper-left corner.

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UNION PACIFIC RAILROAD COMPANY GEOFFREY B REEDER 24125 ALDINE WESTFIELD RD SPRING, TX 77373-9015 Certification Appendix B

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January 24, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084-5140 (281) 600-1000

## Certification Appendix B

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with 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 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.

EDFYRY TEEDON

Geoffrey B. Reeder, P.G. Authorized Representative Union Pacific Railroad

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## **Post-Closure Care Cost Estimate**

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Appendix C

January 24, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084-5140 (281) 600-1000
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<b>Post-Closure Care Cost Calculation</b> Appendix C	
Former Houston Wood Preserving Works 4910 Liberty Road Houston, Texas	
, Surface Impoundment Post-Closure Care Permit HW-50343-000 Industrial Solid Waste Registration No. 31547	
Ground Water Monitoring	
15 existing wells/piezometers sampled semiannually at a cost of \$500 each	\$15,000
Inspection and Maintenance	
Mowing monthly at a cost of \$300 per month 15 wells/piezometers inspected monthly at a cost of \$50 each Impoundment/storage area inspected weekly at a cost of \$150/week Minor repairs and/or upgrades (estimated)	\$3,600 \$750 \$5,200 <u>\$4,000</u> \$13,550
Total Estimated Cost (2004)	\$28 <i>,</i> 550
Adjusted to 2004 dollars using the inflation factor of 1.0152 (1)	\$30,000.00

# NOTE:

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(1) The annual cost estimate for post-closure care has been adjusted and rounded from 2004 dollars in accordance with 40 CFR §264.144 using the Implicit Price Deflator obtained from the U.S. Department of Commerce. The Implicit Price Deflator results in an inflation factor of 1.0152.



# Semiannual Monitoring Report: Second Semiannual Event 2004

Houston Wood Preserving Works ∵Housୁton, Texas



January 20, 2005

www.erm.com

Received

JAN 2 1 2005 Remediation Division Corrective Action Section



Delivering sustainable solutions in a more competitive world

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WWC COMM # 10877562 PROJ. MGR. M.Arthur

# Received

January 20, 2005

Remediation Division Corrective Action Section

Dr. Ata-ur Rahman Permits Section Industrial and Hazardous Waste Division Texas Commission on Environmental Quality 12100 Park 35 Circle, MC 130 Austin, Texas 78753



Houston, Texas 77084 (281) 600-1000

(281) 600-1001 (fax)

Subject: Transmittal of the Semiannual Monitoring Report: Second Semiannual Event 2004 Houston Wood Preserving Works, Houston, Texas

Dear Dr. Rahman:

On behalf of Union Pacific Railroad (UPRR), two copies of the referenced report are enclosed pursuant to the requirements of Section VII.B.2 of Compliance Plan No. CP-50343, issued in conjunction with Post-Closure Care Permit No. HW-50343-000.

Please call me at (281) 600-1000 if you have any questions regarding the enclosed report.

Sincerely,

**Environmental Resources Management** 

Uhin M. Uhing Christopher M. Young, P.C.

CMY/mnt Enclosures

cc: Mark Arthur, TCEQ-Austin Marsha Hill, TCEQ Region 12 – Houston Geoffrey B. Reeder, Union Pacific Railroad

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Union Pacific Railroad Company

Semiannual Monitoring Report: Second Semiannual Event 2004 *Houston Wood Preserving Works Houston, Texas* 

January 20, 2005

Project No. 0014419

Paul A. Stefan, P. C. Principal

Christopher M. Young, P.G. Project Manager

Mike Robbins Project Scientist

Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084-5140 T: 281-600-1000 F: 281-600-1001 1.0

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INTR	ODUCTION	
SECO	ND SEMIANNUAL GROUND WATER SAMPLING	
EVEN	T FOR 2004	
2.1	NARRATIVE SUMMARY OF SECOND SEMIANNUAL	
	ACTIVITIES	
	2.1.1 Corrective Action Program	
	2.1.2 Ground Water Monitoring	
2.2	ANALYTICAL RESULTS	
2.3	WELL MEASUREMENTS	
2.4	POTENTIOMETRIC SURFACE MAPS	
2.5	POTENTIOMETRIC SURFACE MAPS FOR RECOVERY	
	SYSTEM	
2.6	NON-AQUEOUS PHASE LIQUIDS	
2.7	NAPL RECOVERIES	
2.8	ANALYTICAL DATA EVALUATION	
2.9	BTEX, ACENAPHTHENE, AND NAPHTHALENE ISOPL	ETHS
2.10	UPDATED COMPLIANCE SCHEDULE	
2.11	SUMMARY OF CHANGES MADE TO THE	
	MONITORING/CORRECTIVE ACTION PROGRAM	
	AND SUMMARY OF RECOVERY WELL INSPECTIONS	AND
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2.12	<b>RECOMMENDATION FOR CHANGES</b>	
2.13	OTHER REQUESTED ITEMS	

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- B FIELD PARAMETERS
- C LABORATORY ANALYTICAL REPORTS AND DATA USABILITY SUMMARIES
- D UPDATED COMPLIANCE SCHEDULE

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2-4	Water Level and Total Depth of Well Measurements
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2-8	Naphthalene in B-TZ Ground Water

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INTRODUCTION

Routine semiannual ground water monitoring is required as a condition of the Compliance Plan (CP) for the former Houston Wood Preserving Works (HWPW) site, located at 4910 Liberty Road, Houston, Texas (Figure 1-1). These activities are performed to monitor ground water quality beneath a closed surface impoundment (Texas Natural Resource Conservation Commission [TNRCC] Permit Unit No. II.B.1). The surface impoundment was described in RCRA Permit No. HW-50343-000 and associated Compliance Plan (CP-50343), both issued by the TNRCC; [now referred to as the Texas Commission on Environmental Quality (TCEQ)]. The sampling event, analytical data, and this data evaluation report represent the second half of 2004 and fulfill the semiannual reporting requirements described in the CP, Section VII.B.2.

On September 13, 14, and 15, 2004, Environmental Resources Management (ERM) conducted ground water sampling activities at the site. These activities included sampling the on-site wells and piezometers associated with the surface impoundment.

Section VII.B.2 of the CP describes the technical information to be provided in each semiannual report. Those requirements include:

- 1. 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;
- 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 Ground Water 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;
- 3. Tabulation of all 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;
- 4. Potentiometric surface maps showing the elevation of the water table at the time of sampling;
- 5. If a recovery system is installed, potentiometric surface maps showing delineation of the radius of influence, minimum and maximum gradient within the hydrologically influenced area, and the direction of ground-water flow gradients outside the radius of influence;
- 6. 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;

- 7. If a recovery system is installed, monthly tabulations of quantities of recovered ground-water and NAPLs (if encountered), and graphs of weekly recorded flow rates versus time for the recovery wells during each quarter;
- 8. Tabulation of all data evaluation results pursuant to Section VI.D and status of each well listed on CP Table III with regard to compliance with the corrective action objectives and compliance with the GWPSs;
- 9. Maps of the contaminated area depicting concentrations of naphthalene, acenaphthene, and total benzene, toluene, ethylbenzene, and xylenes (BTEX) as isopleth contours;
- 10. An updated schedule summary as required by Section XI.A;
- 11. Summary of any changes made to the monitoring/corrective action program and a summary of recovery well inspections, repairs, and any operational difficulties;
- 12. Recommendation for any changes; and
- 13. Any other items requested by the Executive Director.

As of December 31, 2004, a recovery system had not been installed at this facility. Therefore, the provisions that relate to recovery wells (i.e., provisions 5, 7, and 11) were not applicable to this reporting period.

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#### SECOND SEMIANNUAL GROUND WATER SAMPLING EVENT FOR 2004

This section contains a discussion of each of the semiannual report provisions required by CP Section VII.B.2, by reference number to the list of provisions in Section 1.

2.1 NARRATIVE SUMMARY OF SECOND SEMIANNUAL ACTIVITIES

CP Section VII.B.2.a requires a narrative summary of evaluations completed in accordance with CP Sections V, VI, and VII. Section V relates to the Corrective Action Program in place for the permitted unit. Section VI relates to the Ground Water Monitoring Program designed to evaluate the effectiveness of the Corrective Action Program. Section VII includes provisions for amending the Corrective Action Program and/or Compliance Plan. Each of these evaluations is provided below.

#### 2.1.1 Corrective Action Program

Ground water samples were collected from the existing wells to assess affected ground water in the A-Transmissive Zone (A-TZ) and the B-Transmissive Zone (B-TZ). 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. and summarized as follows:

- A-TZ refers to the first sand unit encountered at approximately 35 feet above mean sea level (msl), averaging 6 to 8 feet in thickness; and
- B-TZ refers to the second sand unit encountered at approximately 15 feet above msl, averaging 8 to 10 feet in thickness.

The following monitor wells were sampled (as designated by function in CP Table III; Appendix A to this report):

- A-TZ Point of Compliance (POC) wells: MW-01A, MW-02, MW-07, MW-10A, and MW-11A;
- A-TZ Corrective Action Observation (CAO) wells: MW-04, MW-05, MW-07, MW-08, and MW-09;
- B-TZ POC wells: MW-10B, MW-11B, and P-10; and
- B-TZ CAO wells: P-11 and P-12.

In addition, MW-03, which is screened in the A-TZ within the closed impoundment, was also sampled.

#### 2.1.2 Ground Water Monitoring

ERM performed quarterly well inspections on September 13, 2004 and December 23, 2004 and ground water monitoring activities on September 13 through September 15, 2004. Ground water sampling was performed using procedures outlined in a U.S. EPA document titled *Low-Flow (Minimal* 

The wells are equipped with dedicated polytetrafluoroethylene (PTFE) tubing for ground water sampling. A Master-Flex® peristaltic pump was used to collect the ground water samples. A 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. Ground water was pumped from the screened interval of the well at a flow rate of less than approximately 0.5 L/min. A flow-through cell and field meters were used to measure and evaluate field parameters including temperature, pH, specific conductivity, dissolved oxygen, and turbidity. When the field parameters had stabilized to the EPA-specified criteria, the well was sampled. The samples were also collected at a flow rate of less then 0.5 L/min. A compilation of recorded field parameters is included in Appendix B.

For each well, three 40-mL glass vials [for volatile organic constituent (VOC) analysis] and four 1,000-mL amber glass bottles [for semivolatile organic constituent (SVOC) analysis] were filled directly from the pumping apparatus described above. The bottles, containing laboratory-supplied preservatives, were sealed and packed in coolers with sufficient ice to maintain a sample temperature of approximately 4°C. The sample coolers were delivered to Severn Trent 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.

## 2.2 ANALYTICAL RESULTS

The results of the chemical analyses for the second semiannual sampling event of 2004 are summarized in Tables 2-1 and 2-2, respectively. Compounds with concentrations reported above the GWPS are indicated in boxes on the tables. The CP sets the GWPS at the practical quantitation limit (PQL) for each of the compounds analyzed. Table 2-3 summarizes the field blank and trip blank results for quality assurance/quality control (QA/QC) purposes. Duplicate sample results are included on Table 2-1 for comparison with the original sample.

# 2.3 WELL MEASUREMENTS

During the quarterly well inspections and the sampling event, the following information was recorded at each monitor well:

# Before Sampling

- The presence of light non-aqueous phase liquids (LNAPLs) was evaluated; and
- Depth to ground water was measured to the nearest 0.01 foot.

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#### After Sampling

- The presence of dense non-aqueous phase liquids (DNAPLs) was evaluated; and
- Total well depths were determined.

Table 2-4 provides a summary of these measurements. None of the CP wells had measurable amounts of LNAPL or DNAPL.

#### 2.4 POTENTIOMETRIC SURFACE MAPS

The ground water elevation data recorded during the second semiannual 2004 well gauging activities were used to create potentiometric surface maps of the A-TZ and B-TZ (Figures 2-1 and 2-2, respectively). A review of Figure 2-1 indicates that ground water flow is toward the northwest with an estimated gradient of 0.00556 feet/foot (ft/ft) in the A-TZ. The flow in the B-TZ is toward the northwest with a gradient of 0.00625 ft/ft (Figure 2-2).

#### 2.5 POTENTIOMETRIC SURFACE MAPS FOR RECOVERY SYSTEM

As of December 31, 2004, a recovery system had not been installed at the closed surface impoundment. Therefore, this provision is not applicable.

#### 2.6 NON-AQUEOUS PHASE LIQUIDS

None of the CP wells had measurable amounts of LNAPL or DNAPL.

#### 2.7 NAPL RECOVERIES

No measurable amount of NAPL has been recorded in any of the CP wells. Therefore, recovery of NAPL has not been required and this provision is not applicable.

2.8 ANALYTICAL DATA EVALUATION

CP Section VI.D describes two methods which may be used to determine the compliance status of a given well. The analytical results may be either directly compared to the GWPS (CP Table I; included in Appendix A herein), or statistically compared to the GWPS using the 99% significance level of the t-distribution. Table 2-5 shows the results of a direct comparison of data from the first semiannual sampling event to the GWPS. A boxed value indicates an exceedance of the GWPS. Wells and piezometers were considered to be compliant if each of the constituents listed in CP Table I was reported at a concentration less than or equal to the GWPS. Third party data usability summaries are included in Appendix C, and third party qualifers were added to the data tables in italics.

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2.9	BTEX, ACENAPHTHENE, AND NAPHTHAL	ENE ISOPLETHS
	As specified by the CP, isopleth maps depicti- acenaphthene, and naphthalene were constru Tables 2-1 and 2-2. The isopleth maps are pre	ng concentrations of BTEX, acted using the data presented in esent in Figures 2-3 through 2-8.
2.10	UPDATED COMPLIANCE SCHEDULE	
	An updated compliance schedule is included schedule has been updated from the First Sen	as Appendix D of this report. The niannual Monitoring Report, 2004.
2.11	SUMMARY OF CHANGES MADE TO THE N ACTION PROGRAM AND SUMMARY OF F AND MAINTENANCE	AONITORING/CORRECTIVE RECOVERY WELL INSPECTIONS
	No changes were made to the monitoring/co	rrective action program.
2.12	RECOMMENDATION FOR CHANGES	
	A compliance plan renewal application was s 2003 consistent with the renewal requirement Several changes to the ground water monitor renewal application. UPRR responded to TC and is awaiting issuance of the final permit. recommended and the monitoring will procee- until the new CP is issued.	ubmitted to TCEQ on December 23, ts for the RCRA permit at the site. ing program were proposed in the EQ comments on the application At this time, no other changes are ed following the original provision
2.13	OTHER REQUESTED ITEMS	
	To date, no other items have been requested b	by the Executive Director.

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# Tables

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January 20, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084 (281) 600-1000

#### Summary of Analytical Results for the A-Transmissive Zone (A-TZ) First Semiannual Event 2004

Houston Wood Preserving Works Houston, Texas

	PQL	Monitor Well ID:	MW-01A	MW-02	MW-03	MW-04	MW-05	MW-07	MW-08	MW-09	MW-10A	MW-11A
Analyte	(GWPS)	Sample Date:	3/17/04	3/17/04	3/17/04	3/16/04	3/16/04	3/16/04	3/16/04	3/15/04	3/16/04	3/16/04
Volatile Organic Constituents												
Benzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.005		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	0.005		ND	0.0122 J	ND	ND	ND	ND	ND	ND	ND	ND
Semivolatile Organic Constituents												
Acenaphthene	0.010	Γ	0.04226	0.03018	0,1104	ND	0.000283 J	0.000285 J	ND	ND	ND	0.002777
Acenaphthylene	0.010	L	0.000785	0.000418 J	0.000833 JL	ND	ND	ND	ND	ND	ND	ND
Anthracene	0.010		0.001854	0.001494	0.00129 JL	0.00026 J	0.000251 J	0.000219 J	ND	ND	ND	0.000321 J
Benzo(a)anthracene	0.010		ND	ND	0.000379 J. JL	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND	ND	0.000511	ND	ND	ND	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	0.010		ND	ND	0.00052 JL	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	0.010	]	0.0194	0.01945	0.0097 JL	ND	ND	ND	ND	ND	ND	0.000463 J
Di-n-butyl phthalate	0.010	•	0.000691 U	0.000792 U	0.000654 U	ND	0.000253 J, U	0.000199 J, U	0.000268 J, U	0.00033 J, U	ND	0.000521 U
2,4-Dimethylphenol	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Diphenylhydrazine	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	0.010		0.000973 <i>U</i>	ND	0.000943 U	0.001025	ND	ND	ND	0.00099	0.000916	0.001042
Fluoranthene	0.010	_	0.003337	0.001861	0.01034 JL	ND	ND	ND	ND	ND	ND	0.000394 J
Fluorene	0.010	[	0.02334	0.02035	0.0427 JL	ND	ND	ND	ND	ND	ND	0.000354 J
2-Methylnaphthalene	0.010	_	0.005221	0.001694	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	0.010		0.000919	0.000604	0.000264 J, JL	ND	ND	ND	ND	ND	ND	0.002776
Nitrobenzene	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachiorophenol	0.050		ND, R	ND, R	ND, <i>R</i>	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	0.010		0.002194	0.002468	0.000663 JL	ND	ND	ND	ND	ND	ND	ND
Phenol	0.010		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	0.010		0.00117	0.000883	0.004965 JL	ND	ND	ND	ND	ND	ND	ND

NOTES:

All values reported in mg/L.

ND = Not detected at the Method Detection Limit (MDL), which can be found in the laboratory reports in Appendix C and is less than or equal to the GWPS in all instances. PQL = Practical Quantitation Limit, as defined on Table 1 of the Compliance Plan and determined by the analytical methods of EPA SW-846 Test Methods for Determining Solid Wastes. The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.

indicates value reported above the GWPS.

(a) MW-10BD is a duplicate of MW-10B.

(b) P-10D is a duplicate of P-10.

J = Estimated value between the reporting limit and MDL. U = Not Detected based on third party qualification

J = Estimated data based on third party qualification

L = Low bias based on third party qualification

H = High bias based on third party qualification

R = Rejected based on third party qualification

#### Summary of Analytical Results for the B-Transmissive Zone (B-TZ) Semiannual Monitoring Report: Second Semiannual Event 2004

#### Houston Wood Preserving Works Houston, Texas

	PQL	Monitor Well ID:	MW-10B	MW-11B	P-10	P-11	P-12
Analyte	(GWPS)	Sample Date:	9/14/04	9/14/04	9/13/04	9/15/04	9/14/04
Volatile Organic Constituents							
Benzene	0.005		0.0025 J	ND	ND	ND	ND
Chlorobenzene	0.005		ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005		ND	ND	ND	ND	ND
Methylene chloride	0.010		ND	ND	ND	ND	ND
Ethylbenzene	0.005		ND	ND	ND	ND	ND
Toluene	0.005		ND	ND	ND	ND	ND
Xylene (total)	0.005		ND	ND	ND	ND	ND
Semivolatile Organic Constituent	s						
Acenaphthene	0.010	Γ	0.0864	0.151	0.0244	0.151	ND
Acenaphthylene	0.010		0.00161	0.00193	0.000179 J	ND	ND
Anthracene	0.010		0.00549	0.00764	0.000798	0.00666	ND
Benzo(a)anlhracene	0.010		ND	ND	ND	ND	ND
Benzo(a)pyrene	0.010		ND, UJ	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	0.010		ND, UJ	ND	ND	ND	ND
2-Chloronaphthalene	0.010		ND	ND	ND	ND	ND
Chrysene	0.010		ND	ND	ND	ND	ND
Dibenzofuran	0.010	Г	0.0404	0.0804	0.00643	0.00261	ND
Di-n-butyl phthalate	0.010	_	0.000419 J, U	0.000449 J, U	0.000456 J, U	0.000532 U	0.000279 J, U
2,4-Dimethylphenol	0.010		ND	ND	ND	ND, UJ	ND
4,6-Dinitro-o-cresol	0.050		ND	ND	ND	ND	ND
2,4-Dinitrololuene	0.010		ND, UJ	ND	ND	ND	ND
2,6-Dinitrotoluene	0.010		ND, <i>UJ</i>	ND	ND	ND	ND
1,2-Diphenylhydrazine	0.010		ND, <i>UJ</i>	ND, UJ	ND, UJ	ND, UJ	ND, UJ
bis(2-Ethylhexyl)phthalate	0.010		0.0081	0.000649	ND	ND	0.000861
Fluoranthene	0.010		0.00294	0.00536	0.000474 J	0.00635 J	ND
Fluorene	0.010		0.044	0.0671	0.00768	0.0643	] ND
2-Methylnaphthalene	0.010		0.0127	0.0748	0.00264	0.00152	ND
Naphthalene	0.010		0.107 J	0.184 J	0.119 J	0.364 J	ND, UJ
Nitrobenzene	0.010		ND	ND	ND	ND	ND
p-Nitrophenol	0.050		ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	0.010		ND	ND	ND	ND	ND
Pentachlorophenol	0.050	_	ND, UJ	ND	ND	ND	ND
Phenanthrene	0.010		0.0256 JH	0.0422 JH	0.00234 <i>JH</i>	0.0352 JH	ND
Phenol	0.010		ND	ND	ND	ND	ND
Pyrene	0.010		0.00137	0.00268	0.000221 J	0.00375	0.00457

NOTES:

All values reported in mg/L.

ND = Not detected at the Method Detection Limit (MDL), which is less than or equal to the Practical Quantitation Limit (PQL) in all instances and can be found in the laboratory reports in Appendix C. PQL = Practical Quantitation Limit, as defined on Table I of the Compliance Plan and determined by the analytical methods of EPA SW-846 Test Methods for Determining Solid Wastes.

The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.

indicates value reported above the GWPS.

(a) MW-02D is a duplicate of MW-02.

(b) MW-11AD is a duplicate of MW-11A

J = Estimated value between the reporting limit and MDL.

U = Not Detected based on third party gualification

J = Estimated data based on third party qualification

L = Low bias based on third party qualification

H = High bias based on third party qualification

R = Rejected based on third party qualification

#### Summary of Analytical Results for Quality Assurance/Quality Control Samples Semiannual Monitoring Report: Second Semiannual Event 2004

## Houston Wood Preserving Works Houston, Texas

			Field Blank	Trip Blank
	PQL	Sample	FB-091404	TB01-2SA04
Analyte (0	<u>GWPS)</u>	Sample Date:	9/14/04	9/14/04
Methylene chloride	0.010		0.00281 J, <i>U</i>	0.00302 J, <i>U</i>
Di-n-butyl phthalate	0.010		0.000356 J, <i>U</i>	NA
bis(2-Ethylhexyl)phthalate	0.010		ND	NA
1,2-Diphenylhydrazine	0.010		ND, <i>UJ</i>	NA
Naphthalene	0.010		ND, <i>UJ</i>	NA

#### NOTES:

All values reported in mg/L.

ND = Not detected at the Method Detection Limit (MDL), which is less than or equal to the Practical Quantitation Limit (PQL) in all instances and can be found in the laboratory reports in Appendix C. NA = Not Analyzed.

PQL = Practical Quantitation Limit, as defined on Table I of the Compliance Plan and determined

by the analytical methods of EPA SW-846 Test Methods for Determining Solid Wastes.

The Compliance Plan Table 1 defines the Ground Water Protection Standard (GWPS) as the PQL.

J = Estimated value between the reporting limit and MDL.

U = Not Detected based on third party qualification.

J = Estimated data based on third party qualification.

## Water Level and Total Depth of Well Measurements Semiannual Monitoring Report: Second Semiannual Event 2004

Houston Wood Preserving Works Houston, Texas

Well ID	Top of Casing <sup>(1)</sup> Elevation (ft MSL)	Depth to Water (ft TOC)	Water Surface Elevation (ft MSL)	Total Depth of Well as Measured (ft TOC)	Total Depth as Completed (ft TOC) *
A-TZ Monito	oring Locations				
MW-01A	47.92	8.26	39.66	19.61	20.2
MW-02	47.97	8.71	39.26	NM	20.3
MW-03	48.34	9.03	39.31	19.52	20.9
MW-04	49.85	9.80	40.05	21.60	23.4
MW-05	49.24	8.58	40.66	27.30	28.3
MW-07	48.86	9.04	39.82	24.69	N/A
MW-08	49.33	9.31	40.02	24.98	26.8
MW-09	49.26	8.39	40.87	25.41	26.8
MW-10A	49.86	10.30	39.56	NM	25.9
MW-11A	50.05	10.28	39.77	23.75	24.4
B-TZ Monito	pring Locations				
MW-10B	49.94	10.41	39.53	46.42	48.8
MW-11B	50.18	10.53	39.65	46.66	46.8
P-10	47.69	7.99	39.70	44.80	N/A
P-11	48.98	9.14	39.84	44.69	51.8
P-12	48.78	7.93	40.85	42.70	51.7

#### NOTES:

Wells were gauged on September 13, 2004.

Non-aqueous phase liquids were not measured in any well.

ft MSL = feet above Mean Sea Level

ft TOC = feet below the Top Of (the well) Casing

\* Reported during well installation and completion

N/A = Information not available

NM = Not Measured

(1) Wells resurveyed by Baseline Surveyors on April 21 and 28, 2004.

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## TABLE 2-5

Compliance Status of Wells and Piezometers Semiannual Monitoring Report: Second Semiannual Event 2004

# Houston Wood Preserving Works Houston, Texas

A-TZ Monitoring Location	Well Designation	Compliance Status
MW-01A	Point of compliance	Non-Compliant
MW-02	Point of compliance	Non-Compliant
MW-03	Point of compliance	Non-Compliant
MW-10A	Point of compliance	Non-Compliant
MW-11A	Point of compliance	Non-Compliant
MW-04	Corrective action observation	Compliant
MW-05	Corrective action observation	Compliant
MW-07	Corrective action observation	Compliant
MW-08	Corrective action observation	Compliant
MW-09	Corrective action observation	Compliant
B-TZ Monitoring Location	Well Designation	Compliance Status
MW-10B	Point of compliance	Non-Compliant
MW-11B	Point of compliance	Non-Compliant
P-10	Point of compliance	Non-Compliant
P-11	Corrective action observation	Non-Compliant
P-12	Corrective action observation	Compliant

# Figures

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January 20, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084 (281) 600-1000

SURCE: U.S.G.S. 7.5 MINUTE QUADRANGLE, SETTER	Image: serie seri	
HOUSTON · NEW ORLEANS · AUSTIN · MOBILE · BEAUMONT · BATON ROUGE · CORPUS CHRISTI         DESIGN:       DRAWN: CAK       CHKD.: PJG         DATE:       12/29/04       SCALE: AS SHOWN       REV.:         W.O.NO.:       H:\dwg\L04\0014419A260.dwg, 12/29/2004 11:34:42 AM	FIGURE 1-1 SITE LOCATION MAP Houston Wood Preserving Works Houston, Texas	ERM.

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# **Compliance Plan Tables** *Appendix A*

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January 20, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084 (281) 600-1000 Compliance Plan No. CP-5 3 Southern Pacific Transportation Co.

#### TABLE I

#### Table of Hazardous and Solid Waste Constituents and Concentration Limits for Ground-Water Protection Standard

COLUMN A

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Hazardous Constituents

COLUMN B Concentration Limits (mg/l)

Acenaphthene	ND	(0.010)
Acenaphthylene	ND	(0.010)
Anthracene	ND	(0.010)
Benzene	ИД	(0.005)
Benzo(a) anthracene	ND	(0.010)
Benzo (a) pyrene	ND	(0.010)
bis(2-Ethylhexyl)phthalate	ND	(0.010)
bis(2-Chloroethoxy)methane	ND	(0.010)
Chlorobenzene	ND	(0.005)
2-Chloranaphthalene	ND	(0.010)
Chrysene	ND	(0.010)
Dibenzofuran	ND	(0.010)
1,2-Dichlorethane	DN	(0.005)
Dichloromethane	ND	(0.005)
2,4-Dimethylphenol	ND	(0.010)
Di-n-butyl phthalate	ND	(0.010)
4,6-Dinitro-o-cresol	ND	(0.050)
2,1-Dinitrotoluene	ND	(0.010)
2,6-Dinitrotoluene	ND	(0.010)
i,2-Diphenylhydrazine	DN	(0.010)
Ethylbenzene "	ND	(0.005)
Fluoranthene	ND	(0.010)
Fluorenc	. ND	(0.010)
Methylene chloride	ND	(0.010)
2-Methylnaphthalene	ND	(0.010)
Naphthalene	ND	(0.010)
Nitrobenzene	ND	(0.010)
4-Nitrophenal	ND	(0.050)
N-Nitrosodiphenylamine	ND	(0.010)
Pentachlorophenol	ND	(0.050)
Phenanthrene	ND	(0.010)
Phenol	ND	(0.010)
Syrene	ND	(0.010)
Toluene	ND	(0.005)
Xylenes	ND	(0.005)

N.D. Non-detectable at Practical Quantitation Limit as determined by the analytical methods of the United States Environmental Protection Agency publication SW-346 <u>Test Methods for Evaluating Solid Waste</u>, Third Edition, November 1986, (USEPA SW-346) and as listed in the July 3, 1987 edition of the Federal Register and later editions. Practical Quantitation Limit (PQL) is indicated in parentheses. Practical Quantitation Limits are the lowest concentrations of analytes in ground-water that can be reliably determined within specified Compliance Plan No. CP-50543 Southern Pacific Transportation Co.

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limits of precision and accuracy by the indicated methods under routine laboratory operating conditions.

Page 23 of 26

Compliance Plan No. CP-50345 Southern Pacific Transportation Co.

Table of Indicator Parameters and Concentration Limits for Ground-water Protection Standard

COL	UMN A
Hazardous	Constituents

COLUMN 3 Concentration Limits (mg/l) Page 24 of 26

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Acenaphthene	ND	(0.010)	
Anthracene	NO	(0.010)	•
Benzene	ND	(0.00S)	
bis(2-Ethylhexyl)phthalate	NO	(0.010)	
Dibenzofuran	ND	(0.010)	
2,4-Dimethylphenol	ND	(0.010)	
Ethylbenzene	ND	(0.005)	
Fluoranchene	NO	(0.010)	
Fluorene	ND	(0.010)	
Methylene Chloride	ND	(0.010)	
2-Methylnaphthalene	ND	(0.010)	
Naphthalene	ND	(0.010)	
Phenanthrene	ND	(0.010)	
Pyrene	ND	(0.010)	
Toluene	ND	(0.005)	
Xylenes	ND	(0.005)	

N.D.

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Non-detectable at Practical (2uantitation Limit as determined by the analytical methods of the United States Environmental Protection Agency publication SW-946 <u>Test Methods for Evaluating Solid Waste</u>, Third Edition, November 1986, (USEPA SW-946) and as listed in the July 8, 1987 edition of the Federal Register and later editions. Practical Quantitation Limit (PQL) is indicated in parentheses. Practical Quantitation Limits are the lowest concentrations of analytes in ground-water that can 'be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions.

Compliance Plan No. CP-50343 Southern Pacific Transportation Co.

#### TABLE III

Page 25 of 26

#### Designation of Wells by Function

# 1. POINT OF COMPLIANCE WELLS SAMPLING FREQUENCY A. Upper Transmissive Zone (existing) Semi-annual MW-1 Semi-annual MW-2 Semi-annual MW-7 Semi-annual KW-10\* Semi-annual MW-11\* Semi-annual

#### 2. BACKGROUND WELLS

MW - 9

As proposed in the Compliance Plan Application, background values of the tested constituents will be assumed to be the Practical Quantitation Limit (PQL), and therefore, negate the need for background wells, unless this Compliance Plan Is modified under Section VI.A.

Semi-annual

3.	CORR	ECTIVE ACTION OBSERV	SAMPLING FREQUENCY	
	А.	On-sice Uppermost	Transmissive Zone (existing	1)
		XX-4		Semi-annual
		MW-5		Semi-annual
		MW - 7		Semi-annual
		NW-S		Semi-annual

"Point of Compliance wells noted with an asterisk are to be installed within ninety (99) days of issuance of this Compliance Plan along the property boundary between existing monitor wells MW-2 and MW-7.

# **Field Parameters** Appendix B

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January 20, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084 (281) 600-1000

## TABLE B-1

# Ground Water Sampling Field Parameters

## Semiannual Monitoring Report: Second Semiannual Event 2004 Houston Wood Preserving Works Houston, Texas

Well ID: Date Sampled:	MW-01A 9/14/04	MW-02 9/15/04	MW-03 9/15/04	MW-04 9/14/04	MW-05 9/14/04	MW-07 9/13/04	MW-08 9/13/04	MW-09 9/14/04
Time Sampled (hrs CST)	1328	942	848	1027	908	1543	1323	1337
Temperature (°C)	24.2	24.2	22.6	25.1	24.1	24.2	25.7	25.4
pH (Standard Units)	6.80	6.52	6.80	6.36	6.73	7.07	7.10	6.82
Specific Conductivity (uS)	1,532	767	751	885	600	804	486	784
Dissolved Oxygen (mg/L)	0.3	0.1	0.3	0.5	0.3	0.3	0.4	0.2
Turbidity (NTU)	0.45	0.00	0.00	31.12	3.35	0.68	0.92	0.00

Well ID:	MW-10A	MW-10B	MW-11A	MW-11B	P-10	P-11	P-12
Date Sampled.	9/15/04	9/14/04	9/14/04	9/14/04	9/13/04	9/10/04	9/14/04
Time Sampled (hrs CST)	850	1123	1500	1013	1433	953	1135
Temperature (°C)	24.3	23.7	24.6	23.7	23.3	25.0	25.3
pH (Standard Units)	6.84	6.90	6.74	6.87	7.17	6.85	6.75
Specific Conductivity (uS)	892	1,209	1,027	1,132	1,066	1,166	1,124
Dissolved Oxygen (mg/L)	0.2	0.2	0.4	0.2	0.2	0.4	0.4
Turbidity (NTU)	0.00	0.26	0.00	0.00	0.00	0.00	0.00

#### NOTES:

CST = Central Standard Time

NTU = Nephalometric Turbidity Unit

# Laboratory Analytical Reports and Data Usability Summaries Appendix C

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January 20, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084 (281) 600-1000


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# ANALYTICAL REPORT

JOB NUMBER: 281147

Prepared For:

ERM Southwest, Inc.- Houston 15810 Park Ten Place Suite 300 Houston, TX 77084

Attention: Chris Young

Date: 10/06/2004

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Signature

Name: Sachin G. Kudchadkar Title: Project Manager III E-Mail:

10 Date

Severn Trent Laboratories 6310 Rothway Drive Houston, TX 77040

PHONE: 713-690-4444 FAX..: 713-690-5646

TOTAL NO. OF PAGES 43



10/06/2004

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Chris Young ERM Southwest, Inc.- Houston 15810 Park Ten Place Suite 300 Houston, TX 77084

Reference: Project : UPRR-HWPW-0014419/60 Project No. : 281147 Date Received : 09/15/2004 STL Job : 281147

Dear Chris Young:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

- 1. MW-03-2SA04
- 2. MW-10A-2SA04
- 3. MW-02-2SA04
- 4. P-11-2SA04
- 5. MW-02D-2SA04

All holding times were met for the tests performed on these samples.

Enclosed, please find the Quality Control Summary. All quality control results for the QC batch that are applicable to the sample(s) are acceptable except as noted in the QC batch reports.

The test results in this report meet all NELAP requirements for STL Houston's NELAP accredited parameters. Any exceptions to NELAP requirements will be noted and included in a case narrative as a part of this report.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Severn-Trent Laboratories to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

Sincerely,

Sachin G. Kudchadkar Project Manager

### SEVERN STL REVISED **W**TRENT

Table 1

**Cross-Reference Field Sample Identifications and Laboratory Identifications** 

Field Identification	EPA Sample Number	Laboratory Identification	8260B	8270C	Comment	
MW-03-2SA04	MW-03-2SA04	281147-1	x	x		
MW-10A-2SA04	MW-10A-2SA04	281147-2	x	x		1 - A
MW-02 2SA04	MW-02 2SA04	281147-3	x	x		
P-11-2SA04	P-11-2SA04	281147-4	X	X		. •
MW-02D-2SA04	MW-02D-2SA04	281147-5	X	x		

RG-366/TRRP-13

Appendix 1 - 1

Appendix 1: Data Usability Review Tool Data Review and Reporting under TRRP

## Appendix A Laboratory Data Package Cover Page

This data package consists of:

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 5.13 or ISO/IEC 17025 Section 5.10
  - 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) for each analyte for each method and matrix;
- R10 Other problems or anomalies.

The Exception Report for every 'No" or 'Not Reviewed (NR)" item in laboratory review checklist.

- Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By me signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.
- Check, if applicable: [] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

10/07/04 Date Laboratory Director Official Title (printed) Norman Flynn Name (Printed) Signature

64	roto-	w Name: STL-Houston	I BC Date: 00/21/04	•				· · · ·
Laoo	orator		LKC Date: 09/21/04					
Proj	ect N	ame: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147					
Revi	iewer	Name: ZFL	Prep Batch Number(s): 111223-VOA		· · :	÷		1
# <sup>1</sup>	A <sup>2</sup>	Description	······································	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER#
		Chain-of-custody (C-O-C)		1.52			iere.	104
R1	OI	Did samples meet the laboratory's standard conditions o	f sample acceptability upon receipt?	x				
		Were all departures from standard conditions described	in an exception report?			x	<u> </u>	
R2	OT	Sample and quality control $(\Omega C)$ identification		3.86	See.	* 1940 -	14.5	
: <u> </u>	01	Are all field sample ID numbers cross-referenced to the	laboratory ID numbers?		x		10,00	1
		Are all laboratory ID numbers cross-referenced to the co	prresponding OC data?	x				
R3	OI	Test reports		1.68	7865 1		BA	ZOBI
		Were all samples prepared and analyzed within holding	times?	x			· ·	
		Other than those results < MQL, were all other raw value	es bracketed by calibration standards?	X	· · ·			
		Were calculations checked by a peer or supervisor?		X				
		Were all analyte identifications checked by a peer or sup	pervisor?	X				
		Were sample quantitation limits reported for all analytes	s not detected?	X				
		Were all results for soil and sediment samples reported of	on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sed	liment samples?			X		
	· ·	If required for the project, TICs reported?				X		
R4	0	Surrogate recovery data		31.2	彩影	1997	공율	1932
		Were surrogates added prior to extraction?		X			<u> </u>	· · ·
		Were surrogate percent recoveries in all samples within	the laboratory QC limits?	<u>x</u>			ļ	L
<u>R5</u>	OI	Test reports/summary forms for blank samples		- BUC	1926) 1			6.
		Were appropriate type(s) of blanks analyzed?			<u> </u>		ļ	
		Were blanks analyzed at the appropriate frequency?		X				
		Were method blanks taken through the entire analytical	process, including preparation and, if	X	(		l	1.
		applicable, cleanup procedures?			<u> </u>			
<u>n</u>	OT	were blank concentrations < MQL?			1020			2052
KO		Laboratory control samples (LCS):		v	<u>(9596</u>	2.45	SEP.	-9-96-
	· • .	Were an COCS included in the LCS?	dure including prop and alashup stone?	+				<u> </u>
•		Was each LCS taken infolgin the entire analytical proces	dure, mendang prep and creanup steps?	$\frac{\Lambda}{\mathbf{v}}$	┢──┙			
		Were LCS and LCSD if applicable) % Rewithin the lal	horstony OC limits?	$\frac{1}{x}$				
	[	Does the detectability data document the laboratory's ca	nability to detect the COCs at the MDL used			x	-	
		to calculate the SOLs?			- e.	1		
		Was the LCSD RPD within OC limits?	· · · ·	1		x	<u> </u>	
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD)	) data	1997	<i>34</i> 2	1839 1	Sistemation	đini,
		Were the project/method specified analytes included in t	the MS and MSD?	X			1	2
		Were MS/MSD analyzed at the appropriate frequency?		X				
		Were MS (and MSD, if applicable) %Rs within the labo	ratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?		X				
R8	OI	Analytical duplicate data			3789 SVI 5	298	725	122
	l	Were appropriate analytical duplicates analyzed for each	n matrix?			X		· ·
		Were analytical duplicates analyzed at the appropriate fr	requency?			X		L
		Were RPDs or relative standard deviations within the la	boratory QC limits?		<u> </u>	X		ļ
R9	OI	Method quantitation limits (MQLs):	·	1.03		3885	1576	(28)
		Are the MQLs for each method analyte included in the l	aboratory data package?	X			· .	
		Do the MQLs correspond to the concentration of the low	vest non-zero calibration standard?	<u>  X</u>	<b> </b> '		<u> </u>	
		Are unadjusted MQLs included in the laboratory data pa	ickage?				1000 5	
K10	OI	Other problems/anomalies		139%	1.35%		<b>4</b> 38	148,393
		Are all known problems/anomalies/special conditions no	oted in this LRC and ER?	<u>  X</u>	<u> </u>			<u> </u>
		were all necessary corrective actions performed for the	reported data?	<u>  X</u>	<b> </b>		<u> </u>	<u> </u>
		i was applicable and available technology used to lower t	ine SUL minimize the matrix interference	ιX		1	L .	1

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 2.

NA = Not applicable; NR = Not reviewed; 3.

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

Ap	pen	dix A (cont'd): Laboratory Review Checklis	st: Reportable Data					
Lab	orato	ry Name: STL-Houston LRC	Date: 09/21/04			1,0		
Pro	ject N	Vame: UPRR-HWPW-0014419 60 Labo	pratory Job Number: 281147	•				
Rev	riewer	r Name: ZFL Prep	Batch Number(s): 111223-VOA		•			
#1	A <sup>2</sup>	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
<b>S1</b>	OI	Initial calibration (ICAL)		Sec.	2230	and a second	1.	\$ S
		Were response factors and/or relative response factors for each	h analyte within OC limits?	x				
		Were percent RSDs or correlation coefficient criteria met?		X				
		Was the number of standards recommended in the method use	ed for all analytes?	X				-
		Were all points generated between the lowest and highest star	ndard used to calculate the curve?	x				1.
		Are ICAL data available for all instruments used?		x				<u> </u>
		Has the initial calibration curve been verified using an approp	priate second source standard?	X				<b> </b>
S2	OT	Initial and continuing calibration verification (ICCV and t	CCV) and continuing calibration	. Art. S.			11,54	in de gi
	<u> </u>	Was the CCV analyzed at the method-required frequency?	corr, and continuing campration	X			site de air	states at the
		Were percent differences for each analyte within the method-	required OC limits?	X				<u> </u>
i		Was the ICAL curve verified for each analyte?		x				
		Was the absolute value of the analyte concentration in the ino	rganic CCB < MDI 2	<u>.</u>		x		
53	0	Mass speetral tuning		Sec. 2	1.1.2%	nt an	1.0.00	. Antie
50	<u> </u>	Was the appropriate compound for the method used for tuning	a)	v	1.18		<u>, 201, 14</u>	<u></u>
		Ware ion abundance data within the method required OC limit	g:			<u> </u>		
54	0	Treamel standards (IS):			1460	PAGE .	Nastrik	
94	<u> </u>	Were IS area counts and estantian times within the method re-	aviand OC limita?		يغنث ساسه		فيتذدينا	
SE		Were is area counts and retention times within the method-ret		Λ				
33		Raw data (NELAC section I appendix A glossary, and sec	ction 5.12 or ISO/IEC 17025 section				The local	
		were the raw data (for example, chromatograms, spectral data	a) reviewed by an analyst?					
		Were data associated with manual integrations flagged on the	raw data?	X	1.0.14		1.5.20	
50	0	Dual column confirmation	1000	ester.	<u>, 6</u> , 7		l theof	
0.0	-	Did dual column confirmation results meet the method-require	red QC?	<u> </u>		X		<u> </u>
3/	<u>0</u>	Tentatively identified compounds (TICs):		P.13.		<u>- 1997</u> - <b>1</b> 1	1940 S	સર્વર્ગ
	ļ	If TICs were requested, were the mass spectra and TIC data si	ubject to appropriate checks?			X	• . 	
58	<u> 1</u>	Interference Check Sample (ICS) results:	· · · · · · · · · · · · · · · · · · ·	1623	er Mel		228	323.5
	<u> </u>	Were percent recoveries within method QC limits?				<u>X</u>		<u> </u>
59	1	Serial dilutions, post digestion spikes, and method of stand	dard additions	325	ni Na Reference		- Marine	1.1.1.1
		Were percent differences, recoveries, and the linearity within	the QC limits specified in the method?	<u> </u>		X		<u> </u>
S10	OI	Method detection limit (MDL) studies	· · · · · · · · · · · · · · · · · · ·		이 있다. 같아요 같아요		28.93 <sup>°</sup>	1111
		Was a MDL study performed for each reported analyte?	· · · · · · · · · · · · · · · · · · ·	<u>X</u>				<u> </u>
		Is the MDL either adjusted or supported by the analysis of DC	CSs?	X				<u> </u>
S11	OI	Proficiency test reports:	·				نې دي. همدېمې	
	ļ	Was the laboratory's performance acceptable on the applicable	e proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation	· · ·			<u>1995</u>	میں اور	1.32
		Are all standards used in the analyses NIST-traceable or obtai	ined from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures			المهنية. منطقي المدر			. Salar
		Are the procedures for compound/analyte identification docur	mented?	X				
S14	OI	Demonstration of analyst competency (DOC)		Carl.	2000 1000		and yester Second Analysis	
		Was DOC conducted consistent with NELAC Chapter 5C or 1	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 (NELA	AC Chap 5 or ISO/IEC 17025 Section 5)		No.	72.50		(Å 🖓 ()
		Are all the methods used to generate the data documented, ver	rified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs):	· · · ·	1911-19	12981	220		1000
		Are laboratory SOPs current and on file for each method perfe	formed?	X				1
	I	1 Items identified by the letter "R" should be included in the labo	pratory data package submitted to the TCEO in	the T	RRP-1	require	d repo	rt(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).

2 3 4 5 NA = Not applicable. NR = Not Reviewed.

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

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Appe	endix A (cont'd): Laboratory Review Chec	cklist: Exception Reports	
Labora	atory Name: STL-Houston	LRC Date: 09/21/04	
Projec	t Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147	
Review	wer Name: ZFL	Prep Batch Number(s): 111223-VOA	
ER #1	DESCRIPTION		
1	Even though sample TB02-25A04 was listed on	the C-O-C it was not received by the labo	oratory.
2	Since no client sample was designated as the MS	S/MSD, the laboratory selected sample 28	1147-5 and one sample from another
	client. The data for the other client's sample wa	s not reviewed.	
	ER# = Exception Report identification "NR" or "No" is checked on the LRC	on number (an Exception Report should be cor C)	mpleted for an item if

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Ap	pen	dix A (cont'd): Laboratory Review Checkl	list: Reportable Data					
Labo	orator	y Name: STL-Houston LR(	C Date: 09/27/04					
Proje	ect N	ame: UPRR-HWPW-0014419 60 Lab	poratory Job Number: 281147					
Revi	ewer	Name: LG Prep	p Batch Number(s): 110850-SV SIM					• •.
# <sup>1</sup>	A <sup>2</sup>	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
		Chain-of-custody (C-O-C)		िहिंद्र				Right
R1	OI	Did samples meet the laboratory's standard conditions of sa	mple acceptability upon receipt?	x				<u> </u>
		Were all departures from standard conditions described in a	in exception report?			x		
22	OT	Sample and quality control (OC) identification		3.5.4	1.19.194	100	18.81	
		Are all field sample ID numbers cross-referenced to the lab	oratory ID numbers?	Y	<u> </u>		100	46.24
		Are all laboratory ID numbers cross-referenced to the corres	sponding OC data?	X				
23	OT	Test reports		<b>^</b>		390	1.5 %	1.5.84
	01	Were all samples prepared and analyzed within holding time	ec?	Y		<u></u>	P	1.847.972.97
		Other than those results $\leq MOI$ were all other raw values h	pracketed by calibration standards?	$\frac{\Lambda}{\mathbf{Y}}$				
		Were calculations checked by a peer or supervisor?	Stacketed by calibration standards?	$\frac{1}{\nabla}$				<u> </u>
		Were all applies identifications shocked by a peer of supervisor?	rigor 9	$\frac{1}{\nabla}$				├
	÷	Were an analyte identifications checked by a peer of superv	t datastad2		·			
		Were all results for soil and sediment semilar reported for	day weight basic?	<u> </u> ^-	┠		<u> </u>	
		Were & moisture (or solide) reported for all soil and addime	a dry weight basis?	<u> </u>		$\frac{1}{\nabla}$		
		Were 76 molsture (or somes) reported for all som and sedime			<u> </u>			<u> </u>
D.4	0	Sume and a second deta		1.5.11.5	8.58	<b>A</b>	8.5	
(4	0	Surrogate recovery data		1000 M	l of the	2.6		
		Were surrogates added prior to extraction?	laborato au OO liavitati	<u> </u>	-			<u> </u>
5	OT	were surrogate percent recoveries in all samples within the	laboratory QC limits?	1.000		10.00	1.2.2.4	1
0	01	Lest reports/summary forms for blank samples			1.50.46	2,000		्ह्य
		Were appropriate type(s) of blanks analyzed?		X	<u> </u>	<u> </u>		<u> </u>
		Were blanks analyzed at the appropriate frequency?		X	┣—	· .		┣──
		Were method blanks taken through the entire analytical proc	cess, including preparation and, if		[	[		ĺ
		applicable, cleanup procedures?	· · · · · · · · · · · · · · · · · · ·		· ·			<u> </u>
~		Were blank concentrations < MQL?		X	L			1000 - 200
(6	01	Laboratory control samples (LCS):		1992		<u>1935</u>	ر في الملية الم	- अर्थनी -
		Were all COCs included in the LCS?		X				<u> </u>
		Was each LCS taken through the entire analytical procedure	e, including prep and cleanup steps?	X		ļ	<u>.</u>	<u> </u>
		Were LCSs analyzed at the required frequency?	·	X				
		Were LCS (and LCSD, if applicable) %Rs within the labora	atory QC limits?	<u>  X</u>	<u> </u>			<u> </u>
		Does the detectability data document the laboratory's capabi	ility to detect the COCs at the MDL	ł	1	X		
		used to calculate the SQLs?	·	<u> </u>			· .	
		Was the LCSD RPD within QC limits?	·	<u> </u>		X		<u> </u>
<b>(</b> 7	01	Matrix spike (MS) and matrix spike duplicate (MSD) da	nta		1223	195		1.1988
		Were the project/method specified analytes included in the	MS and MSD?	<u> </u>			<u>X</u>	2
		Were MS/MSD analyzed at the appropriate frequency?		ļ	ļ	ļ	X	ļ
		Were MS (and MSD, if applicable) %Rs within the laborato	ory QC limits?	ļ	L		X	<u> </u>
		Were MS/MSD RPDs within laboratory QC limits?		<u> </u>	· .	<u> </u>	X	
<u>88</u>	OI	Analytical duplicate data			1.00		33	
		Were appropriate analytical duplicates analyzed for each ma	atrix?		·	<u>x</u>		
		Were analytical duplicates analyzed at the appropriate frequ	iency?			X		
		Were RPDs or relative standard deviations within the labora	atory QC limits?	<u> </u>	L	X		
9	OI	Method quantitation limits (MQLs):		1.00	eka.			
		Are the MQLs for each method analyte included in the labo	pratory data package?	<u>  X</u>	<u> </u>	L		<u> </u>
	l	Do the MQLs correspond to the concentration of the lowest	non-zero calibration standard?	X	I	ļ	<u> </u>	L
	L	Are unadjusted MQLs included in the laboratory data packa	nge?	X				
<b>R10</b>	OI	Other problems/anomalies			8618) 81	232	1980	18 <b>-</b> -
		Are all known problems/anomalies/special conditions noted	in this LRC and ER?	X				
	l	Were all necessary corrective actions performed for the repo	orted data?	X				
		Was applicable and available technology used to lower the S	SQL to minimize the matrix interference	X				1
		affects on the sample results?			<u> </u>		L	

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 2.

3.

NA = Not applicable; NR = Not reviewed;

4. 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

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Lab	orato	ry Name: STL-Houston	Date: 09/27/04				1.7	. :
ro	ject N	Jame: UPRR-HWPW-0014419 60 Labor	atory Job Number: 281147			-	•	•
≷ev	iewe	r Name: I G Pren 1	Batch Number(s): 110850-SV SIM	1.1			·	
			Sater Rumber(S). 110850-57 Shv		<b>b</b> 7.	12123	12104	Inn
#.		Description		Yes	NO	NA'	NK.	ER#
51	01	Initial calibration (ICAL)		्यस्ट्	- 1977	1948	- ALEAR	22
		Were response factors and/or relative response factors for each ana	lyte 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				<u> </u>
		were all points generated between the lowest and highest standard	used to calculate the curve?	X	· ·			<u> </u>
		Are ICAL data available for all instruments used?	1 1 10					
12		Has the initial calibration curve been verified using an appropriate	second source standard?	X	The second	lit mart	. Statistics	
2		Initial and continuing calibration verification (ICCV and CCV	) and continuing calibration	<u></u>		and set		
		was the CCV analyzed at the method-required frequency?						
		Were percent differences for each analyte within the method-requi	ed QC limits?	X				ļ
	1	was the ICAL curve verified for each analyte?				. 	· · · · · ·	<u> </u>
10	<u> </u>	was the absolute value of the analyte concentration in the inorgani	CCB < MDL?		L			 
55	μ	Mass spectral tuning:		14200			29.638.	14.5
	· ·	Was the appropriate compound for the method used for tuning?	· · · · · · · · · · · · · · · · · · ·	X				
		Were ion abundance data within the method-required QC limits?		X				L.,
54	0	Internal standards (IS):		لمقتله	2 and	in the	Same,	م م
		Were IS area counts and retention times within the method-require	d QC limits?		X	<u> </u>	· ·	3
55	OI	Raw data (NELAC section 1 appendix A glossary, and section :	5.12 or ISO/IEC 17025 section	200		Station .		
		Were the raw data (for example, chromatograms, spectral data) rev	iewed by an analyst?	X				
·		Were data associated with manual integrations flagged on the raw	lata?	X				
56	0	Dual column confirmation			2.2	2.5	1024	1
÷.,		Did dual column confirmation results meet the method-required Q	<u> </u>			Х		
57	0	Tentatively identified compounds (TICs):		323	-3%)	1.10	S. A	
		If TICs were requested, were the mass spectra and TIC data subject	t to appropriate checks?			X		
58	I	Interference Check Sample (ICS) results:		1943			2388	20
		Were percent recoveries within method QC limits?	· · · · · · · · · · · · · · · · · · ·			X		
<u>59</u>	I	Serial dilutions, post digestion spikes, and method of standard	additions	顶城	RE.	ETT.	· 探索:	0,35
		Were percent differences, recoveries, and the linearity within the Q	C limits specified in the method?			X		
510	OI	Method detection limit (MDL) studies		38.55	2000	(32枚)	3893.Y	18%
		Was a MDL study performed for each reported analyte?	······································	X		· ·		
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
511	OI	Proficiency test reports:		Ser Co.	200	Sec.Se	E Contra	2.2
		Was the laboratory's performance acceptable on the applicable pro	ficiency tests or evaluation studies?	X				
512	OI	Standards documentation		100	<u>1997</u>	A COL	34633	1
•		Are all standards used in the analyses NIST-traceable or obtained t	rom other appropriate sources?	X	i			1
513	OI	Compound/analyte identification procedures		No.	1.2	1.	5.621	22
		Are the procedures for compound/analyte identification documente	d?	X				
514	OI	Demonstration of analyst competency (DOC)		18.2	1992	Fazzi	1000	
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/I	EC 4?	X				·
		Is documentation of the analyst's competency up-to-date and on fil	e?	x				
515	IOI	Verification/validation documentation for methods (NELAC C	ap 5 or ISO/IEC 17025 Section 5)	1.220		1999	1003	8
		Are all the methods used to generate the data documented, verified	and validated, where applicable?	x		and and the first of the		
516	OT	Laboratory standard operating procedures (SOPs).	· · · · · · · · · · · · · · · · · · ·	- 2	1.5 8.5	19. j. 19. j. j. 19. j. j. 19. j. j. 19. j. 19. 19. j. j. 19.	gape. It	.8
	<u> </u>	Are laboratory SOPs current and on file for each method performe	1?	X	<u>- 3988</u> -		i . i . i . i . i .	
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O = organic analyses; I = inorganic analyses (and general chemistry, when applicable). NA = Not applicable. NR = Not Reviewed. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked). 5

A2

Apper	ndix A (cont'd): Laboratory Review Checklist:	Exception Reports
Laborat	ory Name: STL-Houston	LRC Date: 09/27/04
Project	Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147
Review	er Name: LG	Prep Batch Number(s): 110850-SV SIM
ER # <sup>1</sup>	DESCRIPTION	
1	The nitrobenzene-d5 surrogate recovery in sample 28	1147-1 was above acceptance limits due to matrix interference.
2	Since no client sample was designated as the MS/MS	D, the selected two samples from another client.
3	The phenanthrene-d10, chrysene-d12, and perylene-d	12 internal standard areas in sample 281147-1 were below acceptance
	limits. Per method requirements no corrective action	was necessary.

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

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Ap	pen	dix A (cont'd): Laboratory Review Checklis	: Reportable Data	· · ·		<u> </u>	×1.	
Labo	orator	ry Name: STL-Houston LRC I	Date: 09/27/04			· .		•
Proj	ect N	ame: UPRR-HWPW-0014419 60 Labora	tory Job Number: 281147			- -	- 1	•
Revi	iewer	Name: LG Prep B	atch Number(s): 110489-SV	- <u>-</u> -		2.1		
# <sup>1</sup>	A <sup>2</sup>			Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER#
		Chain-of-custody (C-O-C)		222	Site.	<u>18</u>	45	
101	OT	Did samples meet the laboratory's standard conditions of samp	le accentability upon receint?	Y	2.2.3.9.00	1.42. 8-		. 46141A
<b>KI</b>		Were all departures from standard conditions described in an e	xception report?	<u>.</u>		x		
DO		Samely and malify an even block of the station		- 14 <b>8</b> - 500	- X. Y. G. C.		- for the	A. S.
<u>K2</u>		Sample and quality control (QC) identification	om ID numbers?	<u> </u>	1999	NACE.	38899 1	5.3010
		Are all laboratory ID numbers cross-referenced to the correspo	nding OC date?	A X				
R3	σ	Test reports	nunig QC data?	<u>^</u>		1010	999 (P	1999 Q
<u></u>	<u></u>	Were all samples prepared and analyzed within holding times?		Y	23.52	202000	1963 F.J.F	1.15.3
		Where the those results $\leq MOL$ were all other raw values brack	keted by calibration standards?	X	•			
		Were calculations checked by a peer or supervisor?	Reced by canoration standards	x				
	· ·	Were all analyte identifications checked by a peer or supervisor	r?	X				
		Were sample quantitation limits reported for all analytes not de	tected?	X				
	·	Were all results for soil and sediment samples reported on a dr	y weight basis?			x		
		Were % moisture (or solids) reported for all soil and sediment	samples?			X		
		If required for the project, TICs reported?				x		
R4	0	Surrogate recovery data	•			200		
		Were surrogates added prior to extraction?		Х				
		Were surrogate percent recoveries in all samples within the lab	oratory QC limits?		X	_		1,2
R5	OI	Test reports/summary forms for blank samples		465	853) SES	-0.4		1.25
		Were appropriate type(s) of blanks analyzed?		Х				
		Were blanks analyzed at the appropriate frequency?		Х				
		Were method blanks taken through the entire analytical proces	s, including preparation and, if	Х				
	1	applicable, cleanup procedures?						
		Were blank concentrations < MQL?		Х				
R6	OI	Laboratory control samples (LCS):	•	33.	S.S.	85		100
	•	Were all COCs included in the LCS?		Х				
		Was each LCS taken through the entire analytical procedure, in	cluding prep and cleanup steps?	X				
	1	Were LCSs analyzed at the required frequency?		X				
		Were LCS (and LCSD, if applicable) %Rs within the laborator	y QC limits?	<u>X</u>				
		Does the detectability data document the laboratory's capability	v to detect the COCs at the MDL	· .		х		
	·	used to calculate the SQLs?				v		
D7		Was the LCSD RPD within QC limits?	· · ·	22.2	in march	<b>^</b>	2121200	ي. نور و دو
<u>K/</u>		Watrix spike (WS) and matrix spike duplicate (WSD) data	and MSD2	्यसम्	1.11.20.20	3.965	V	2
		Were MS/MSD analyzed at the appropriate frequency?					X	5
		Were MS (and MSD if applicable) % Ps within the laboratory	OC limits?				x X	
		Were MS/MSD RPDs within laboratory OC limits?					x	
R8	σ	Analytical dunlicate data	······································	1.00		876		
		Were appropriate analytical duplicates analyzed for each matri	x?	13927.	-52-0	x		1.516.1.55
	1	Were analytical duplicates analyzed at the appropriate frequen	cv?			x		
		Were RPDs or relative standard deviations within the laborator	v OC limits?			x		,
R9	OI	Method quantitation limits (MOLs):		37	8. C	- 28. si.	No.	- \$2.50
	<u> </u>	Are the MQLs for each method analyte included in the laborat	ory data package?	Х				
		Do the MQLs correspond to the concentration of the lowest no	n-zero calibration standard?	X	· · ·			
	l i	Are unadjusted MQLs included in the laboratory data package	?	Х				
R10	OI	Other problems/anomalies			<i>768</i>	1.577 (c) 1.577 (c) 1.577 (c)	1997-1 1997-1	S. S
		Are all known problems/anomalies/special conditions noted in	this LRC and ER?	Х		· ·		
Ι.		Were all necessary corrective actions performed for the reported	d data?	Χ				
		Was applicable and available technology used to lower the SQ	L to minimize the matrix interference	Х				4
		affects on the sample results?						

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.
 = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
 NA = Not applicable;

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NR = Not reviewed; ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked). 5.

A1

Lab	orato	ry Name: STL-Houston LR	C Date: 09/27/04					
Pro	ect N	Jame: UPRR-HWPW-0014419 60	poratory Job Number: 281147					
Dev	iouvor	·Name: I.G.	n Batch Number(s): 110480-SV					
	10 001		p Bateli Nulliber(5). 110489-5 V	1.7	37-	1 1 1 3	12004	TED#
#.	A <sup>-</sup>			res	INO	INA	INK.	EK#
51	0I	Initial calibration (ICAL)		3909. •••		14948)	<u></u>	1 200.00
		Were response factors and/or relative response factors for each a	nalyte within OC limits?					
		Were percent RSDs or correlation coefficient criteria met?		X				·{
		was the number of standards recommended in the method used	tor all analytes?	X			· · · ·	
		were all points generated between the lowest and highest standa	rd used to calculate the curve?			<b> </b>		
		Are ICAL data available for all instruments used?	+ 1+- 110		· · ·		──	
67	TO	Has the initial calibration curve been verified using an appropria	te second source standard?	X		1. 1. S. A.		
54	U	Initial and continuing calibration verification (ICCV and CC	v) and continuing calibration	V.				Carlor Climaters
		was the CCV analyzed at the method-required frequency?						
		Were percent differences for each analyte within the method-req	uired QC limits?			<b> </b>	<u> </u>	<del> </del>
		Was the ICAL curve verified for each analyte?					<u> </u>	
67	0	Was the absolute value of the analyte concentration in the inorga	inic CCB < MDL?					
55	0	Mass spectral tuning:		47	(	1986.01	1 Clark	1.00
		Was the appropriate compound for the method used for tuning?	······-					
	0	Were ion abundance data within the method-required QC limits			1.213			
54	0	Internal standards (IS):		1			بالمنتخفة فالمرا	
	07	Were IS area counts and retention times within the method-requ	ired QC limits?	X		1		<u> </u>
55	01	Raw data (NELAC section 1 appendix A glossary, and sectio	n 5.12 or ISO/IEC 17025 section		alisen.		an a	
		Were the raw data (for example, chromatograms, spectral data) i	eviewed by an analyst?			<u> </u>		+
~		Were data associated with manual integrations flagged on the ra	w data?	X		<u> </u>		
56	0	Dual column confirmation					12302	0.8 %
~-	-	Did dual column confirmation results meet the method-required	QC?	<b>.</b>		X		
<b>S</b> 7	0	Tentatively identified compounds (TICs):		220	1920	<u> (1997)</u>		122.5
	_	If TICs were requested, were the mass spectra and TIC data sub	ect to appropriate checks?	<u> </u>		<u>. X</u>		+
<u>58</u>	1	Interference Check Sample (ICS) results:	· · · · · · · · · · · · · · · · · · ·	<u> </u>	110 M. 120 M.	135.66	1 de terres de la compañía de la com	
~~	-	Were percent recoveries within method QC limits?	· · · · · · · · · · · · · · · · · · ·	1		X		<u> </u>
<u>\$9</u>	I	Serial dilutions, post digestion spikes, and method of standar	d additions					123
		Were percent differences, recoveries, and the linearity within the	e QC limits specified in the method?				<u> </u>	<u> </u>
<u>S10</u>	OI	Method detection limit (MDL) studies			35	12.42	1323	
		Was a MDL study performed for each reported analyte?			ļ	ļ	ļ	<u> </u>
		Is the MDL either adjusted or supported by the analysis of DCS:	s?					
<u>S11</u>	OI	Proficiency test reports:					Same	- Dissie
		Was the laboratory's performance acceptable on the applicable p	roficiency tests or evaluation studies?	X		<u> </u>		<u> </u>
S12	OI	Standards documentation	·			2 Martin		. <u>199</u>
		Are all standards used in the analyses NIST-traceable or obtaine	d from other appropriate sources?	X		L		
S13	OI	Compound/analyte identification procedures				المنعدة ا	1	
		Are the procedures for compound/analyte identification docume	nted?	X		<u> </u>	ļ	
S14	OI	Demonstration of analyst competency (DOC)	· · ·	-		1.1.2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1		. in section
		Was DOC conducted consistent with NELAC Chapter 5C or ISC	D/IEC 4?	X		<u> </u>	ļ	
	_	Is documentation of the analyst's competency up-to-date and on	file?	X				<u> </u>
S15	OI	Verification/validation documentation for methods (NELAC	Chap 5 or ISO/IEC 17025 Section 5)			12.5	1.353	
		Are all the methods used to generate the data documented, verifi	ed, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs):	•				1993	
		And laborate and GOD and the day of the first state of the state of th	10	1 37		1	1	

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.

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NR = Not Reviewed.

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

Appen	idix A (cont'd): Laboratory Review Checklist:	Exception Reports	
Laborat	ory Name: STL-Houston	LRC Date: 09/27/04	
Project	Name: UPRR-HWPW-0014419 60	Laboratory Job Number: 281147	
Review	er Name: LG	Prep Batch Number(s): 110489-SV	
ER # <sup>1</sup>	DESCRIPTION		·····
1	Seven surrogate recoveries were above acceptance lir	nits due to the dilutions necessary for analyses.	· · · · · · · · · · · · · · · · · · ·
2	The 2,4,6-tribromophenol surrogate recovery was about affect the quality of reported results.	ove acceptance limits in the method blank. This hi	gh recovery will not
3.	Since no client sample was designated as the MS/MS	D, the laboratory selected two samples from anothe	er client.
4	One or more SQLs in all client samples were elevated	due to the dilutions necessary for analyses.	
4	One or more SQLs in all client samples were elevated	I due to the dilutions necessary for analyses.	

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

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ID REPORT TO	Chris Young	INVOICE AT	TN	Geoff	Reed	der			•	GH											
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MP NO. SAMP	PLE DESCRIPTION		PRESE	RVE	ः <b>F</b>	SAMPLE MA	<b>FRIX</b>	SAMPLE	DATES		ſIME	# CONTAINER	АВ		EF	Gŀ	11 1	IKI	LMI	10 P	QRS
M	1W-03-25A04		· · ·			nater		9-15	-04	849	3	7.	$\mathbb{X}$	$\mathbb{N}$							
2 M	1W-lox-25A04					Water			_	850	<b>)</b>		XX	X							
3 <u>N</u>	1W-02-25A04					nater			-	942	2	7.	XX	X							
4 P	2-11-25A04					nalei				953	3	7	XX	X							
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PROJECT:	1	CARRIER/DRIV UNPACKED BY	ER NAME. W		<del></del> _
		UNPACKED	MP. 7mil CCD TT		
OTAL # COOLERS RECEIVED:	2 COOLER CHE	ECKLIST	2001 001 12	7 m 4 UY	
COOLER ID COC OLI CUS PRESENT (Y/N) PRESEN (Y/N) PRESEN	JT INTACT (Y/N)	THERM TEMP ID PRES (Y)	PBLK List Sampl SENT out of Tem N)	e Bottles in Each Coole perature	·if
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					,
		JOB NU		51147	
PECIFIC PROJECT INFORMATION DLATILE HE ADSPACE ACCEPTABLE? ` ANY headspace is present, list details in INCC 1 OF WATER SAMPLES PRE SERVATION # 2SO4 (<2) VO3 (<2) L1 (<2) (Not VOA Vials) 10H - Cyanīde (>12) 10H/Zn Acetate - Sulfide (>9) her DF NEAT BOTTLES:	Yes No NA DNSISTENCIES section)	JOB NU Marked / Number pH If N, L	MBER:As Preserved? Ye of VOA Vials: ist sample ID an	Corresponding ph	
PECIFIC PROJECT INFORMATION DLATILE HE ADSPACE ACCEPTABLE? ' ANY headspace is present, list details in INCC 1 OF WATER SAMPLES PRESERVATION # 2SO4 (<2) NO3 (<2) CL (<2) (Not VOA Vials) 10H - Cyanī de (>12) 10H/Zn Acetate - Sulfide (>9) Cher DF NEAT BOTTLES: )IU NOH WOAVIALS	Yes No NA DNSISTENCIES section)	JOB NU Marked / Number PH If N, L # OF SO	MBER: As Preserved? Ye of VOA Vials: ist sample ID an IL JARS:	Corresponding ph	- 
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rpjsckl	Job Sample Receipt Checklist Report				. Vi
Job Number.: 281147 Location.: 57 Customer Job ID: Project Number.: 99000484 Project D Customer: ERM Southwest, Inc	216 Check List Number.: 1 Description.: Job Check List Date.: escription.: UPRR-HWPW-0014419/60 Houston Contact.: Chris Young		Date of Project	the Report: Manager:	: 09/15/2004 : sgk
Questions ?	(Y/N) Comments			· · ·	
Chain of Custody Received?	······Y		•		
If "yes", completed properly?	Y				
Custody seal on shipping container?	N				
If "yes", custody seal intact?	••••••				
Custody seals on sample containers?	N				
If "yes", custody seal intact?	••••••••••••••••••••••••••••••••••••••				• • • •
Samples chilled?	Y				
Temperature of cooler acceptable? (4	deg C +/- 2). Y 2.4,2.9				
If "no", is sample an air matrix?(	no temp req.)		· · · · ·		۰.
Thermometer ID	ү 368	ана са 1		•	
Samples received intact (good conditi	on)? Y		۰		
Volatile samples acceptable? (no head	space)Y				
Correct containers used?	······ Y			•	
Adequate sample volume provided?	Y	1			1. s. a. •
Samples preserved correctly?					
Samples received within holding-time?	, WO		•	• •	
Agreement between COC and sample labe	νls?Υ Λ				
Radioactivity at or below background	levels?Y				
Additional			. •		
Comments	$\sim$	. 1 A	t in the		
Sample Custodian Signature/Date	Y ACR			•	
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b Number: 281147	e data a e	TRRP	L	abor	atory '	Test F	Results	5		D٤	ate: 1	0/6/20	04
JSTOMER: ERM Southwest, Inc Ho	uston	PROJ	ECI	: UPR	R-HWPW-(	0014419 6	0	ATTN	: Chris You	ing			
ustomer Sample ID: MW-03 ate/Time Sampled	8-2SA04 04 8:48 04 16:02			· · ·			Laborato Sample I	ory Sample ID: Matrix:	281147-00 Water	1			
TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	te/Time	Batch	D.F.	Analys
ethod: SW-846 8260B, Water							i e se						
2-Dichloroethane	107-06-2	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004	20:19	111223	1	zfl
enzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	9/21/2004	20:19	111223	1	zfl
nlorobenzene	108-90-7	0.00155	U	- -	0.00155	0.005	0.00155	mg/L	9/21/2004	20:19	111223	1	zfl
hylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	9/21/2004	20:19	111223	1	zfl
ethylene Chloride	75-09-2	0.00136	J	и	0.0013	0.005	0.0013	mg/L	9/21/2004	20:19	111223	1	zfl
oluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004	20:19	111223	1	zfl
ylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	9/21/2004	20:19	111223	1	zfl
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Form I

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Job Number: 281147		TRRP	L	aboı	atory '	Test I	Results	3	a Alian Alia	Da	ate: 1	0/6/20	04	
CUSTOMER: ERM Southwest, Inc Ho	uston	PROJ	EC	Γ: UPR	R-HWPW-(	0014419 6	0	ATTN	: Chris You	ng				
Customer Sample ID: MW-03	3-2SA04						Laborato	ry Sample ID:	281147-001	l		•		
Date/Time Sampled 9/15/20	004 8:48						Sample M	Matrixi	Water					
Date/Time Received 9/15/20	16:02											· .		
TEST METHOD	CAS#	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date	e/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water		inni georgian Mangalan	1.15		Marin Marine S					alla anna anna 1923 - Sanna 1924 - Sanna Anna Anna			Anadrine Angeless Angeless	10/24
1,2-Diphenylhydrazine	122-66-7	0.000011	υ	uJ	0.000011	0.0001	0.000011	mg/L	9/21/2004	14:01	111554	1	lg1	isc
2,4-Dimethylphenol	105-67-9	0.000117	U	ut	0.000122	0.0005	0.000117	mg/L	9/21/2004	19:52	111563	1	lg1	use.
2,4-Dinitrotoluene	121-14-2	0.000009	υ	ut	0.000009	0.0001	0.000009	mg/L	9/21/2004	14:01	111554	1	lg1	IBL
2,6-Dinitrotoluene	606-20-2	0.000026	U	W	0.000027	0.0001	0.000026	mg/L	9/21/2004	14:01	111554	1	lg1 ı	Hr.
2-Chloronaphthalene	91-58-7	0.000077	U	• -	0.00008	0.0005	0.000077	mg/L	9/21/2004	19:52	111563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U		0.00031	0.0015	0.000298	mg/L	9/21/2004	19:52	111563	1	lg1	
2-Methylnaphthalene	91-57-6	0.224			0.00007	0.0005	0.00067	mg/L	9/23/2004	12:38	111563	10	lg1	
4-Nitrophenol	100-02-7	0.000288	υ		0.000299	0.0015	0.000288	mg/L	9/21/2004	19:52	111563	1	lg1	]
Acenaphthene	83-32-9	0.00662			0.000078	0.0005	0.000075	mg/L	9/21/2004	19:52	111563	1	lg1	
Acenaphthylene	208-96-8	0.000077 .	U		0.00008	0.0005	0.000077	mg/L	9/21/2004	19:52	111563	1	lg1	
Anthracene	120-12-7	0.000792			0.00013	0.0005	0.000125	mg/L	9/21/2004	19:52	111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000269	U	•	0.00028	0.0005	0.000269	mg/L	9/21/2004	19:52	111563	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U	ut	0.000007	0.0001	0.000007	mg/L	9/21/2004	14:01	111554	1	lg1	as .
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	uτ	0.000009	0.0001	0.000009	mg/L	9/21/2004	14:01	111554	1	lg1 (	iter

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

 Laboratory Sample ID: 281147-001

Sample Matrix .....: Water

TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	0/20/
bis(2-ethylhexyl)phthalate	117-81-7	0.000173	U		0.00018	0.0005	0.000173	mg/L	9/21/2004 19:52	111563	.1.	lg1	01 01/60
Chrysene	218-01-9	0.00009	U	· .	0.000094	0.0005	0.00009	mg/L	9/21/2004 19:52	111563	1	lg1	
Dibenzofuran	132-64-9	0.00391			0.00008	0.0005	0.000077	mg/L	9/21/2004 19:52	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.00076		n	0.00015	0.0005	0.000144	mg/L	9/21/2004 19:52	111563	1	lg1	usen.
Fluoranthene	206-44-0	0.000094	U	ut	0.000098	0.0005	0.000094	mg/L	9/21/2004 19:52	111563	1	lg1	use_
Fluorene	86-73-7	0.0113			0.000071	0.0005	0.000068	mg/L	9/21/2004 19:52	111563	1	lg1	
Naphthalene	91-20-3	0.0425		Г	0.00007	0.0005	0.000067	mg/L	9/21/2004 19:52	111563	1	lg1	UBC_
Nitrobenzene	98-95-3	0.000144	U		0.00015	0.0005	0.000144	mg/L	9/21/2004 19:52	111563	1 ·	lg1	11.5
n-Nitrosodiphenylamine	86-30-6	0.00009	υ		0.000094	0.0005	0.00009	mg/L	9/21/2004 19:52	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	υ	иJ	0.00004	0.0003	0.000038	mg/L	9/21/2004 14:01	111554	1	lg1	con-
Phenanthrene	85-01-8	0.0106		JH	0.000081	0.0005	0.000078	mg/L	9/21/2004 19:52	111563	1	lg1	
Phenol	108-95-2	0.0000962	υ		0.0001	0.0005	p.0000962	2 mg/L	9/21/2004 19:52	111563	1	lg1	un -
Pyrene	129-00-0	0.000392	J		0.000088	0.0005	0.000085	mg/L	9/21/2004 19:52	111563	1	lg1	
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Form I

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SEVERN TRENTS ST	L			· ·						· · · ·		·
Job Number: 281147		TRRP	La	ıbor	atory	Test F	Results	5	D	ate: 1	0/6/20(	)4
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJI	ECT:	UPR	R-HWPW-	00144196	0	ATTN	: Chris Young			Same -
Customer Sample ID:MW-104Date/Time Sampled9/15/200Date/Time Received9/15/200	A-2SA04 04 8:50 04 16:02	- <u>-</u> -					Laborato Sample 1	ory Sample ID: Matrix:	281147-002 Water			
TEST METHOD	CAS #	RESULT	QF	LAG	MDL	MQL	SQL	UNITS -	Analysis Date/Time	Batch	_D.F.	Analyst
Method: SW-846 8260B, Water 1,2-Dichloroethane	107-06-2	0.00136	U U		0.00136	0.005	0.00136	mg/L	9/21/2004 19:52	111223	1 1	zfl
Benzene	71-43-2	0.00143	U.		0.00143	0.005	0.00143	mg/L	9/21/2004 19:52	111223	1	zfl
Chlorobenzene	108-90-7	0.00155	υ		0.00155	0.005	0.00155	mg/L	9/21/2004 19:52	111223	1	zfl
Ethylbenzene	100-41-4	0.00137	υ		0.00137	0.005	0.00137	mg/L	9/21/2004 19:52	111223	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	9/21/2004 19:52	111223	1	zfl
Toluene	108-88-3	0.00136	υ		0.00136	0.005	0.00136	mg/L	9/21/2004 19:52	111223	1	zfl
Xylenes (total)	1330-20-7	0.00441	υ		0.00441	0.015	0.00441	mg/L	9/21/2004 19:52	111223	1.1	zfl
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				х - х								
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Job Number: 281147		TRRP	L	abor	atory '	Гest I	Result	S	I	Date:	0/6/20	04	
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT	: UPR	R-HWPW-(	0144196	i0	ATTN	: Chris Young				
Customer Sample ID: MW-10	A-2SA04	ан на страната и страна Страната и страната и ст					Laborato	ory Sample ID:	281147-002		· · · . . · ·	•	
Date/Time Sampled 9/15/200	)4 8:50						Sample	Matrix:	Water		· · · ·		
Date/Time Received 9/15/20	04 16:02				* * .								
TEST METHOD	CAS#	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Tim	e Batch	D.F	Analyst	
Method: SW-846 8270C, Water			2.48		2634						and the second		hha
1,2-Diphenylhydrazine	122-66-7	0.000011	U	UT	0.000011	0.0001	0.000011	mg/L	9/21/2004 14:29	111554	1	lg1	Jac.
2,4-Dimethylphenol	105-67-9	0.000117	U	ωT	0.000122	0.0005	0.000117	mg/L	9/21/2004 20:19	111563	1	lg1	BL
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 14:29	111554	1	lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	9/21/2004 14:29	111554	1	lg1	2
2-Chloronaphthalene	91-58-7	0.000077	U		0.00008	0.0005	0.000077	mg/L	9/21/2004 20:19	111563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U		0.00031	0.0015	0.000298	mg/L	9/21/2004 20:19	111563	1	lg1	
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	9/21/2004 20:19	111563	1	lg1	
4-Nitrophenol	100-02-7	0.000288	U		0.000299	0.0015	0.000288	mg/L	9/21/2004 20:19	111563	1	lg1	
Acenaphthene	83-32-9	0.106			0.000078	0.0005	0.0003	mg/L	9/23/2004 13:06	111563	4	lg1	
Acenaphthylene	208-96-8	0.00076			0.00008	0.0005	0.000077	mg/L	9/21/2004 20:19	111563	1	lg1	
Anthracene	120-12-7	0.00237			0.00013	0.0005	0.000125	mg/L	9/21/2004 20:19	111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000269	U		0.00028	0.0005	0.000269	mg/L	9/21/2004 20:19	111563	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	9/21/2004 14:29	111554	1	lg1	
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 14:29	111554		lg1	

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Job Number: 281147		TRRP	Lal	boratory	Test I	Result	S	D	)ate: 1	0/6/20	04	
CUSTOMER: ERM Southwest, Inc Ho	iston	PROJ	ECT:	UPRR-HWPW	-0014419 (	60	ATTŅ	: Chris Young				
Customer Sample ID: MW-10 Date/Time Sampled	0A-2SA04 04 8:50 04 16:02		. *			Laborato Sample	ory Sample ID: Matrix:	281147-002 Water		· ·		
TEST METHOD	CAS#	RESULT	Q FI	AG MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000173	U	0.00018	0.0005	0.000173	mg/L	9/21/2004 20:19	111563	1	lg1	0/29/04
Chrysene	218-01-9	0.00009	U	0.000094	0.0005	0.00009	mg/L	9/21/2004 20:19	111563	1	lg1	
Dibenzofuran	132-64-9	0.0391		0.00008	0.0005	0.000077	mg/L	9/21/2004 20:19	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000144	U.	0.00015	0.0005	0.000144	mg/L	9/21/2004 20:19	111563	1	lg1	
Fluoranthene	206-44-0	0.0085	:	5 0.000098	0.0005	0.000094	mg/L	9/21/2004 20:19	111563	1	lg1 t	BL
Fluorene	86-73-7	0.00297		0.00007	0.0005	0.00027	mg/L	9/23/2004 13:06	111563	4	lg1	
Naphthalene	91-20-3	0.000395	J :	5 0.00007	0.0005	0.000067	mg/L	9/21/2004 20:19	111563	1	lg1 i	BL
Nitrobenzene	98-95-3	0.000144	U	0.00015	0.0005	0.000144	mg/L	9/21/2004 20:19	111563	1	lg1	. •
n-Nitrosodiphenylamine	86-30-6	0.00009	U	0.000094	0.0005	0.00009	mg/L	9/21/2004 20:19	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U.	0.00004	0.0003	0.000038	mg/L	9/21/2004 14:29	111554	1	lg1	
Phenanthrene	85-01-8	0.00133	1	TH 0.00008	0.0005	0.000078	mg/L	9/21/2004 20:19	111563	1	lg1 v	BL
Phenol	108-95-2	0.0000962	U	0.0001	0.0005	0.0000962	mg/L	9/21/2004 20:19	111563	1	lg1	
Pyrene	129-00-0	0.00474		0.00008	0.0005	0.000085	mg/L	9/21/2004 20:19	111563	1	lg1	
Form I		· ·	Pa	age 21	<u></u>				_ <b>_</b>		<u></u>	<b>I</b>
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	6310 Rothway [	Drive • Houston	, TX 77	040 • Iel: 713 69	u 4444 • Fax	c: 713 690 56	546 • www.sti-inc.co	m			•	

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Job Number: 281147		TRRP	La	abor	atory	Test F	Result	5		D	ate: 1	0/6/20	04
CUSTOMER: ERM Southwest, Inc Hous	ston	PROJ	ECT	: UPRI	R-HWPW-	0014419 6	0	ATTN	: Chris You	ng			
Customer Sample ID:MW-02-Date/Time Sampled9/15/200Date/Time Received9/15/200	2SA04 4 9:42 4 16:02		·. •.	•			Laborato Sample ]	ory Sample ID: Matrix	281147-00. Water	3			
TEST METHOD	CAS#	RESULT	QI	LAG	MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water		<b>PESS</b>	3R-31							ape sz Meges		No. 4 4 2 2	
1,2-Dichloroethane	107-06-2	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004	19:25	111223	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	9/21/2004	19:25	111223	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	9/21/2004	19:25	111223	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	9/21/2004	19:25	111223	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	9/21/2004	19:25	111223	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004	19:25	111223	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	9/21/2004	19:25	111223	1	zfl

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Job Number: 281147		TRRP	L	abor	atory '	Test F	Results	5	•	Da	ate: 1	0/6/20	04	
CUSTOMER: ERM Southwest, Inc Hous	ston	PROJ	ECI	: UPR	R-HWPW-(	00144196	i0	· ATTN	: Chris You	ing				
Customer Sample ID: MW-02- Date/Time Sampled 9/15/200	2SA04 4 9:42	•				•	Laborato Sample 1	ory Sample ID: Matrix	281147-00 Water	3		•	• • • •	
Date/Time Received: 9/15/200	4 16:02					•	T					-	I ta suna a suna a suna a su	
TEST METHOD	CAS#	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	te/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water												Cressienes Cressienes	ankreaders Salatar	9/2910
1,2-Diphenylhydrazine	122-66-7	0.00001	U	WJ	0.000011	0.0001	0.00001	mg/L	9/21/2004	14:57	111554	1	lg1 4	BL
2,4-Dimethylphenol	105-67-9	0.00134		Ъ	0.000122	0.0005	0.000116	mg/L	9/21/2004	20:47	111563	1	ାg1 ଧ	Ka :
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004	14:57	111554	1.	lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	9/21/2004	14:57	111554	1	lg1	
2-Chloronaphthalene	91-58-7	0.000147	J		0.00008	0.0005	0.000076	mg/L	9/21/2004	20:47	111563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	9/21/2004	20:47	111563	1 -	lg1	
2-Methylnaphthalene	91-57 <b>-</b> 6	0.0103			0.00007	0.0005	0.000067	mg/L	9/21/2004	20:47	111563	1	lg1	
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	9/21/2004	20:47	111563	1	lg1	
Acenaphthene	83-32-9	0.0604			0.000078	0.0005	0.00015	mg/L	9/23/2004	13:34	111563	2	lg1	
Acenaphthylene	208-96-8	0.000768		· .	0.00008	0.0005	0.000076	mg/L	9/21/2004	20:47	111563	1	lg1	
Anthracene	120-12-7	0.00218			0.00013	0.0005	0.000124	mg/L	9/21/2004	20:47	111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	9/21/2004	20:47	111563	1	lg1	- · . 
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	9/21/2004	14:57	111554	1	lg1	
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004	14:57	111554	1	lg1	

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Job Number: 281147		TRRP	L	aboı	atory '	Test I	Results	5		Date:	10/6/20	04
CUSTOMER: ERM Southwest, Inc Ho	uston	PROJ	ECT	: UPR	R-HWPW-(	00144196	0	ATTN	: Chris Young			
Customer Sample ID: MW-0	2-2SA04		. <sup>1</sup> .				Laborato	ory Sample ID:	281147-003		•	
Date/Time Sampled: 9/15/2	004 9:42		• •				Sample	Matrix:	Water		• • •	
Date/Time Received: 9/15/2	004 16:02	· · · ·	•				- -		· · · · · ·			
TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/T	ime Batch	D.F.	Analys
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U		0.00018	0.0005	0.000172	mg/L	9/21/2004 20	47 111563	1	lg1
Chrysene	218-01-9	. 0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 20	47 111563	1	lg1
Dibenzofuran	132-64-9	0.0302			0.00008	0.0005	0.000076	mg/L	9/21/2004 20	47 111563	1	lg1
Di-n-butyl Phthalate	84-74-2	0.000519		u	0.00015	0.0005	0.000143	mg/L	9/21/2004 20	47 111563	1	lg1
luoranthene	206-44-0	0.00202		J	0.000098	0.0005	0.000093	mg/L	9/21/2004 20	47 111563	1	lg1
fluorene	86-73-7	0.0328			0.000071	0.0005	0.000068	mg/L	9/21/2004 20	47 111563	1	lg1
Japhthalene	91-20-3	0.0555		J	0.00007	0.0005	0.00013	mg/L	9/23/2004 13	34 111563	2	lg1
Vitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	9/21/2004 20	47 111563	1	lg1
-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 20	47 111563	1	lg1
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	9/21/2004 14	57 111554	1	lg1
Phenanthrene	85-01-8	0.00554		JH	0.000081	0.0005	0.000077	mg/L	9/21/2004 20	47 111563	1	lg1
Phenol	108-95-2	0.0000953	U	•	0.0001	0.0005	0.0000953	mg/L	9/21/2004 20	47 111563	1	lg1
yrene	129-00-0	0.00122			0.000088	0.0005	0.000084	mg/L	9/21/2004 20	47 111563	1	lg1
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L-1 N. 1. 001147	•	TRRP	L	abor	ratory	Test F	Result	S		~		010/00	04
Job Number: 281147		DPOI	POI	. 1100	D LIWDW	0014410 6	ò 👋		· Chris Voi	Da	ate: 1	0/6/20	04
	Stoll	i KOJ		UTK.	N-11 W I W-	0014419.0	0	AIII	, Qui is 100	mg			
Customer Sample ID: P-11-2SA	404						Laborato	bry Sample ID:	281147-00	4			
Date/Time Sampled	9:53						Sample	Matrix:	Water				
Date/11me Received 9/15/200	4 16:02												
TEST METHOD	,CAS#	RESULT	Q	FLAG	MDL	MQL	SQL.	UNITS	Analysis Dat	te/Time	Batch	्D.F.	Analyst
Method: SW-846 8260B, Water			1214 1216 1216		HERE G			The second part					
1,2-Dichloroethane	107-06-2	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004	18:02	111223	1	zfl
Benzene	71-43-2	0.00143	U	1971 - E. 1	0.00143	0.005	0.00143	mg/L	9/21/2004	18:02	111223	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	9/21/2004	18:02	111223	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	9/21/2004	18:02	111223	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	9/21/2004	18:02	111223	. 1.	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004	18:02	111223	1 :	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	9/21/2004	18:02	111223	1	zfl
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Job Number: 281147		TRRP	L	aboı	atory	Test F	Results	S		Da	ate: 1	0/6/20	04	
CUSTOMER: ERM Southwest, Inc Ho	uston	PROJ	ÉĊΊ	: UPR	R-HWPW-	0014419 6	0	ATTN	: Chris You	ng				
Customer Sample ID: P-11-2 Date/Time Sampled	SA04 904 9:53						Laborato Sample ]	ory Sample ID: Matrix:	281147-004 Water	1				
TEST METHOD	CAS#	RESULT	0	FLAG	MDL	MOL	SOL	UNITS	Analysis Date	e/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water		RESS.	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1						I State					0/24/0
1,2-Diphenylhydrazine	122-66-7	0.000011	U	иJ	0.000011	0.0001	0.000011	mg/L	9/21/2004	15:25	111554	1	lg1	ion
2,4-Dimethylphenol	105-67-9	0.000117	U	UJ	0.000122	0.0005	0.000117	mg/L	9/21/2004	21:15	111563	1	lg1	UBL
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004	15:25	111554	1	lg1	n in station Na Station Na Station
2,6-Dinitrotoluene	606-20-2	0.000026	ש		0.000027	0.0001	0.000026	mg/L	9/21/2004	15:25	111554	1	lg1	
2-Chloronaphthalene	91-58-7	0.000077	υ	•	0.00008	0.0005	0.000077	mg/L	9/21/2004	21:15	111563	1 ·	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U		0.00031	0.0015	0.000298	mg/L	9/21/2004	21:15	111563	1	lg1	
2-Methylnaphthalene	91-57-6	0.00152			0.00007	0.0005	0.000067	mg/L	9/21/2004	21:15	111563	1	lg1	
4-Nitrophenol	100-02-7	0.000288	υ		0.000299	0.0015	0.000288	mg/L	9/21/2004	21:15	111563	1	lgl	
Acenaphthene	83-32-9	0.151		-2 •	0.000078	0.0005	0.00075	mg/L	9/23/2004	14:02	111563	10	lg1	
Acenaphthylene	208-96-8	0.000077	υ	••••	0.00008	0.0005	0.000077	mg/L	9/21/2004	21:15	111563	1	lg1	
Anthracene	120-12-7	0.00666			0.00013	0.0005	0.000125	mg/L	9/21/2004	21:15	111563	5- <b>1</b> 1	lg1	
Benzo(a)anthracene	56-55-3	0.000269	U		0.00028	0.0005	0.000269	mg/L	9/21/2004	21:15	111563	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	9/21/2004	15:25	111554	1	lg1	
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	•	0.000009	0.0001	0.000009	mg/L	9/21/2004	15:25	111554	1	lg1	

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SEVERN MTRENT	STL

Job Number: 281147		TRRP	L	aboı	atory '	Test I	Result	S		Date: 1	10/6/20	04	
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT	: UPR	R-HWPW-(	00144196	iO · . ,	ATTN	: Chris Young 🖉				
Customer Sample ID: P-11-2S.	A04					· · ·	Laborato	ory Sample ID:	281147-004		· ·	•	
Date/Time Sampled 9/15/200 Date/Time Received 9/15/200	)4 9:33 )4 16:02						Sample		water				
TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Tin	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000173	U		0.00018	0.0005	0.000173	mg/L	9/21/2004 21:1:	5 111563	1	lg1	<i>\$72</i> 4/6 <i>4</i>
Chrysene	218-01-9	0.00009	U	•	0.000094	0.0005	0.00009	mg/L	9/21/2004 21:1:	5 111563	1	lg1	
Dibenzofuran	132-64-9	0.00261			0.00008	0.0005	0.000077	mg/L	9/21/2004 21:1:	5 111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000532		u	0.00015	0.0005	0.000144	mg/L	9/21/2004 21:1:	5 111563	1	lg1	usc_
Fluoranthene	206-44-0	0.00635		3	0.000098	0.0005	0.000094	mg/L	9/21/2004 21:1:	5 111563	1	lg1	sc-
Fluorene	86-73-7	0.0643			0.000071	0.0005	0.00068	mg/L	9/23/2004 14:02	2 111563	10	lg1	
Naphthalene	91-20-3	0.364		5	0.00007	0.0005	0.00067	mg/L	9/23/2004 14:02	2 111563	10	lg1	Lac-
Nitrobenzene	98-95-3	0.000144	U		0.00015	0.0005	0.000144	mg/L	9/21/2004 21:1:	5 111563	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/21/2004 21:1:	5 111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	9/21/2004 15:2:	5 111554	1	lg1	
Phenanthrene	85-01-8	0.0352		HT	0.000081	0.0005 ·	0.000078	mg/L	9/21/2004 21:1:	5 111563	1	lg1 (	ec
Phenol	108-95-2	0.0000962	U		0.0001	0.0005	0.0000962	mg/L	9/21/2004 21:1:	5 111563	1	lg1	
Pyrene	129-00-0	0.00375			0.000088	0.0005	0.000085	mg/L	9/21/2004 21:1:	5 111563	1	lg1	
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Job Number: 281147		TRRP	La	abor	ratory	Test F	Results	5		Da	ate: 1	0/6/20	04
CUSTOMER: ERM Southwest, Inc Hous	ton	PROJ	ECT	: UPR	R-HWPW-	0014419 6	0	ATTN	: Chris You	ing	Jaca St		
Customer Sample ID: MW-02D	D-2SA04						Laborato	ory Sample ID:	281147-00	5			- <sup>1</sup> '
Date/Time Sampled 9/15/200	4 10:00				· .		Sample I	Matrix:	Water				
Date/Time Received: 9/15/200	4 16:02								an an taon Taong an tao	а 1		•	
TEST METHOD:	CAS#	RESULT	Q 1	FLAG	MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	D.F	Analys
Method: SW-846 8260B, Water		Souther and	9.5.50 9.5.50							ter 1995) ALLIERS			- ALE CA
1,2-Dichloroethane	107-06-2	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004	17:35	111223	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	9/21/2004	17:35	111223	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	9/21/2004	17:35	111223	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	9/21/2004	17:35	111223	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	9/21/2004	17:35	111223	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	9/21/2004	17:35	111223	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	9/21/2004	17:35	111223	1	zfl
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Job Number: 281147		TRRP	L	abor	atory '	Test F	Result	S	Ľ	ate: 1	0/6/20	04	-
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	EC	T: UPR	R-HWPW-(	0014419 6	0	ATTN	: Chris Young				
Customer Sample ID:MW-021Date/Time Sampled9/15/200Date/Time Received9/15/200	D-2SA04 04 10:00 04 16:02				•		Laborato Sample I	ory Sample ID: Matrix	281147-005 Water	•	· · ·		
TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water			623			de generation States and	1.77.2 de 6. 						10/29/0
1,2-Diphenylhydrazine	122-66-7	0.000011	U	μŢ	0.000011	0.0001	0.000011	mg/L	9/21/2004 15:53	111554	1	lg1	ise
2,4-Dimethylphenol	105-67-9	0.00244		<u>ع</u>	0.000122	0.0005	0.000117	mg/L	9/23/2004 12:11	111563	1	lg1	usc
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 15:53	111554	1	lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	υ		0.000027	0.0001	0.000026	mg/L	9/21/2004 15:53	111554	1	lg1	
2-Chloronaphthalene	91-58-7	0.000077	υ		0.00008	0.0005	0.000077	mg/L	9/23/2004 12:11	111563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U		0.00031	0.0015	0.000298	mg/L	9/23/2004 12:11	111563	1	lg1	
2-Methylnaphthalene	91-57-6	0.00993			0.00007	0.0005	0.000067	mg/L	9/23/2004 12:11	111563	1	lg1	
4-Nitrophenol	100-02-7	0.000288	U		0.000299	0.0015	0.000288	mg/L	9/23/2004 12:11	111563	1	lg1	
Acenaphthene	83-32-9	0.0658	.		0.000078	0.0005	0.00038	mg/L	9/23/2004 14:30	111563	5	lg1	
Acenaphthylene	208-96-8	0.000838			0.00008	0.0005	0.000077	mg/L	9/23/2004 12:11	111563	1	lg1	
Anthracene	120-12-7	0.0024		-	0.00013	0.0005	0.000125	mg/L	9/23/2004 12:11	111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000245			0.00028	0.0005	0.000269	mg/L	9/23/2004 12:11	111563	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	υ		0.000007	0.0001	0.000007	mg/L	9/21/2004 15:53	111554	1	lg1	
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	9/21/2004 15:53	111554	1	lg1	

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Job Number: 281147		TRRP	L	aboı	ratory '	Test I	Result	S		D	ate: 1	0/6/20	04	
CUSTOMER: ERM Southwest, Inc H	ouston	PROJ	EC	Γ: ÚPR	R-HWPW-(	00144196	i0	,ATTN	i: Chris You	ing				
Customer Sample ID:MW-Date/Time Sampled9/15/2Date/Time Received9/15/2	02D-2SA04 2004 10:00 2004 16:02						Laborato Sample ]	ory Sample ID: Matrix:	281147-00 Water	5				
TEST METHOD	CAS#	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Da	te/Time	Batch	D.F.	Analyst	in lage i
bis(2-ethylhexyl)phthalate	117-81-7	0.000675			0.00018	0.0005	0.000173	mg/L	9/23/2004	12:11	111563	1	lg1	0/ 21/64
Chrysene	218-01-9	0.000172	J		0.000094	0.0005	0.00009	mg/L	9/23/2004	12:11	111563	1	lg1	
Dibenzofuran	132-64-9	0.0346		_	0.00008'	0.0005	0.000077	mg/L	9/23/2004	12:11	111563	- 1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000299	J	<u>u</u> .	0.00015	0.0005	0.000144	mg/L	9/23/2004	12:11	111563	1	lg1	(Be
Fluoranthene	206-44-0	0.00283		7	0.000098	0.0005	0.000094	mg/L	9/23/2004	12:11	111563	1	lg1	COC_
Fluorene	86-73-7	0.0387			0.000071	0.0005	0.000068	mg/L	9/23/2004	12:11	111563	1	lgl	ija 1. j
Naphthalene	91-20-3	0.108		5	0.00007	0.0005	0.00034	mg/L	9/23/2004	14:30	111563	5	lg1	Lec.
Nitrobenzene	98-95-3	0.000144	U		0.00015	0.0005	0.000144	mg/L	9/23/2004	12:11	111563	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	9/23/2004	12:11	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	9/21/2004	15:53	111554	<u>1</u>	lg1	
Phenanthrene	85-01-8	0.00573		JH	0.000081	0.0005	0.000078	mg/L	9/23/2004	12:11	111563	1	lg1	UBL-
Phenol	108-95-2	0.0000962	U		0.0001	0.0005	0.0000962	2 mg/L	9/23/2004	12:11	111563	1	lg1	
Pyrene	129-00-0	0.00136	ł		0.000088	0.0005	0.000085	mg/L	9/23/2004	12:11	111563	1	lg1	
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Q L         Job Number.: 281147         CUSTOMER: ERM Southwest, Inc Houston         QC Type         Description         Test Method: SW-846 8270C         Method Description.: Semivolatile Organics -         LCS         Laboratory Control Sample         Parameter/Test Description         QC         Benzo(a)pyrene, Water         2,4-Dinitrotoluene, Water         2,4-Dinitrotoluene, Water         2,6-Dinitrotoluene, Water         1,2-Diohenvlhydrazine, Water	JALITY PROJEC	CONTROL	. RESULT	S		
Q L Job Number.: 281147 CUSTOMER: ERM Southwest, Inc Houston QC Type Description Test Method: SW-846 8270C Method Description.: Semivolatile Organics - LCS Laboratory Control Sample Parameter/Test Description QC Benzo(a)pyrene, Water Dis(2-chloroethoxy)methane, Water 2,4-Dinitrotoluene, Water 2,6-Dinitrotoluene, Water Pentachlorophenol, Water 1,2-Diobenvlhydrazine, Water	JALITY PROJEC	CONTROL	. RESULT	S		
Q L Job Number.: 281147 CUSTOMER: ERM Southwest, Inc Houston QC Type Description Test Method: SW-846 8270C Method Description.: Semivolatile Organics - LCS Laboratory Control Sample Parameter/Test Description QC Denzo(a)pyrene, Water Dis(2-chloroethoxy)methane, Water 2,4-Dinitrotoluene, Water 2-Diobenvlhydrazine Water 2-Diobenvlhydrazine Water	JALITY PROJEC	CONTROL	. RESULT	S		
Q L Job Number.: 281147 CUSTOMER: ERM Southwest, Inc Houston QC Type Description Test Method: SW-846 8270C Method Description.: Semivolatile Organics - LCS Laboratory Control Sample Parameter/Test Description QC Penzo(a)pyrene, Water Dis(2-chloroethoxy)methane, Water .4-Dinitrotoluene, Water .4-Dinitrotoluene, Water 2-Diobenvlhydrazine Water	JALITY PROJEC	CONTROL	. RESULT	S		*
Q L         Job Number.: 281147         CUSTOMER: ERM Southwest, Inc Houston         QC Type       Description         Test Method: SW-846 8270C         Method Description.: Semivolatile Organics -         LCS       Laboratory Control Sample         Parameter/Test Description       QC         Penzo(a)pyrene, Water       0.4	JALITY PROJEC	CONTROL	. RESULT	S		
CUSTOMER: ERM Southwest, Inc Houston QC Type Description Test Method: SW-846 8270C Method Description.: Semivolatile Organics LCS Laboratory Control Sample Parameter/Test Description QC enzo(a)pyrene, Water nis(2-chloroethoxy)methane, Water is(2-chloroethoxy)methane, Water .4-Dinitrotoluene, Water entachlorophenol, Water 2-Diobenvlhydrazine Water	PROJEC			Repor	t Date.: 10/06/	2004
QC Type       Description         Test Method: SW-846 8270C         Method Description.: Semivolatile Organics -         LCS       Laboratory Control Sample         Parameter/Test Description       QC         Benzo(a)pyrene, Water       QC-chloroethoxy)methane, Water         2.4-Dinitrotoluene, Water       QA         2.6-Dinitrotoluene, Water       QA         2-Diobenvlhydrazine       Water		T: UPRR-HWPW-(	0014419 60	ATTN:	Chris Young	
Test Method: SW-846 8270C Method Description.: Semivolatile Organics - LCS Laboratory Control Sample Parameter/Test Description QC Denzo(a)pyrene, Water Dis(2-chloroethoxy)methane, Water 2,4-Dinitrotoluene, Water 2,6-Dinitrotoluene, Water 2-Diobenvlhydrazine Water		Reag. Code	e Lab	ID Dilu	tion Factor	Date Time
Test Method: SW-846 8270C Method Description: Semivolatile Organics LCS Laboratory Control Sample Parameter/Test Description QC Benzo(a)pyrene, Water Dis(2-chloroethoxy)methane, Water 2,4-Dinitrotoluene, Water 2,6-Dinitrotoluene, Water Pentachlorophenol, Water 2-Diobenvlhydrazine Water		I	<u>_</u>			
LCS Laboratory Control Sample Parameter/Test Description Q( Benzo(a)pyrene, Water Dis(2-chloroethoxy)methane, Water 2,4-Dinitrotoluene, Water 2,6-Dinitrotoluene, Water Pentachlorophenol, Water 2-Diobenvlhydrazine Water	SIM Analysi	Units s Batch(s)	): 111554	/L	Analyst.	: lg1
Parameter/Test Description Q( lenzo(a)pyrene, Water bis(2-chloroethoxy)methane, Water .4-Dinitrotoluene, Water .6-Dinitrotoluene, Water eentachlorophenol, Water .2-Diobenvlhydrazine, Water		SVS082504C	110850		0	9/21/2004 1142
enzo(a)pyrene, Water his(2-chloroethoxy)methane, Water ,4-Dinitrotoluene, Water ,6-Dinitrotoluene, Water entachlorophenol, Water ,2-Diohenvlhydrazine, Water	C Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits F
2,4-Dinitrotoluene, Water 2,4-Dinitrotoluene, Water 2,6-Dinitrotoluene, Water 'entachlorophenol, Water .2-Diohenvlhydrazine, Water	0.51670	···· ·	0.500000		103.3	30-130
2,6-Dinitrotoluene, Water Pentachlorophenol, Water 1.2-Diohenvlhydrazine, Water	0.40774		0.500000		81.5 86.1	30-130 60-140
.2-Diohenvlhydrazine. Water	0.43914 0.42691	· · ·	0.500000		87.8 85.4	60-140 30-130
	0.44586		0.500000		89.2	30-130
MB Method Blank		SVS082504B	110850		0	9/21/2004 1114
Parameter/Test Description QC	C Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits F
enzo(a)pyrene, Water is(2-chloroethoxy)methane, Water ,4-Dinitrotoluene, Water	0 0 0					
entachlorophenol, Water	0		<del>.</del> 1			
,2-Diphenylhydrazine, Water	0	•				
MS Matrix Spike		SVS082504C	281075+1	1	0	9/21/2004 1305
Parameter/Test Description QC	C Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits F
enzo(a)pyrene, Water	0.49004	•	0.500000	0	98	30-130
,4-Dinitrotoluene, Water	0.55329		0.500000	0	111	24-96 A
,6-Dinitrotoluene, Water entachlorophenol, Water	0.48768 0.85818		0.500000	0	98 172	30-130 5-103 А
,2-Diphenylhydrazine, Water	0.54337		0.500000	• • • • •	109	60-140
MSD Matrix Spike Duplicate	<u> </u>	SVS082504C	281075-1	2	0	9/21/2004 1333
Parameter/Test Description QC	C Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits F
enzo(a)pyrene, Water	0.51449	0.49004	0.500000	0	103	30.0-130.0
is(2-chloroethoxy)methane, Water	0.40870	0.50587	0.500000	0	82	30.0-130.0
,4-Dinitrotoluene, Water	0.60088	0.55329	0.500000	0	120	24.0-96.0 A
,6-Dinitrotoluene, Water	0.50541	0.48768	0.500000	0	8.2	30.0-130.0
entachlorophenol, Water	0.76910	0.85818	0.500000	0	3.6 154	30.0 5.0-103.0 A
.2-Diphenylhydrazine. Water	0.33961	0.54337	0.500000	D	10.9 68	40.0 60.0-140 0
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Job Number.: 281147	QUALITY	CONTRO	LRE	SULT	S	Report	Date.: 10/0	)6/200	4	•
CUSTOMER: ERM Southwest, Inc Houston	PROJE	T: UPRR-HWPW-	0014419	60		ATTN:				
QC Type Description		Reag. Cod	le	Lab I	D	Dilut	ion Factor	Da	te 1	ິເກ∈
······································		1	<u>_</u>							
Test Method: SW-846 8270C Method Description.: Semivolatile Organ	nics, Low Level	Units Batch(s	s): 11	: ug/ 1563	<b>′</b> L		Analys	;t:	lg1	÷.
LCS Laboratory Control Sample		SVS091004A	1	10849				09/2	1/2004	113
Parameter/Test Description	QC Result	QC Result	True V	alue	Orig. \	/alue	Calc. Resul	.t *	Limits	• •
enaphthene, Water	4.00456		- 5	.000000			80.1		32-165	5
enaphthylene, Water	4.05422		5	.000000			81.1	1.4	10-150	).
thracene, Water	4.85966		5	.000000			97.2	1.1	23-178	3
nzo(a)anthracene, Water	4.19610	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	-, 5	.000000			83.9	•	25-180	ָ
s(2-ethylhexyl)phthalate, Water	4.41038		: 5	.000000			88.2	•	25-173	3
Chloronaphthalene, Water	3.89372		5	.000000			77.9	•	23-143	5
rysene, Water	3.93110		5	.000000			78.6		23-180	
benzofuran, Water	4.06299		5	.000000			81.3		35-153	5
-n-butyl Phthalate, Water	5.14752		5	.000000			103.0	1 <b>1</b> 1	28-185	2
uoranthene, Water	4.43650		5	.000000			88.7		28-180	)
lorene, Water	4.34785		5	.000000			87.0		- 30-185	<b>,</b> .
Methylnaphthalene, Water	3.60317		. 2	.000000			(2.1	1.1	. 26-166	5
phthalene, Water	3.35485		. 5	.000000			67.1		36-135	<u> </u>
trobenzene, Water	3.47882		5	.000000			69.6		17-165	5
Nitrosodiphenylamine, Water	5.32389		5	.000000			106.5	÷.,÷	58-1/4	÷
ienanthrene, Water	4.23165		5	.000000			84.0	•	20-100	5
vrene, Water	4.31889		2	.000000			80.4 57.7	•	20-1/2	7
4-Dimethylphenol, Water	2.00/19			.000000			115 5		10-16/	
Metnyl-4,0-dinitrophenol, water	1 71777	e a di serie di	5	000000			3/ 3		10-10-	•
anal Matan	1 573/2		5	000000			31.5		20-83	
enot, water	1.07042	· · · · · ·					21.2		20 05	•
		0V008350/ F		109/0				00/2	1 /200/	14
MB Method Blank		5750625048		10849				09/2	1/2004	<u>. r</u>
Parameter/Test Description	QC Result	QC Result	True V	alue 	Orig. \	/alue	Calc. Resul	.t * 	Limits	
enaphthene, Water	0									
enaphthylene, Water	U								•	
thracene, Water	U									
nzo(a)anthracene, water	U			•				•	• • •	· •
s(2-etny(nexy))phthalate, water	U .						· · · ·	• .		
unioronaphinalene, water	0				÷ 1		generation of the	• •		۰.
rysene, water horzefunen Unter	0	÷			•					
penzoruran, water 	0 22412								<i></i>	. •
-n-buryt Phinatale, Water Upponthene, Vater	0.22012								1	
uorana Water	0						e de la composition d		•	
uurene, water Nathvinanhthalana Uatar	n a c	•*								
nethythaphthatene, water nhthalana Water	n i	1 - A -						•		
prinarene, maren trobenzene Water	ñ	· .				÷	· · · ·	• •		
Nitrosodinhenvlamine Vater	0									
enanthrene Water	ů l	•		· · ·	÷.					
rene Water	õ			•					•	
4-Dimethylphenol Water	ŏ			•			· · · · · · ·	•		•
Methyl-4.6-dinitrophenol Water	ŏ			÷						
Nitrophenol. Water	ō			*				•		
ienol. Water	Ō								· · .	
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\* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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	QUALITY	CONTROL	. RESULT	S		
Job Number.: 281147		•		Report	Date.: 10/0	6/2004
CUSTOMER: ERM Southwest, Inc Houstor	n PROJEC	T: UPRR-HWPW-C	1014419 60	ATTN:		
QC Type Description	<b>.</b>	Reag. Code	e Lab I	D Diluti	on Factor	Date Time
MS Matrix Spike		SVS091004A	281075-11			09/21/2004 122
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits
cenaphthene, Water	88.3669		5.000000	92.5113	-83	46-118
cenaphthylene, Water	5.57430		5.000000	1.02763	91	30-130
Inthracene, Water	11.1836		5.000000	6.11715	101	30-130
benzo(a)anthracene, water bis(2-ethvlhexvl)phthalate. Water	4,12321		5.000000	0.35260	75	60-140
-Chloronaphthalene, Water	4.66630		5.000000	0	93	30-130
hrysene, Water	4.10248	*	5.000000	0	82	30-130
ibenzofuran, Water	50.9380	• • •	5.000000	49.6673	25	30-130
i-n-butyl Phthalate, Water	5.1/669		5.000000	U 8 08535	104	30-130 30-130
Luorantnene, water Luorene Water	61.2788		5.000000	60.2845	20	30-130
-Methylnaphthalene. Water	5.89842		5.000000	4.37968	30	60-140
aphthalene, Water	4.48265		5.000000	0.46401	80	30-130
itrobenzene, Water	4.89364		5.000000	0	98	30-130
-Nitrosodiphenylamine, Water	6.54763		5.000000	0	131	30-130
henanthrene, Water	4.88579		5.000000	0.79633	82	30-130
yrene, Water V (-Dimothylphonol Votor	3 77352		5.000000	3.55052	09 75	20-115
-Methyl-4 6-dinitrophenol Water	6.91788		5.000000	ů	138	30-130
-Nitrophenol. Water	4.43568		5.000000	õ	89	10-80
Phenol, Water	1.46413		5.000000	0	29	10-112
	•	• •			· .	
MSD Matrix Spike Duplicate		SVS091004A	281075-12			09/21/2004 125
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits
cenaphthene, Water	107.748	88.3669	5.000000	92.5113	305 19.8	46.0-118.0 31.0
cenaphthylene, Water	5.56160	5.57430	5,000000	1.02763	91 0.2	30.0-130.0 50.0
nthracene, Water	11.7313	11.1836	5.000000	6.11715	112 4.8	30.0-130.0 50.0
Benzo(a)anthracene, Water	4.51210	4.60869	5.000000	0	90 2.1	60.0-140.0 50.0
is(2-ethylhexyl)phthalate, Water	4.34205	4.12321	5.000000	0.35260	80 5.2	60.0-140.0 30.0
-Chloronaphthalene, Water	4.65164	4.66630	5,000000	0	93 0.3	30.0-130.0 50.0
Chrysene, Water	4.07302	4.10248	5.000000	0	81 0.7	30.0-130.0 50.0
)ibenzofuran, Water	57.6000	50.9380	5.000000	49.6673	159 12.3	30.0-130.0 50.0
)i-n-butyl Phthalate, Water	5.41441	5.17669	5.000000	0	108 4.5	30.0-130.0 50.0
luoranthene, Water	13.0567	12.4913	5.000000	8.08535	99 4.4	30.0-130.0 50.0

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Page 33

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Fluorene, Water

Naphthalene, Water

Nitrobenzene, Water

2-Methylnaphthalene, Water

30.0-130.0 A

60.0-140.0 A

30.0-130.0 50.0

50.0

30.0 30.0-130.0 50.0

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237 16.3

616 142.6

125 39.6

100 2.1

60.2845

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0.46401

%=% REC, R=RPD, A=ABS Diff., D=% Diff.

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	SEVERN TRENT	L				
Ū	Job Number.: 281147	QUALITY	CONTROL	RESULTS	Report Date.: 10/0	06/2004
	CUSTOMER: ERM Southwest, Inc Houston	PROJEC	T: UPRR-HWPW-0014	419 60	ATTN:	
$\int$	QC Type Description		Reag. Code	Lab ID	Dilution Factor	Date Time
-	MSD Matrix Spike Duplicate		SVS091004A	281075-12		09/21/2004 1255
n	Parameter/Test Description	QC Result	QC Result Tr	ue Value Orig.	Value Calc. Resul	.t * Limits F
<b>U</b>	n-Nitrosodiphenylamine, Water	6.40932	6.54763	5.000000	0 128	30.0-130.0
$\geq$	Phenanthrene, Water	8.91104	4.88579	5.000000	0.79633 162	30.0-130.0 A
$\prod$	Pyrene, Water	8.96119	8.00582	5.000000	58.4 3.55032 108 11 3	50.0 r 26.0-115.0 31.0
	2,4-Dimethylphenol, Water	3.84394	3.77352	5.000000	0 77	30.0-130.0
Π	2-Methyl-4,6-dinitrophenol, Water	6.97188	6.91788	5.000000	0 139	50.0 30.0-130.0 A
Æ	4-Nitrophenol, Water	4.64807	4.43568	5.000000	0 93	10.0-80.0 A
Π	Phenol, Water	1.37655	1.46413	5.000000	4.7 0 28 6.2	50.0 10.0-112.0 23.0
Ļ					0.1	23.0
Ũ	Test Method: SW-846 8260B Method Description.: Volatile Organics		Units Batch(s)	: ug/L : 111223	Analys	st: zfl
Π	LCS Laboratory Control Sample	· · · · · · · · · · · · · · · · · · ·	VS091704E			09/20/2004 1247
	Parameter/Test Description	QC Result	QC Result Tr	ue Value Orig.	Value Calc. Resul	t * Limits F

J	Parameter/Test Description	QC Result	QC Result	frue Value	Orig. Value	Calc. Result	* LIMITS	F
Ī	Benzene, Water	42.9883	-	50.00	ND	86.0	68-127	
9	Chlorobenzene, Water	43.5777		50.00	ND	87.2	65-129	
	1,2-Dichloroethane, Water	43.1296	A second s	50.00	ND	86.3	65-133	· .
	Ethylbenzene, Water	44.4510		50.00	ND	88.9	64-132	
	Methylene Chloride, Water	40.7610		50.00	2.47407	81.5	54-133	
	Toluene, Water	44.1476	11 A.	50.00	ND	88.3	63-127	
	Xylenes (total), Water	132.976	•	150.0	ND	88.7	37-161	

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits F
Benzene, Water	46.7199	· ·	50.00	- ND	93.4	68-127
Chlorobenzene, Water	45.9392		50.00	ND	91.9	65-129
1,2-Dichloroethane, Water	47,9546		50.00	ND ND	95.9	65-133
Ethylbenzene, Water	46.0640		50.00	ND	92.1	64-132
Methylene Chloride, Water	47.0320		50.00	2.86031	94.1	54-133
Toluene, Water	46.2848		50.00	ND	92.6	63-127
Xylenes (total), Water	139.788		150.0	ND	93.2	37-161

	MB Method Blank			VS091704C				09/7	20/2004 1342
Π	Parameter/Test Description		QC Result	QC Result	True Value	Orig. Value	Calc. R	lesult *	Limits 🕤 F
U	Benzene, Water Chlorobenzene, Water	•	ND ND		· . ·	• <u>.</u>		······	· · · · · · · · · · ·
Π	1,2-Dichloroethane, Water Ethylbenzene, Water	•	ND ND				n an thairt An thairtean thairtean An thairtean		

Page 34

\* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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		$\mathcal{L} = \{ \mathcal{L} \}$			• • • • • •	· .
Job Number.: 281147	QUALITY	CONTROL	. RESUL	TS Report	Date.: 10/06,	/2004
CUSTOMER: ERM Southwest, Inc Houston	PROJE	CT: UPRR-HWPW-(	0014419 60	ATTN:		
QC Type Description		Reag. Code	e Lab	ID Dilut	ion Factor	Date Time
MB Method Blank		VS091704C				10/20/200/ 13/2
	OC Basult	OC Decula	Taua Valua			* 11-11-1
					Laic. Result	
Methylene Chloride, Water Toluene, Water Xylenes (total), Water	2.47407 ND ND			· · · · · · · · · · · · · · · · · · ·		
MB Method Blank		VS091704C				09/21/2004 1247
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits F
Benzene, Water	ND		· · ·			· · · · · · · · · · · · · · · · · · ·
Chlorobenzene, Water 1.2-Dichloroethane, Water	ND ND			1997 - 19		
Ethylbenzene, Water	ND				· ·	
Methylene Chloride, Water Toluene, Water	2.86031 ND					
Xylenes (total), Water	ND					
MS Matrix Spike Parameter/Test Description	QC Result	VS091704E QC Result	281083- True Value	3 5.000 Orig. Value	00 Calc. Result	09/20/2004 1816 * Limits F
Benzene, Water	34.5554	· .	50.00	ND	69	65-125
1.2-Dichloroethane. Water	36.6267		50.00	ND ND	68 73	74-122 A 60-140
Ethylbenzene, Water	35.9950	•.	50.00	1.58119	69	60-140
Methylene Chloride, Water Toluene Water	37.4415	• •	50.00	3.54996 17 5311	68 68	60-140 76-125 ∆
Xylenes (total), Water	149.472		150.0	48.0155	68	60-140
MS Matrix Spike		VS091704E	281147-1	5		09/21/2004 1830
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits F
Benzene, Water	44.3904	· · · · · · · · · · · · · · · · · · ·	50.00	ND	89	65-125
1.2-Dichloroethane, Water	43,4925		50.00	ND ND	87	60-140
Ethylbenzene, Water	47.4020		50.00	ND	95	60-140
Methylene Chloride, Water Toluene Water	41.3171		50.00	ND ND	83	60-140 76-125
Xylenes (total), Water	143.877	. •	150.0	4.30733	93	60-140
	·	••••••••••••••••••••••			·	
MSD Matrix Spike Duplicate		VS091704E	281083-:	5,000	00	09/20/2004 1844
Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits F.
Benzene, Water	37.1161	34.5554	50.00	ND	74	65.0-125.0 30.0
Chlorobenzene, Water	37.4296	34.2374	50.00	ND	75	74.0-122.0
1,2-Dichloroethane, Water	39.3715	36.6267	50.00	ND	79 7.2	60.0-140.0 30.0
	and the second				-	
		Dece 75				

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QUALITY CONTROL RESULTS Job Number.: 281147 Report Date.: 10/06/2004

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ĥ	CUSTOMER: ERM Southwest, Ir	c Houston	PROJ	ECT: UPRR-HWPW-I	0014419 60	ATTN:		
'n	QC Type	Description		Reag. Code	e Lab	ID Dilut	ion Factor	Date Time
ų	MSD Matrix Spike D	uplicate		VS091704E	281083-:	5,000	100	09/20/2004 1844
ß	Parameter/Test Descr	iption	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits F
<u>U</u>	Ethylbenzene, Water		38.5740	35,9950	50.00	1.58119	74	60.0-140.0
ß	Methylene Chloride, Water		41.0077	37.4415	50.00	3.54996	6.9 5 75 9.1	30.0 60.0-140.0 30.0
U	Toluene, Water		53.6984	51.7393	50.00	17.5311	72	76.0-125.0 A
r 1	Xylenes (total), Water		157.635	149.472	150.0	48.0155	73 5.3	60.0-140.0 30.0
11							•	a production of a second

	MSD Matrix Spike Duplicate		VS091704E	281147-5	5	0	9/21/2004 1857
N	Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits F
Ĥ	Benzene, Water	47.2020	44.3904	50.00	ND	94	65.0-125.0
Π	Chlorobenzene, Water	47.1168	45.1678	50.00	ND	94	74.0-122.0
Ų	1,2-Dichloroethane, Water	45.7161	43.4925	50.00	ND	91 5.0	60.0-140.0
п	Ethylbenzene, Water	49.6689	47.4020	50.00	ND	99 4.7	60.0-140.0 30.0
Ũ	Methylene Chloride, Water	44.4141	41.3171	50.00	ND	89 7.2	60.0-140.0 30.0
ล	Toluene, Water	48.2905	46.6313	50.00	ND	97 3.5	76.0-125.0 30.0
	Xylenes (total), Water	151.410	143.877	150.0	4.30733	98 5.1	60.0-140.0 30.0

\* %=% REC, R=RPD, A=ABS Diff., D=% Diff.



#### SURROGATE RECOVERIES REPORT

Job Number : 281147

Report Date.: 10/06/2004

CUSTOMER: ERM Southwest, Inc.- Houston

# PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

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Meth Bato	nod ch(s).	•••	<pre>: Volatile Organics: 111223</pre>		Metho Test	d Code Matrix	.: 8260 .: Water	•	Prep B Equipm	atch: ent Code:	GCMSVOA	.06
Lab ID		DT	Sample ID		Date	12DCED	BRFLBE	DBRFLM	TOLD8		:	
281083- 3 281083- 3 281147- 1 281147- 2 281147- 3 281147- 3 281147- 4 281147- 5 281147- 5 281147- 5 281147- 5 11122321 11122321 11122321	MS MSD MSD LCS MB LCS MB		MW-8 MW-03-2SA04 MW-03-2SA04 MW-02-2SA04 P-11-2SA04 MW-02D-2SA04 MW-02D-2SA04 MW-02D-2SA04 MW-02D-2SA04		09/20/2004 09/20/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/20/2004	80.1 82.3 80.5 78.3 80.5 78.9 81.5 75.4 79.4 83.9 83.7 85.0 83.0	114.2 114.3 112.6 107.9 111.9 108.8 111.8 106.6 111.1 116.8 109.7 121.8 115.8	81.5 84.1 81.7 77.8 81.6 80.4 84.0 77.1 81.9 85.5 84.4 86.3 83.6	93.7 92.6 94.1 89.3 92.4 89.0 91.6 88.1 92.8 92.3 91.0 97.5 95.7			
Test	Test	Des	cription	Limits	3					на на селото По селото на селото По селото на селото н По селото на		•
12DCED BRFLBE DBRFLM TOLD8	1,2-D 4-Bro Dibro Tolue	ich mof mof	loroethane-d4 luorobenzene luoromethane d8	70 - 13 70 - 13 70 - 13 70 - 13 70 - 13	30 30 30 30		• •					. •

# Job Number.: 281147

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#### SURROGATE RECOVERIES REPORT

Report Date.: 10/06/2004

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CUSTOMER: 483648

PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

1		Metho Batch	:t.	: Semivolatile	e Organics,	Low Lev	el	Metho Test	od Code Matrix	.: 8270L .: Water	.L	Prep Ba Equipme	tch: ent Code:	110849 Egcms06	•
	Lab ID		DT	Sample ID				Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14	
22 22 22 22 22 22 22 22 22 22 22 22 22	81075- 811075- 81147- 81147- 81147- 81147- 81147- 81147- 81147- 81147- 81147- 81147- 81147- 10849- 10849-	11 M 12 M 1 2 3 3 4 5 5 -21 L -21 M	5 5D 2S 3	MW-01A-2SA04 M3 MW-01-2SA04 M30 MW-03-2SA04 MW-03-2SA04 MW-10A-2SA04 MW-10A-2SA04 MW-02-2SA04 MW-02-2SA04 P-11-2SA04 P-11-2SA04 MW-02D-2SA04 MW-02D-2SA04				09/21/2004 09/21/2004 09/23/2004 09/23/2004 09/23/2004 09/23/2004 09/23/2004 09/23/2004 09/23/2004 09/23/2004 09/23/2004 09/23/2004 09/21/2004	123.9A 127.2A 118.2 204.2d 112.2 120.9 122.7 116.5 112.6 182.4d 118.9 148.9d 119.6 125.0K	94.7 94.7 86.3 113.1 76.8 84.9 91.1 104.9 91.5 103.7 84.9 101.4 78.9 87.3	37.7 38.7 35.4 161.9d 39.9 81.3 41.0 51.7 35.8 163.0d 44.1 94.6 39.7 48.5	90.0 94.3 107.5 64.0 75.5 79.4 95.6 106.2 72.0 78.0 86.1 89.8 75.0 84.4	36.5 34.2 41.3 72.5 24.3 45.5 35.5 44.0 32.3 76.4 37.8 56.6 31.1 32.8	99.7 102.8 107.5 144.2d 95.0 110.9 106.7 108.5 103.3 165.6d 112.1 113.0 92.1 103.6	
ļ	Test	Ť	est De	scription			Limits								•
2 2 2 N PI	46TBP FLUBP FLUPH I TRD5 HEND6 FPD14	2 2 2 N PI	,4,6-T -Fluor -Fluor itrobe	ribromophenol obiphenyl ophenol nzene-d5 d6 vl-d14			10 - 12 43 - 11 21 - 10 35 - 11 10 - 94 33 - 14	 3 6 0 4 1							•••

#### SURROGATE RECOVERIES REPORT

Job Number.: 281147

SEVERN TRENTS STL

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CUSTOMER: 483648

#### PROJECT: UPRR-HWPW-0014419 60

ATTN: Chris Young

Report Date.: 10/06/2004

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Method: Semivolatile Organics Batch(s): 111554	s - SIM Ar	nalysis	Metho Test	od Code Matrix	.: 8270s	SI .	Prep Ba Equipme	atch: ent Code:	110850 EGCMS08	
Lab ID DT Sample ID		·	Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14	
281075-11         MS         MW-01A-2SA04         MS           281075-12         MSD         MW-01-2SA04         MSD           281147-1         MW-03-2SA04         MSD           281147-2         MW-10A-2SA04         281147-           281147-3         MW-02-2SA04         281147-           281147-4         P-11-2SA04         281147-           281147-5         MW-02D-2SA04         281147-           1085021         LCS         11085021			09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004 09/21/2004	116.0 119.8 101.8 97.4 104.5 96.0 107.1 118.3 113.2	83.3 74.8 81.4 68.2 80.0 76.8 75.6 72.8 76.7	40.4 31.5 39.8 38.8 44.3 38.5 43.9 43.8 46.5	93.4 71.7 120.4A 75.3 94.4 87.1 84.5 81.7 87.1	36.0 31.0 43.1 29.8 37.4 34.7 39.5 34.7 36.1	88.8 97.0 103.4 81.3 85.9 82.2 91.3 92.2 94.2	
Test Test Description		Limits					1997 - 1997 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	•	÷	
246TBP2,4,6-Tribromophenol2FLUBP2-Fluorobiphenyl2FLUPH2-FluorophenolNITRD5Nitrobenzene-d5PHEND6Phenol-d6TERD14Terphenyl-d14		10 - 12 43 - 11 21 - 10 35 - 11 10 - 94 33 - 14	3 6 0 4					- - - -	 	



## QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

#### Report Date: 10/06/2004

#### REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 3) According to 40CFR Part 136.3, pH, Chlorine Residual, and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field, (e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.
- 4) For all USACE projects, the QC limits are based on "mean +/- 2 sigma", which are the warning limits.

#### General Information:

- Cresylic Acid is the combination of o,m and p-Cresol. The combination is reported as the final result.
- m-Cresol and p-Cresol co-elute. The result of the two is reported as either m&p-cresol or as p-cresol. m-Xylene and p-Xylene co-elute. The result of the two is reported as m,p-Xylene.
- N-Nitrosodiphenylamine decomposes in the gas chromatograph inlet forming dipheylamine and, consequently, may be detected as diphenylamine.
- Methylene Chloride and Acetone are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination. Trimethysilyl(Diazomethane) is used to esterify acid herbicides in Method SW-846 8151A.
- For Inorganic analyses, duplicate QC limits are determined as follows: If the sample result is less than or equal to 5 times the reporting limit, the RPD limit is equal to the reporting limit. If the sample result is greater than 5 times the reporting limit, the RPD limit is the method defined RPD.

#### Explanation of Qualifiers:

- U This qualifier indicates that the analyte was analyzed but not detected.
- J (Organics only) This qualifier indicates that the analyte is an estimated value between the RL and the MDL.
- B (Inorganics only) This Qualifier indicates that the analyte is an estimated value between the RL and the MDL.
- N (Organics only) This flag indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic charachterization of a TIC, such as "chlorinated hydrocarbon", the "N" flag is not used.

Explanation of General QC Outliers:

- A Matrix interference present in sample.
- a MS/MSD analyses yielded comparable poor recoveries, indicating a possible matrix interference. Method performance is demonstrated by acceptable LCS recoveries.
- b Target analyte was found in the method blank.
- M QC sample analysis yielded recoveries outside QC acceptance criteria. This sample was reanalyzed.
- L LCS analysis yielded high recoveries, indicating a potential high bias. No target analytes were
- observed above the RL in the associated samples. G - Marginal outlier within 1% of acceptance criteria.
- r RPD value is outside method acceptance criteria.
- C Poor RPD values observed due to the non-homogenous nature of the sample.
- 0 Sample required dilution due to matrix interference.
- D Sample reported from a dilution.
- d Spike and/or surrogate diluted.
- P The recovery of this analyte is outside default QC limits. The data is accepted and will be used to calculate in-house statistical limits.
- F
- The reported concentration exceeds the instrument calibration. The analyte is outside QC limits. The sample data is accepted since this analyte is not reported in associated samples.
- H Continuing Calibration Verification (CCV) standard is not associated with the samples reported.
- q See the subcontract final report for qualifier explanation.



#### QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/06/2004

- W The MS/MSD recoveries are outside QC acceptance criteria because the amount spiked is much less than the amount found in the sample.
- K High recovery will not affect the quality of reported results.
- Z See case narrative.

Explanation of Organic QC Outliers:

- e Method blank analysis yielded phthalate concentrations above the RL. Phthlates are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination.
- S Sample reanalyzed/reextracted due to poor surrogate recovery. Reanalysis confirmed original analysis indicating a possible matrix interference.
- T Sample analysis yielded poor surrogate recovery.
- R The RPD between the two GC columns is greater than 40% and no anomalies are present. The higher result is reported as per EPA Method 8000B.
- I The RPD between the two GC columns is greater than 40% and anomalies are present. The lower of the two results has been reported.
- X Gaseous compound. In-house QC limits are advisory.
- Y Ketone compounds have poor purge efficiency. In-house QC limits are advisory.
- f Surrogate not associated with reported analytes.

Explanation of Inorganic QC Outliers:

- Q Method blank analysis yielded target analytes above the RL. Associated sample results are greater than 10 times the concentrations observed in the method blank.
- V The RPD control limit for sample results less than 5 times the RL is +/- the RL value. Sample and duplicate results are within method acceptance criteria.
- e Serial dilution failed due to matrix interference.
- g Sample result quantitated by Method of Standard Additions (MSA) due to the analytical spike recovery
- being below 85 percent. The correlation coefficent for the MSA is greater than or equal to 0.995.
- s BOD/CBOD seed value is not within method acceptance criteria. Due to the nature of the test method, the sample cannot be reanalyzed.
- l BOD/cBOD LCS value is not within method acceptance criteria. Due to the nature of the test method, sample cannot be reanalyzed.
- N Spiked sample recovery is not within control limits.
- n Sample result quantitated by Method of Standard Additions (MSA) due to the analytical spike
- recovery being below 85 percent. The correlation coefficient for the MSA is less than 0.995.
- \* Duplicate analysis is not within control limits.

Abbreviations:

Batch - Designation given to identify a specific extraction, digestion, preparation, or analysis set. - Continuing Calibration Verification CCV - Low level standard check - GFAA, Mercury CRA - Low level standard check - ICP CRI Dil Fac - Dilution Factor - Secondary dilution analysis DLFac - Detection Limit Factor - Extraction Blank (TCLP, SPLP, etc.) EB - Initial Calibration ICAL - Initial Calibration Blank ICB ICV - Initial Calibration Verification I SA Interference Check Sample A - ICP - Interference Check Sample B - ICP ISB LCD - Laboratory Control Duplicate LCS - Laboratory Control Sample - Method Blank MB MD - Method Duplicate



# QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/06/2004

MDI - Method Detection Limit Matrix Spike MS MSD Matrix Spike Duplicate Not Detected ND PR Preparation Blank PREPF Preparation Factor Reporting Limit RL. RPD - Relative Percent Difference RRF Relative Response Factor

RT - Retention Time

DU - Duplicate

Method References:

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- (1) EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-94-111 Methods for the Determination of MEtals in Environmental Samples, Supplement I, May 1994.
- (3) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1993; Update IIB, January 1995; Update III, December 1996, Update IVA January 1998, Update IVB November 2000.
- (4) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989), 18th Edition (1992), 19th Edition (1995), 20th Edition (1998).
- (5) HACH Water Analysis Handbook 3rd Edition (1997).
- (6) Federal Register, July 1, 1990 (40 CFR Part 136 Appendix A).
- (7) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.
- (8) ASTM Annual Book of Methods (Various Years)
- (9) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.



#### LABORATORY CHRONICLE

Job Number: 281147

CUSTOMER: ERM Southwest, Inc.- Houston

Date: 10/06/2004

#### PROJECT: UPRR-HWPW-0014419 60 ATTN: Chris Young

Lab ID: 281147-1	Client ID: MW-03-2SA04	Date Re	.vd: 09/	15/2004	Sample	Date: 09/15/20	004	
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME A	NALYZED	DILUTION
	Data Package Validation	1	112373			10/06/2004	0000	
	Electronic Data Deliverables	1	81662			09/29/2004	1000	
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850	•		09/16/2004	1100	tin a terra
SW-846 3510C	Extraction (Sen Funnel) SVOC low level	1	110849			09/16/2004	1100	
01 040 05100	CC/NS Somi-Volatile Package Production	1	111573	·		00/27/2004	1400	
	CC/MS Volatiles Data Package Production	1	111365			00/23/2004	1700	
SUL 9/4 9370C	Semivalatile Openies - SIM Applysis		11155/	110950		00/21/2004	1/01	1 00000
SW-846 6270C	Semivolatile Organics - SIM Analysis	1	111527	110850		07/21/2004	1052	1.00000
SW-846 62700	Semivolatile Organics, Low Level		111202	110049		09/21/2004	1924	10,0000
SW-846 8270C	Semivolatile Urganics, Low Level		111203	110849		09/25/2004	1230	10.0000
SW-846 8260B	Volatile Organics	1	111223			09/21/2004	2019	1.00000
Lab ID: 281147-2	Client ID: MW-10A-2SA04	Date Re	cvd: 09/	15/2004	Sample	Date: 09/15/20	004	
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME A	NALYZED	DILUTION
SW-846 3510C	Extraction (Sen. Funnel) SVOC - SIM	1	110850	• • • • • • • • • • • •		09/16/2004	1100	
SU-846 35100	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850		09/21/2004	1429	1.00000
SW-846 82700	Semivolatile Organics Low Level	1	111563	110849		09/21/2004	2019	1.00000
SW-040 0270C	Semivolatile Organics, Low Level	1	111563	110840	· · · · ·	09/23/2004	1306	4 00000
SW-040 02700	Veletile Organics, LOW Level	1	111202	110047		00/21/2004	1052	1 00000
SW-840 02008	votatite organics	. <b>.</b>	111225			07/21/2004	1756	1.00000
Lab ID: 281147-3	Client ID: MW-02-2SA04	Date Re	cvd: 09/	15/2004	Sample	Date: 09/15/2	004	
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME A	NALYZED	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850			09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -
SH-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850		09/21/2004	1457	1.00000
SH-846 8270C	Semivolatile Organics Low Level	1	111563	110849		09/21/2004	2047	1.00000
SU-8/6 8270C	Semivolatile Organics, Low Level	. 1 .	111563	110849		09/23/2004	1334	2.00000
SW-040 02700	Volatile Organics, Low Level	1	111223	110047		09/21/2004	1925	1.00000
SW-040 0200D	votacite organics	•	111665			0772172004		1.00000
Lab ID: 281147-4	Client ID: P-11-2SA04	Date Re	cvd: 09/	15/2004	Sample	Date: 09/15/2	004	
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME A	NALYZED	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850			09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	•
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850		09/21/2004	1525	1.00000
SW-846 8270C	Semivolatile Organics. Low Level	. 1	111563	110849		09/21/2004	2115	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849		09/23/2004	1402	10.0000
SW-846 8260B	Volatile Organics	1	111223			09/21/2004	1802	1.00000
		Data Da		45 (200/	Comple	Datas 00/15/2	007	
Lab ID: 281147-5	Client ID: MW-U2D-2SAU4	Date Re	CVG: U9/	15/2004	sample	Date: 09/15/2		DIUTION
METHOD	DESCRIPTION	KUN#	BATCH#	PKEP BI	#(5)	DAIE/IIME A	1100	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850		•	09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	. 1	111554	110850		09/21/2004	1553	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849		09/23/2004	1211	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849		09/23/2004	1430	5.00000
SW-846 8260B	Volatile Organics	· 1	111223			09/21/2004	1735	1.00000

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#### APPENDIX C

#### Data Usability Summary

## Houston Wood Preserving Works Houston, Texas

Environmental Resources Management (ERM) reviewed a laboratory analytical data package 281147 from Severn Trent Laboratories of Houston, Texas for the analysis of five ground water samples collected on September 15, 2004 in the area of the Union Pacific Railroad property former Houston Wood Preserving Works site. Data were reviewed to assess conformance with the requirements of the *Review and Reporting of COC Concentration Data* TRRP-13 (December 2002), and adherence to project data quality objectives.

Purpose of Sampling Event: Semiannual ground water monitoring.

Analysis requested included:

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SW-846 8270C – Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (low-level and Selective Ion Monitoring (SIM))

SW-846 8260B – Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Data were reviewed and validated as described in the TRRP-13 Guidance Document and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were reviewed by ERM:

- Analytical data report,
- Laboratory Review Checklist (LRC), and
- Exception Reports (ER).

The results of supporting quality control (QC) analyses are summarized in the QC section of the analytical report.

The reportable data, LRCs and ERs included in this review are attached to this DUS.

#### Introduction

Four ground water samples and one duplicate ground water sample were analyzed for select semivolatile organic compounds (SVOCs) by low-level and SIM methods and select volatile organic compounds (VOCs). Field blanks and trip blanks were not provided to the laboratory for analysis. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

#### Data Review / Validation Results

#### Analytical Results

VOCs and SVOCs were reported in mg/L. Qualified sample data are listed on Table 2. Non-detected results are reported as less than the value of the sample quantitation limit (SQL) as defined by TRRP. According to the LRC, some SQLs were elevated due to dilutions necessary for analysis.

#### **Preservation and Holding Times**

The samples were evaluated for agreement with the chain-of-custody (COC). The samples were received in the appropriate containers and in good condition with most of the paperwork filled out properly. According to the sample receipt checklist, the laboratory did not receive the trip blank (TB02-2SA04) that was listed on the COC. Sample receipt temperature was within the acceptance criteria of 4 + / - 2 degrees C. The samples were preserved in the field as specified in SW-846 Table 2-36. Samples were prepared and analyzed within holding times as specified in SW-846 Table 2-36.

#### Calibrations and Tunes

According to the LRC, initial calibration and continuing calibration data met SW-846 method requirements for VOC and SVOC analyses. The data package documents satisfactory instrument performance calibrations (GC/MS tunes) for VOC and SVOC analyses.

#### Blanks

Method blank analyses were reported as not-detected for SVOC SIM. Field blanks and trip blanks were not provided to the laboratory with this package.

VOCs method blank analyzed on 9/20/04 at 13:42 had a detection of methylene chloride of 2.47407 ug/L. Samples from this data package were reported on 9/21/04 and were not associated with this method blank. VOCs method blank analyzed on 9/21/04 at 12:47 had a detection of methylene chloride of 2.86031 ug/L. Sample MW-03-2SA04 had a detection of methylene chloride less than 10X the method blank concentration, and was qualified as not-detected (U) for methylene chloride, due to method blank contamination.

SVOC low-level method blank had a reported detection of di-n-butyl phthalate (0.22612 ug/L). Samples MW-03-2SA04, MW-02-2SA04, P-11-2SA04 and MW-02D-2SA04 had detections of di-n-butyl phthalate less than 10X the method blank concentration, and were qualified as not-detected (U) for di-n-butyl phthalate, due to method blank contamination.

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#### Surrogate Recoveries

VOC surrogates were within laboratory-supplied acceptance limits for all samples.

SVOC low-level analysis had elevated surrogate 2,4,6-tribromophenol, 2-fluorobiphenyl and terphenyl-d14 recoveries for samples P-11-2SA04 and MW-03-2SA04 (all at 10X dilution). Sample MW-02D-2SA04 had elevated surrogate 2,4,6-tribromophenol recovery at 5X dilution. Since the surrogates were diluted out of the samples, qualification of the data was not necessary.

SVOC SIM sample MW-03-2SA04 had elevated nitrobenzene-d5 surrogate recovery. The other five surrogates were within acceptance limits, so qualification of the data was not necessary.

#### **Internal Standards**

According to the LRC, VOC and SVOC low-level internal standard areas were within SW-846 method acceptance criteria.

SVOC SIM sample MW-03-2SA04 had three internal standard areas below limits (phenanthrene-d10, chrysene-d12 and perylene-d12). Associated compounds (benzo(a)pyrene, bis(2-chloroethoxy)methane, 2,4-dinitrotoluene, 2,6-dinitrotoluene, pentachlorophenol and 1,2-diphenylhydrazine) were reported as not-detected and were qualified as non-detect estimated (UJ), due to low internal standard recovery.

#### Laboratory Control Samples

SVOC low-level, SVOC SIM and VOC laboratory control sample (LCS) recoveries met the laboratory-defined acceptable ranges.

Matrix Spike/Matrix Spike Duplicates

VOC MS/MSD recoveries analyzed from a sample from this project site (281075-11 and 12) were within laboratory-supplied acceptance criteria. A second VOC MS/MSD was analyzed and had low recovery for chlorobenzene and toluene. The sample used was not associated with this project site, so qualification of the data was not necessary.

SVOC SIM MS/MSD was analyzed from sample from this project site (281075-11 and 12). The SVOC SIM MS/MSD had elevated recovery for 2,4-dinitrotoluene and pentachlorophenol. All associated samples were reported as not-detected for these two compounds, no qualification of the data was not necessary. This MS/MSD also had elevated relative percent difference (RPD) for 1,2-diphenylhydrazine. The MS/MSD results were less than five times the method quantitation limit (MQL), and the difference between sample and duplicate was greater than the MQL. All associated samples were reported as not-detected for 1,2-diphenylhydrazine and were qualified as non-detect estimated (UJ), due to elevated MD/MSD RPD.

SVOC low-level MS/MSD was analyzed from sample from this project site (281075-11 and 12). The SVOC low level MS/MSD had elevated and low recovery for acenaphthene, dibenzofuran, 2-methylnaphthalene and fluorene. These compounds were not qualified because the spike amount was less than four times that in the unspiked parent sample and may not represent the true matrix effect. Additionally, 4-nitrophenol, n-nitrosodiphenylamine, 2-methyl-4,6-dinitrophenol and phenanthrene had elevated MS/MSD recovery. All associated samples were reported as not-detected for 4-nitrophenol, n-nitrosodiphenylamine and 2-methyl-4,6-dinitrophenol, so qualification of the data was not necessary. All five associated samples were reported as detected for phenanthrene and were qualified as estimated high (JH), due to elevated MS/MSD recovery. This SVOC low-level MS/MSD also had elevated RPD for phenanthrene. The MS/MSD results were greater than five times the MQL and detections of phenanthrene were qualified as estimated (J), due to elevated MS/MSD RPD.

#### **Field Precision**

One field duplicate sample was collected during this sampling event (MW-02-2SA04 / MW-02D-2SA04). The sample and duplicate were reported as detected or estimated detected (J flagged) for 12 common compounds. MW-02-2SA04 was also reported as detected for 2-chloronaphthalene and MW-02D-2SA04 was also reported as detected for bis(2-ethylhexyl)phthalate and benzo(a)anthracene. Eight compounds (2methylnaphthalene, anthracene, acenaphthene, acenaphthylene, dibenzofuran, fluorene, phenanthrene and pyrene) had RPD less than 20% and were within acceptance criteria. 2,4-Dimethylphenol had analyte concentrations less than five times the method quantitation limit (MQL) and the difference between sample and duplicate was greater than two times the MQL, so detections were qualified as estimated (J) and non-detects as non-detect estimated (UJ). Di-n-butyl phthalate had analyte concentrations less than five times the method quantitation limit (MQL) and the difference between sample and duplicate was less than two times the MQL, so no qualification was necessary. Fluoranthene and naphthalene had analyte concentrations greater than five times the MQL and RPD greater than 30%. Detections of fluoranthene and naphthalene in associated samples were qualified as estimated (J) and non-detects were qualified as non-detect estimated (UJ). Sample/duplicate precision calculations are included in Table 3.

#### **Field Procedures**

The samples were collected using documented sampling procedures.

#### SUMMARY

Ground water analytical data are useable for the purpose of delineation of VOCs and SVOCs in the area of the former Houston Wood Preserving Works site. The data user is advised that sample MW-03-2SA04 was qualified as not-detected (U) for methylene chloride due to method blank contamination. Samples MW-03-2SA04, MW-02-2SA04, P-11-2SA04 and MW-02D-2SA04 were qualified as not-detected (U) for di-n-butyl phthalate, due to method blank contamination.

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SVOC SIM sample MW-03-2SA04 was qualified as non-detect estimated (UJ) for six compounds (benzo(a)pyrene, bis(2-chloroethoxy)methane, 2,4-dinitrotoluene, 2,5-dinitrotoluene, pentachlorophenol and 1,2-diphenylhydrazine), due to low internal standard recovery.

All SVOC SIM samples were qualified as non-detect estimated (UJ) for 1,2diphenylhydrazine, due to elevated MD/MSD RPD.

U

SVOC low-level samples P-10-2SA04, MW-11B-2SA04, MW-04-2SA04, MW10B-2SA04, MW-01A-2SA04, MW-11A-2SA04 and MW-11AD-2SA04 were reported as detected for phenanthrene and were qualified as estimated high (JH), due to elevated MS/MSD recovery.

Detections of fluoranthene, naphthalene and 2,4-dimethylphenol in all samples were qualified as estimated (J) and non-detects were qualified as non-detect estimated (UJ), due to sample/duplicate precision outside QC criteria.

# TABLE 1

Cross-Reference Field Sample Identifications and Laboratory Identifications Laboratory Package 281147

Houston Wood Preserving Works Union Pacific Railroad

Field Identification	Laboratory Identification	_
MW-03-2SA04	281147-1	
MW-10A-2SA04	281147-2	
MW-02-2SA04	281147-3	
P-11-2SA04	281147-4	
MW-02D-2SA04	281147-5	field duplicate

g:\2005\0014419\6440H\_281147.xis

#### TABLE 2

#### Qualified Analytical Data Laboratory Package 281147

#### Houston Wood Preserving Works Union Pacific Railroad

Field Identification	Analyte	Qualification	Reason for Qualification
MW-03-2SA04	Methylene Chloride	U	Method blank contamination
MW-03-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-02-2SA04	Di-n-butyl phthalate	U	Method blank contamination
P-11-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-02D-2SA04	Di-n-butyl phthalate	U	Method blank contamination
MW-03-2SA04	benzo(a)pyrene	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	bis(2-chloroethoxy)methane	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	2,4-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	2,6-dinitrotoluene	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	pentachlorophenol	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	1,2-diphenylhydrazine	UJ	Internal standard areas below acceptance limits
MW-03-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-10A-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-02-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
P-11-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
MW-02D-2SA04	1,2-diphenylhydrazine	UJ -	Elevated MS/MSD RPD
MW-03-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-10A-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-02-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
P-11-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-02D-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-03-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-10A-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-02-2SA04	phenanthrene	J	Elevated MS/MSD RPD
P-11-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-02D-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-03-2SA04	fluoranthene	UJ	Sample/duplicate precision outside criteria
MW-10A-2SA04	fluoranthene	J	Sample/duplicate precision outside criteria
MW-02-2SA04	fluoranthene	J	Sample/duplicate precision outside criteria
P-11-2SA04	fluoranthene	J	Sample/duplicate precision outside criteria
MW-02D-2SA04	fluoranthene	J	Sample/duplicate precision outside criteria
MW-03-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-10A-2SA04	naphthalene	J.	Sample/duplicate precision outside criteria
MW-02-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
P-11-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-02D-2SA04	naphthalene	J	Sample/duplicate precision outside criteria
MW-03-2SA04	2,4-dimethylphenol	UJ	Sample/duplicate precision outside criteria
MW-10A-2SA04	2,4-dimethylphenol	UJ	Sample/duplicate precision outside criteria
MW-02-2SA04	2,4-dimethylphenol	J.	Sample/duplicate precision outside criteria
P-11-2SA04	2,4-dimethylphenol	UJ	Sample/duplicate precision outside criteria
MW-02D-2SA04	2,4-dimethylphenol	J .	Sample/duplicate precision outside criteria

#### NOTES:

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U = not-detected

J = estimated data, the reported sample concentration is approximated due to exceedance of QC requirements UJ = the analyte was analyzed for but was not detected above the reported sample quantitation limit. the associated value is an estimate and may be inaccurate or imprecise. H = high bias

# TABLE 3

Field Precision Laboratory Package 281147

Houston Wood Preserving Works Union Pacific Railroad

Field Identification	Analyte	Sample Result	Duplicate Result	RPD	Qualified
		<ul> <li>A second sec second second sec</li></ul>			
MW-02-2SA04 / MW-02D-2SA04	2,4-dimethylphenol	0.00134	0.00244	-58.20	J ·
	2-methylnaphthalene	0.0103	0.00993	3.66	A .
	acenaphthene	0.0604	0.0658	-8.56	А
	acenaphthylene	0.000768	0.000838	-8.72	Α
	anthracene	0.00218	0.0024	-9.61	A
	dibenzofuran	0.0302	0.0346	-13.58	A
	Di-n-butyl phthalate	0.000519	0.000299	53.79	A*
	fluoranthene	0.00202	0.00283	-33.40	J
	fluorene	0.0328	0.0387	-16.50	А
	naphthalene	0.0555	0.108	-64.22	J
	phenanthrene	0.00554	0.00573	-3.37	А
	pyrene	0.00122	0.00136	-10.85	A A

## NOTES:

results reported as mg/L RPD = ((SR-DR)\*200)/(SR+DR) J = estimated data due to inability to meet QC criteria

A = Acceptable data

A\* = Acceptable data based on Table D-2 of TRRP-13 Guidance Document



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# ANALYTICAL REPORT

JOB NUMBER: 281075

Prepared For:

ERM Southwest, Inc.- Houston 15810 Park Ten Place Suite 300 Houston, TX 77084

> Attention: Chris Young Date: 10/13/2004

nacherd

Signature

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail:

U

101 Date

Severn Trent Laboratories 6310 Rothway Drive Houston, TX 77040

PHONE: 713-690-4444 FAX..: 713-690-5646





10/13/2004

Chris Young ERM Southwest, Inc.- Houston 15810 Park Ten Place Suite 300 Houston, TX 77084

Project : UPRR-HWPW-0014419/60 Project No. : 281075 Date Received : 09/14/2004 STL Job : 281075

Dear Chris Young:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

1	MW = 08 = 25A04			2.	P-10-25A04
<u>.</u> .					
చ.	MW-07-2SA04			4.	MW-5-2SA04
5.	MW-11B-2SA04		•	6.	MW - 04 - 2SA04
7.	MW-10B-2SA04			8.	P-12-2SA04
9.	FB-091404			10.	MW-01A-2SA04
11.	MW-01A-2SA04	MS		12.	MW-01-2SA04 MSD
13.	MW-11A-2SA04		•	14.	MW-11AD-2SA04
15.	TB01-2SA04			16.	MW-09-2SA04

All holding times were met for the tests performed on these samples.

Enclosed, please find the Quality Control Summary. All quality control results for the QC batch that are applicable to the sample(s) are acceptable except as noted in the QC batch reports.

The test results in this report meet all NELAP requirements for STL Houston's NELAP accredited parameters. Any exceptions to NELAP requirements will be noted and included in a case narrative as a part of this report.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Severn-Trent Laboratories to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

Sincerelv, lhad

Sachin G. Kudchadkar Project Manager Table 1

**Cross-Reference Field Sample Identifications and Laboratory Identifications** 

Field Identification	EPA Sample Number	Laboratory Identification	8260B	<b>8270C</b>	Comment ************************************
MW-08-2SA04	MW-08-2SA04	281075-1	х	. X	
P-10-2SA04	P-10-2SA04	281075-2	<b>X</b> .	х	
· MW-07-2SA04	MW-07-2SA04	281075-3	X	. X	
MW-5-2SA04	MW-5-2SA04	281075-4	<b>X</b> ·	X	
MW-11B-2SA04	MW-11B-2SA04	281075-5	x	x	
MW-04-2SA04	MW-04-2SA04	281075-6	X	. X	
MW-10B-2SA04	MW-10B-2SA04	281075-7	X	X	
P-12-2SA04	P-12-2SA04	281075-8	X	X	
FB-091404	FB-091404	281075-9 -	Х	X	Field Blank
MW-01A-2SA04	MW-01A-2SA04	281075-10	X	X	
MW-01AMS-2SA04	MW-01A-2SA04 MS	281075-11	Х	x	Matrix Spike of MW-01A-2SA04
MW-01AMSD-2SA04	MW-01A-2SA04 MSD	281075-12	X ***	X	Matrix Spike Duplicate of MW-01A-2SA04
MW-11A-2SA04	MW-11A-2SA04	281075-13	X	x	•
MW-11AD-2SA04	MW-11AD-2SA04	281075-14	Х	x	
TB01-2SA04	TB01-2SA04	281075-15	X		Trip Blank
MW-09-2SA04	MW-09-2SA04	281075-16	x	X	Not on C-O-C

RG-366/TRRP-13

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Appendix 1 - 1

Appendix 1: Data Usability Review Tool Data Review and Reporting under TRRP

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# Appendix A Laboratory Data Package Cover Page

This data package consists of:

- 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 5.13 or ISO/IEC 17025 Section 5.10
    - 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) for each analyte for each method and matrix;
- R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By me signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

**Check, if applicable:** [] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature

affirming the above release statement is true.

Norman Flynn Name (Printed) Signature

Laboratory Director Official Title (printed)

Lab	orator	ry Name: STL-Houston	Date: 09/20/04					
Proj	ect N	ame: HWPW Labo	ratory Job Number: 281075					
Rev	iewer	Name: ZFL Prep	Batch Number(s): 111218-VOA		•			
<u>#</u> 1	Δ2	Description		Ves	No	NA <sup>3</sup>	NR <sup>4</sup>	ER#
π	<u> </u>	Chain of outpdy (C.O.C)		103	110 	137.2		52:53
0.1		Did some los most the laborate with standard and different from		-2≓ ▼	- 401		34,21	يك <del>ا</del> دايد ا
KI		Did samples meet the laboratory's standard conditions of sam	ple acceptability upon receipt?			v		
,		were an departures from standard conditions described in an				~		
R2	OI	Sample and quality control (QC) identification		<u> </u>	192	1200	37%	
		Are all field sample ID numbers cross-referenced to the labor	atory ID numbers?	X				1
	<u></u>	Are all laboratory ID numbers cross-referenced to the corresp	onding QC data?	X				
R3	01	Test reports	•	<u>.</u> 37	उन्हों -	1. S. S.		1.53.05
		Were all samples prepared and analyzed within holding times	?	X				
		Other than those results < MQL, were all other raw values bra	icketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?		X				
	-	Were all analyte identifications checked by a peer or supervis	0r?	X				
		Were sample quantitation limits reported for all analytes not o	letected?	X				
		Were all results for soil and sediment samples reported on a d	ry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment	t samples?	ļ		X		
		It required for the project, TICs reported?				X		
R4	0	Surrogate recovery data	· · · · · · · · · · · · · · · · · · ·		्रिष्ट	194		100
		Were surrogates added prior to extraction?	· · · · · · · · · · · · · · · · · · ·	X				
		Were surrogate percent recoveries in all samples within the la	boratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples		433.	-95g		28.2	1996
		Were appropriate type(s) of blanks analyzed?		X				
		Were blanks analyzed at the appropriate frequency?		X				· · ·
		Were method blanks taken through the entire analytical proce	ss, including preparation and, if					·
	-	applicable, cleanup procedures?	· · · · · · · · · · · · · · · · · · ·				•••	· ·
		Were blank concentrations < MQL?		X				
R6	OI	Laboratory control samples (LCS):		1.000	144	200 A	$\lambda^{\frac{1}{2}}$	
		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 laborate	ory QC limits?	X				
		Does the detectability data document the laboratory's capability	ity to detect the COCs at the MDL used			Х		
	ŀ	to calculate the SQLs?						
		Was the LCSD RPD within QC limits?				Х		
R7	101	Matrix spike (MS) and matrix spike duplicate (MSD) data	L	363	23\$S	336		
		Were the project/method specified analytes included in the M	S and MSD?	X				2
		Were MS/MSD analyzed at the appropriate frequency?		X				
		Were MS (and MSD, if applicable) %Rs within the laboratory	v QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	• .	X				
R8	IOI	Analytical duplicate data		62:		633	- MAN	29.3
		Were appropriate analytical duplicates analyzed for each matr	ix?			Х		
		Were analytical duplicates analyzed at the appropriate frequen	ncy?			X		
- 4		Were RPDs or relative standard deviations within the laborate	ory QC limits?			Х		
69	IOI	Method quantitation limits (MQLs):		1993	. <u>*</u> 129.	2:32	1870 -	1213
		Are the MQLs for each method analyte included in the labora	tory data package?	X				
		Do the MQLs correspond to the concentration of the lowest n	on-zero calibration standard?	X				
		Are unadjusted MQLs included in the laboratory data package	?	X				
R10	OI	Other problems/anomalies	·····	\$1. 1	5.24	1.00	194 <u>1</u>	
		Are all known problems/anomalies/special conditions noted in	n this LRC and ER?	X				
	ł	Were all necessary corrective actions performed for the report	ted date?					
		were an necessary concentre actions performed for the report						

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2.

= organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

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

Ap	pen	dix A (cont'd): Laboratory Review Checl	klist: Reportable Data					
Lab	orato	ry Name: STL-Houston	RC Date: 09/20/04					
Proj	ject N	ame: HWPW L	aboratory Job Number: 281075					
Rev	iewer	Name: ZFL P	rep Batch Number(s): 111218-VOA					
#1	A <sup>2</sup>	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER#⁵
<u>81</u>	OT	Initial calibration (ICAL)	•	12.51	344	1925		
		Were response factors and/or relative response factors for	each analyte within OC 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 app	vronriate second source standard?	X X				
\$2		Initial and continuing colibration varification (ICCV a)	nd CCV) and continuing calibration			N		ુવટુ છે.
54		Was the CCV analyzed at the method required frequency?	)	v		1.2 100		
		Was the CCV analyzed at the method-required frequency?	ad required OC limite?					
		Were percent differences for each analyte within the method	ou-required QC minus?					
	·	Was the ICAL curve verified for each analyte?				37	<u> </u>	
		Was the absolute value of the analyte concentration in the	inorganic CCB < MDL?		F.a. is	X		
83	0	Mass spectral tuning:		1.570	10.999	. 4919 JA	1943	See Steel
		Was the appropriate compound for the method used for tu	ning?	X				
		Were ion abundance data within the method-required QC	limits?	X				
<u>S4</u>	0	Internal standards (IS):	· · · · · · · · · · · · · · · · · · ·			1. 18 19 19	100	1.
	ļ	Were IS area counts and retention times within the method	d-required QC limits?	X				
S5	OI	Raw data (NELAC section 1 appendix A glossary, and	section 5.12 or ISO/IEC 17025 section		- 6 ( d			1. X 76.
		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				
<b>S6</b>	0	Dual column confirmation		1.3432	्राष्ट्र	1 X 1	11	$\rightarrow \frac{1}{2}/2^{2}$
		Did dual column confirmation results meet the method-rec	quired QC?			X		
S7	0	Tentatively identified compounds (TICs):		- 24 V		관련	2025.	6-25
		If TICs were requested, were the mass spectra and TIC dat	ta subject to appropriate checks?			X		
<b>S8</b>	I	Interference Check Sample (ICS) results:	•	82 -	1972	1.57		1.230
		Were percent recoveries within method QC limits?				X		
S9	I	Serial dilutions, post digestion spikes, and method of st	tandard additions	Sec.		1.46	(24)	St. 8. 2.
		Were percent differences, recoveries, and the linearity with	hin the QC limits specified in the method?	1		X		
S10	lor	Method detection limit (MDL) studies		**	120	1.1641	3.5	いたときに
	1	Was a MDL study performed for each reported analyte?		X				
	<u> </u>	Is the MDL either adjusted or supported by the analysis of	f DCSs?	X				
S11	loī	Proficiency test reports:		1.1.2	1.2%		3. K	•
<b>`</b>	<u> </u>	Was the laboratory's performance acceptable on the applic	cable proficiency tests or evaluation studies?	x			<u> </u>	
S12	lor	Standards documentation		Sec. 2	123.5	l∳`₹	1.25	
		Are all standards used in the analyses NIST-traceable or o	btained from other appropriate sources?	x				
\$13	OT	Compound/analyte identification procedures			1.4%	13.4	- N	e desta
	<u> </u>	Are the procedures for compound/analyte identification do	ocumented?	x	1.1.2.4	1.961.0	1.5.15	
\$14	OT	Demonstration of analyst competency (DOC)		1.03	1.	1919 -	184	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
		Was DOC conducted consistent with NEL AC Chapter 5C	or ISO/IEC 42	V		1887.50	5.97	1 11 1 1 C
		Is documentation of the analyst's competency up to date a	and on file?				<u> </u>	
\$15	OT I	Varification/validation documentation for matheda (NI	ELAC Chap 5 or $ISO/IEC 17025$ Section 5)	<u>∧</u>   - ⊾⊛	ain.	1 1 1 N		3000
1913		Are all the methods used to generate the date decumented	verified and validated where applicable?		1.448.1			
0	0.	Are an me memous used to generate the data documented,	, vermeu, anu vanualeu, where applicable?					1 ·
510	01	Laboratory standard operating procedures (SOPs):			<u>80</u>			111.8
		Are laboratory SOPs current and on file for each method p	performed?			1		
		<ol> <li>Items identified by the letter "R" should be included in the Items identified by the letter "S" should be retained and ma</li> <li>O = organic analyses; I = inorganic analyses (and general NA = Not applicable.</li> <li>NR = Not Reviewed.</li> </ol>	laboratory data package submitted to the TCEQ in ade available upon request for the appropriate reten chemistry, when applicable).	the T tion p	RRP- eriod	require	d repo	ort(s).

**.** . .

2 3 4 5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

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Appe	ndix A (cont'd): Laboratory Review C	hecklist: Exception Reports
Labora	tory Name: STL-Houston	LRC Date: 09/20/04
Project	t Name: HWPW	Laboratory Job Number: 281075
Review	ver Name: ZFL	Prep Batch Number(s): 111218-VOA
ER # <sup>1</sup>	DESCRIPTION	
1 ·	The laboratory received sample MW-09 2SA was analyzed by method 8260B.	04 even though it was not listed on the C-O-C. Per client's request, this sample
2	In addition to the designated MS/MSD, the la client's sample was not reviewed.	aboratory also selected a sample from another client. The data for the other
	ER# = Exception Report identific	ation number (an Exception Report should be completed for an item if

"NR" or "No" is checked on the LRC)

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Labo	orator	ry Name: STL-Houston	pate: 09/27/04					
Proi	ect N	ame: HWPW Labora	tory Job Number: 281075					
Davi		Name I C	atah Number(a): 110840 SV					
revi	ewer		aten Number(s). 110849-3 V	¥	Nr.	3143	2104	נות ת
#'	<u>A</u> <sup>2</sup>	Description	· · · · · · · · · · · · · · · · · · ·	Yes	N0	NA <sup>-</sup>	NK.	ER#
		Chain-of-custody (C-O-C)			11		1.22	132
R1	OI	Did samples meet the laboratory's standard conditions of samp	le acceptability upon receipt?	Х				
		Were all departures from standard conditions described in an e	cception report?			X		
R2	OI	Sample and quality control (QC) identification		13	, n. <b>3</b> .	- 1 a ( ).		$\mathcal{X}: \bigcup_{i=1}^{n} \mathcal{Y}_{i}$
4		Are all field sample ID numbers cross-referenced to the laboration	ory ID numbers?	Х				1
		Are all laboratory ID numbers cross-referenced to the correspo	nding QC data?	Х				
R3	OI	Test reports		3			$\mathcal{X}$ is	1.15
		Were all samples prepared and analyzed within holding times?		Х				
		Other than those results < MQL, were all other raw values brac	keted by calibration standards?	Х				
		Were calculations checked by a peer or supervisor?	······································	X				
		Were all analyte identifications checked by a peer or superviso	r?	Х				
		Were sample quantitation limits reported for all analytes not de	tected?	x				
		Were all results for soil and sediment samples reported on a dr	v weight hasis?			x		
		Were % moisture (or solids) reported for all soil and sediment	samples?			x		
		If required for the project, TICs reported?			-	x		
R4	0	Surrogate recovery data		R.A.	18.5	- Calibri	361	1. A.
	<u> </u>	Were surrogates added prior to extraction?		x			\$196 ·	
		Were surrogate percent recoveries in all samples within the lab	aratary OC limits?	Λ	x			234
<b>R5</b>	OT	Test reports/summery forms for blank semples	oratory QC minus:	A. S.	<u> </u>	1.12	12.9.4	2007 1002
10	01	Were reports/summary forms for blank samples		v	18.3	- 1. <b>3</b> .	5.9	
1.1		Were appropriate type(s) of blanks analyzed?		A V				
		Were blanks analyzed at the appropriate frequency?	including anothing and if					
		were method blanks taken through the entire analytical proces	s, including preparation and, if	•				
		Applicable, cleanup procedures?		v	<u> </u>			
DC		were blank concentrations < MQL?		Α				
KO		Laboratory control samples (LCS):		10g 77	- 30 - 20 -	िलेको हो। इ.स. ह	1.5	1.1.2.14
•		were all COCs included in the LCS?		X				
		Was each LCS taken through the entire analytical procedure, in	cluding prep and cleanup steps?	<u>X</u>				
		Were LCSs analyzed at the required frequency?		X				
		Were LCS (and LCSD, if applicable) %Rs within the laborator	y QC limits?	X				
		Does the detectability data document the laboratory's capability	to detect the COCs at the MDL				•	
		used to calculate the SQLs?					ļ	
		Was the LCSD RPD within QC limits?				X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data		12. Q	14.5.92	23	1. 19	10.15
		Were the project/method specified analytes included in the MS	and MSD?	<u>X</u>	L			
		Were MS/MSD analyzed at the appropriate frequency?		X		<u> </u>		
		Were MS (and MSD, if applicable) %Rs within the laboratory	QC limits?		X	<u> </u>		5
		Were MS/MSD RPDs within laboratory QC limits?			X			6
R8	IOI	Analytical duplicate data		રસેલ	<b>合</b> 門:	639	11	- 52943
		Were appropriate analytical duplicates analyzed for each matri	x?			X		
		Were analytical duplicates analyzed at the appropriate frequen	cy?			X		
		Were RPDs or relative standard deviations within the laborator	y QC limits?			X		
R9	OI	Method quantitation limits (MQLs):		14 Q	1925	10.94	3	$-2^{2}$
		Are the MQLs for each method analyte included in the laborate	bry data package?	X				
		Do the MQLs correspond to the concentration of the lowest no	n-zero calibration standard?	X		•		
		Are unadjusted MQLs included in the laboratory data package		X				
R10	IO	Other problems/anomalies			27	\$\$ \$ j	4.87	444
		Are all known problems/anomalies/special conditions noted in	this LRC and ER?	X				· · · · ·
		Were all necessary corrective actions performed for the reported	d data?	X				
1		Was applicable and available technology used to lower the SO	L to minimize the matrix interference	X		<u> </u>		7
		affects on the sample results?					•	

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

e organic analyses; I = inorganic analyses (and general chemistry, when applicable);
 NA = Not applicable;

4.

NR = Not reviewed; ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked). 5.

Ĺab	orato	ry Name: STL-Houston LRC	Date: 09/27/04					
Proj	ject N	lame: HWPW Labo	ratory Job Number: 281075					
Rev	iewei	Name: LG Prep	Batch Number(s): 110849-SV					
# <sup>1</sup>	A <sup>2</sup>	Description	· · · · · · · · · · · · · · · · · · ·	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER
<b>S1</b>	OI	Initial calibration (ICAL)		12.9	1882		28028	1.25
		Were response factors and/or relative response factors for each and	alvte within OC limits?	x				+
		Were percent RSDs or correlation coefficient criteria met?		X			•	
		Was the number of standards recommended in the method used fo	r all analytes?	X			<u> </u>	1
		Were all points generated between the lowest and highest standard	used to calculate the curve?	Х				
		Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate	second source standard?	X				
S2	IOI	Initial and continuing calibration verification (ICCV and CCV	) and continuing calibration	2013 2013	10,000	1000	-35 X -	34
		Was the CCV analyzed at the method-required frequency?		X	<u></u>			
		Were percent differences for each analyte within the method-requi	red OC limits?	x				1
		Was the ICAL curve verified for each analyte?		X				+
		Was the absolute value of the analyte concentration in the inorgan	ic $CCB < MDL?$			x	i –	
<b>S</b> 3	0	Mass spectral tuning:		insie i	- 16 g.	2000	Tekske	1005
	<u> </u>	Was the appropriate compound for the method used for tuning?		x	ંગ્રસ્ટ્ય			1.5.57
		Were ion abundance data within the method-required OC limits?		x				
<u>54</u>	0	Internal standards (IS):		. ಜನೆಸ್. - ಜನೆಸ್.	1	19	N877	
	<u> </u>	Were IS area counts and retention times within the method-require	ed OC limits?	x	an frail	1.1.1.2.2.2	y Linde Are L	199
55	ω	Pay data (NFLAC section 1 appendix A glossary and section	5 12 or ISO/IEC 17025 section	4.52	r softer:	ಹಾಗಿತ್ರದ	entra par	100
		Were the raw data (for example, chromatograms, spectral data) rel	viewed by an analyst?	V		an a	1 1 1 2 1	1.000
		Were data associated with manual integrations flagged on the raw	data?	N V				-
56	0	Dual column confirmation		 		9 . in x	1. 19. Jac	1
30		Did dual column confirmation results must the method required O	<u></u>	- di tash	392	v	2.115.5.8	1
87	6	Tartatively identified compounds (TIC):			100.5	<b>A</b> 20-52		
51	<u>v</u>	If The ward requested were the mean question and The data subject		المتركب	. ĝė	v	10000	1922
20	т	In TICS were requested, were the mass spectra and TIC data subject	t to appropriate checks?		- 23	<b>A</b>	5.75.46.29	6.8.2
50	1	Interference Check Sample (ICS) results:	· · · · · · · · · · · · · · · · · · ·		r sjøĝ≉ L	3.60.09 <b>V</b>	19444	્યું દેવે
20		were percent recoveries within method QC limits?		. Stewart		A:	31.51.51	. trace
39	1	Serial dilutions, post digestion spikes, and method of standard	additions	2.25	15.34	<u>२.१२८२</u> • • •	- 010321.	1-5%
210		were percent differences, recoveries, and the linearity within the C	C limits specified in the method?		and a	<b>A</b>		1.746
510	01	Method detection limit (MDL) studies		1997 v.	28.3	-2097 <b>0</b> 5	1385-514	35
		was a MDL study performed for each reported analyte?	<u> </u>	X				
211		Is the MDL either adjusted or supported by the analysis of DCSS?		X	a là tre	a statute	at reading	12.5
511	01	Proficiency test reports:	<u></u>		19 <u>9</u> 90	1092	ે સ્ટેસ્ટ્રે	-
	OT.	Was the laboratory's performance acceptable on the applicable pro	ficiency tests or evaluation studies?	X		The constitution	14/10/01	
512	01	Standards documentation				250	1962	3.9
		Are all standards used in the analyses NIST-traceable or obtained	from other appropriate sources?	X				
\$13	01	Compound/analyte identification procedures		0.3.5	298 g	191 <u>2</u> 194	in Sugar	1
~		Are the procedures for compound/analyte identification document	ed?	X				<u> </u>
<b>S</b> 14	OI	Demonstration of analyst competency (DOC)		Net 1	1. A A A			120
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/	IEC 4?	X			<u> </u>	
		Is documentation of the analyst's competency up-to-date and on fi	le?	X			ļ	<u> </u>
\$15	10	Verification/validation documentation for methods (NELAC C	hap 5 or ISO/IEC 17025 Section 5)	4264			(9388)	. 94) (
		Are all the methods used to generate the data documented, verified	l, and validated, where applicable?	X				
516	OI	Laboratory standard operating procedures (SOPs):	• •	322	3236	200 B		130
				7.5			1	

Items identified by the letter "K" should be included in the laboratory data package submitted to the ICEQ in the IRRP-required report 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).

2 O = organic analyses;
3 NA = Not applicable.

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4 NR = Not Reviewed.

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

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Appen	dix A (cont'd): Laboratory Review Ch	necklist: Exception Reports
Laborato	ory Name: STL-Houston	LRC Date: 09/27/04
Project 1	Name: HWPW	Laboratory Job Number: 281075
Reviewe	r Name: LG	Prep Batch Number(s): 110849-SV
ER # <sup>1</sup>	DESCRIPTION	
1	The laboratory received sample MW-09 2 sample was analyzed by method 8270C.	2SA04 even though it was not listed on the C-O-C. Per client's request, this
2	Fourteen surrogate recoveries were above a	cceptance limits due to matrix interference.
3 .	Ten surrogate recoveries were above accept	tance limits due to the dilutions necessary for analyses.
4	The 2,4,6-tribromophenol surrogate recover affect the quality of reported results.	ry was above acceptance limits in the method blank. This high recovery will not
5	Seven recoveries each in the MS and MSD	were outside acceptance limits due to matrix interference.
6	The 2-methylnaphthalene and phenanthrene	e RPDs were above acceptance limits due to matrix interference.
7	One or more SQLs in eight client samples y	were elevated due to the dilutions necessary for analyses.
	ER# = Exception Report identification r	number (an Exception Report should be completed for an item if

"NR" or "No" is checked on the LRC)

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Lab	orator	v Name: STL-Houston	C Date: 09/27/04					
Proi	ect N	ame: HWPW I a	horstory Job Number: 281075					
Revi	iewer	Name: LG Pre	p Batch Number(s): 110850-SV SIM					
#1	A <sup>2</sup>	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER#
		Chain-of-custody (C-O-C)			ΩĽ.		÷XX	
R1	01	Did samples meet the laboratory's standard conditions of sa	ample acceptability upon receipt?	X			2	
		Were all departures from standard conditions described in a	an exception report?			X		
R2	OI	Sample and quality control (QC) identification	· · · · · · · · · · · · · · · · · · ·	3:33		- 2011 1	32.77 1.07	°ho∛¢s
		Are all field sample ID numbers cross-referenced to the lab	oratory ID numbers?	Х				1
		Are all laboratory ID numbers cross-referenced to the corre	sponding QC data?	Х				
R3	10	Test reports				10	Sa.i	1.645 °.
		Were all samples prepared and analyzed within holding tim	ies?	Х				
		Other than those results < MQL, were all other raw values	bracketed by calibration standards?	Х				
		Were calculations checked by a peer or supervisor?		Х				
		Were all analyte identifications checked by a peer or super-	visor?	Х				
		Were sample quantitation limits reported for all analytes no	t detected?	X				
		Were all results for soil and sediment samples reported on a	a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sedim	ent samples?			X		
If required for the project, TICs reported?						X		
R4	0	Surrogate recovery data			-	1908	100	1.25
		Were surrogates added prior to extraction?		X				
		Were surrogate percent recoveries in all samples within the	laboratory QC limits?		X			2
R5	OI	Test reports/summary forms for blank samples			\$. F.	2.13	18 Y.	- 60° %
		Were appropriate type(s) of blanks analyzed?		Χ				
		Were blanks analyzed at the appropriate frequency?		X				
	· ·	Were method blanks taken through the entire analytical pro	cess, including preparation and, if	Х				
		applicable, cleanup procedures?		37				·.
D/		Were blank concentrations < MQL?		X		0.5.24		at second
KO	01	Laboratory control samples (LCS):		1000	(944) (944)	- 85 T	1999 - 1997 1997 - 1997	20.25
		Were all COCs included in the LCS?		X	ļ			
		Was each LCS taken through the entire analytical procedur	e, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?		X				
		Were LCS (and LCSD, if applicable) %Rs within the labor	atory QC limits?	X			<u> </u>	
		Does the detectability data document the laboratory's capab	ility to detect the COCs at the MDL		•	X		
		used to calculate the SQLs?	· · · · · · · · · · · · · · · · · · ·			v		
07		was the LCSD RPD within QC limits?					200	
K/		Matrix spike (MS) and matrix spike duplicate (MSD) da		Sec.	in the second	1Y×13	-36.5	1.22
	·	were the project/method specified analytes included in the	MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	0.0 liit-0	Λ.	V	<u> </u>		
		Were MS (and MSD, if applicable) %RS within the laborate				<u> </u>		3
00		were Mis/MisD RPDs within laboratory QC limits?			<u> </u>	1 an Ag	135.0	4
Kð		Analytical duplicate data		8.9.7	1354	2435	2028	ingles 13.
		Were appropriate analytical duplicates analyzed for each m						
		Were analytical duplicates analyzed at the appropriate freq	atom: OC limita?					
DQ		Wethed questitation limits (MOLs)		32.35	1.178		2563	11732.8
		Are the MOL a for each method applyte included in the labo	watawi data paakaga?	्वल्य <b>४</b>	명안한	્યાન	1998.91	1.282.2
	· ·	Do the MOL s correspond to the concentration of the lower	t non-zero calibration standard?	$\frac{\Lambda}{V}$				
		Are upediusted MOL a included in the laboratory data and	non-zero canoration standard?		······	<u> </u>	<u> </u>	
D10	OT	Are unaquisted MQLs included in the laboratory data packa	180:	A	1.00		with 17	Juli en
<b>N10</b>		Are all known problems/anomalies	t in this I BC and ED?	1985) V	1.25	iniare S	7.44	1.4.6
		Were all accordent operating and special conditions noted	a mulis LKC and EK?					
	i i	were an necessary corrective actions performed for the rep	oneu data?	A	1		· · ·	
		Wessentischie and sociable to the state of the last	COT to initiation the second strength	37				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 2.

NA = Not applicable; NR = Not reviewed; 3.

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

Ap	pen	dix A (cont'd): Laboratory Review Checklist:	Reportable Data					
Lab	orato	ry Name: STL-Houston LRC	Date: 09/27/04					
Proj	ect N	lame: HWPW Labo	pratory Job Number: 281075					
Rev	iewer	· Name: LG Prep	Batch Number(s): 110850-SV SIM					
# <sup>1</sup>	A <sup>2</sup>	Description	· · · · · · · · · · · · · · · · · · ·	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
<b>S1</b>	ŌĪ	Initial calibration (ICAL)		104C	ing.r	2.8 4	S. (20)	1.5.2
		Were response factors and/or relative response factors for each an	alvte within OC limits?	x				<u> </u>
		Were percent RSDs or correlation coefficient criteria met?		X		-		
		Was the number of standards recommended in the method used for	or all analytes?	X				<u> </u>
		Were all points generated between the lowest and highest standard	i used to calculate the curve?	X				<u> </u>
	•	Are ICAL data available for all instruments used?		X				
		Has the initial calibration curve been verified using an appropriate	e second source standard?	X				<u> </u>
S2	OI	Initial and continuing calibration verification (ICCV and CCV	) and continuing calibration	e cano	n zak	3. A. M. M.	1 1923	- 71 (C
		Was the CCV analyzed at the method-required frequency?		X				1
		Were percent differences for each analyte within the method-requ	ired QC limits?	X			Ì	
		Was the ICAL curve verified for each analyte?	- · · · · · · · · · · · · · · · · · · ·	X		1		
		Was the absolute value of the analyte concentration in the inorgan	ic CCB < MDL?			X		
S3	0	Mass spectral tuning:			1987. 1987	1.54	1.12	11127
		Was the appropriate compound for the method used for tuning?		X				
		Were ion abundance data within the method-required OC limits?	·····	X				
S4	0	Internal standards (IS):			2		1.300	
	-	Were IS area counts and retention times within the method-requir	ed OC limits?		X			5
<b>S</b> 5	OI	Raw data (NELAC section 1 appendix A glossary, and section	5.12 or ISO/IEC 17025 section			Sec. Sec.	1.272 ×	-4832
		Were the raw data (for example, chromatograms, spectral data) re	viewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw	data?	X			1	
<b>S6</b>	0	Dual column confirmation		1.23	Sec.	- 	ST\$102.5	
		Did dual column confirmation results meet the method-required C	)C?	İ		X	1.	
<b>S</b> 7	0	Tentatively identified compounds (TICs):	•	2.5	122	1.4282	16736	120.00
		If TICs were requested, were the mass spectra and TIC data subje	ct to appropriate checks?			X		1
<b>S8</b>	I	Interference Check Sample (ICS) results:		335	: <b>\$</b> \$.	<u> 1</u>		
		Were percent recoveries within method QC limits?				X.	<u> </u>	1
<b>S</b> 9	I	Serial dilutions, post digestion spikes, and method of standard	additions	- 4°		285Q	N Sector	485
		Were percent differences, recoveries, and the linearity within the	QC limits specified in the method?			X		1
S10	OI	Method detection limit (MDL) studies		20	10 <del>12</del>	Sec. 3	1.12	1.875
		Was a MDL study performed for each reported analyte?		X				
		Is the MDL either adjusted or supported by the analysis of DCSs?		X				
S11	01	Proficiency test reports:		2.54	(SA)		din' e	2
		Was the laboratory's performance acceptable on the applicable pro-	oficiency tests or evaluation studies?	X				
S12	OI	Standards documentation		1971) 1971)		States.		8.5
		Are all standards used in the analyses NIST-traceable or obtained	from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures		40		10.92. <b>1</b> 5.	1963	
		Are the procedures for compound/analyte identification document	ted?	X				
S14	OI	Demonstration of analyst competency (DOC)		100	1.	13X,30	1.2.2.3	신하는
		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 f	ile?	X				
S15	OI	Verification/validation documentation for methods (NELAC C	Chap 5 or ISO/IEC 17025 Section 5)	18£	333	空影		$\xi_{\rm C} < \varepsilon$
-		Are all the methods used to generate the data documented, verifie	d, and validated, where applicable?	X				
<b>S16</b>	OI	Laboratory standard operating procedures (SOPs):	•	X.	$\{ i,j\}_{i=1}^{n}$	1.1	75.27	1975
		Are laboratory SOPs current and on file for each method performe	ed?	X				
L		L . Itomo identified by the letter "D" should be included in the laborate	au data apakaga subarittad ta the TOPO	 	000		 	<u> </u>

Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-re 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).

2 3 4 NA = Not applicable. NR = Not Reviewed.

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

Appen	idix A (cont'd): Laboratory Review Ch	necklist: Exception Reports
Laborate	ory Name: STL-Houston	LRC Date: 09/27/04
Project 1	Name: HWPW	Laboratory Job Number: 281075
Reviewe	er Name: LG	Prep Batch Number(s): 110850-SV SIM
ER # <sup>1</sup>	DESCRIPTION	
1	The laboratory received sample MW-09 2 sample was analyzed by method 8270C.	2SA04 even though it was not listed on the C-O-C. Per client's request, this
2	Five surrogate recoveries were above accep	tance limits due to matrix interference.
3	The 2,4-dinitrotoluene and pentachloropher interference.	nol recoveries in the MS and MSD were above acceptance limits due to matrix
4	The 1,2-diphenylhydrazine RPD was above	acceptance limits due to matrix interference.
5	The acenaphthene-d10, phenanthrene-d10, below acceptance limits. All of the interna acceptance limits. All of the internal standar requirements no corrective action was neces	chrysene-d12, and perylene-d12 internal standard areas in sample 281075-4 were al standard areas except 1,4-dichlorobenzene-d4 in sample 281075-6 were below ard areas in samples 281075-7 and 14 were below acceptance limits. Per method ssary.

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

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vo	0014419/60		LAB NUMB	ER (1993)			BOTT	LE ORDE	ER				2705IN									
COMPANY	ERM Southwest, Inc Houston		BILL TO	Sa la Sa	Union	Paci	ific Railroa	d			E		0V01 2/ TD	reh 00	a na	ckano						
END REPORT TO	Chris Young		INVOICE A	ITN 🏹	Geoff	Reed	ler				G	à l'	6461 2/ IN	nr uai	a ha	skaye						
ADDRESS	15810 Park Ten Place		ADDRESS		24125	Aldi	ne Westfiel	d Road														
	Suite 300	<u> </u>									ĸ											
a far an			2000 - 1000 -	56-1-1-7 56-1-1-7			<u> </u>				L	1										
CITY/STATE/ZIP	Houston, TX 77084		CITY/STAT	E/ZIP	Spring	g, TX	77373-9015						•									
PHONE	281-600-1000		PHONE		281-3	50-71	97													•		
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				PRESE	RVE	F	SAMPLE MA	TRIX	SAMPLE	DATE	SAMPL	ETIME	# CONTAINE	RAB	CD	EF	GΗI	Jк	: L M	ΝО	PQI	3
∧	1W-08-25A0+						Water	. (	7-13-1	04	132	23	7.	XX	X							t
2 P	-10-25A04	<u></u>	•				Water				14:	33	7	XX	X			$\square$				Ť
3 N	1W-07-2SA04		<del>, , , , , , , , , , , , , , , , , , , </del>				Water		4	<b>、</b>	154	3	7	XX	XI							Ī
4 8	0000 MW-5-25A04						Water	l	2-14	-04	90	8	7	XX	X			Π	TT		T	T
5 N	1W-11B-25404						Water		<u> </u>	-	10	3	7	XX	X						T	T
6	1W-04-25404	· · · · · · ·					Water			-	10-	<u>i</u> 7	.7	'XX	X,							
N N	1W-10B-25A0+						Water			~	112	23	7	XX	Х			$\square$				
8 P	-12-25A04		•	· .			Water		*		113	<i>3</i> 5	7	XX	X							T
Sampler: And	ulant Sanchez	Shipment N	Aethod:					Airbill	No.					Req	uired	Turr	Arour	ıd:	14	Days	/28	
1. Relinquished By	anlut	Date 9-14-04	2. Relinquish	ed By:					Da	ate	3. F	Relinqui	shed By:					-		Da	ate	
Company Name:	DERM	Time 1633	Company Na	me:					Ti	me	Con	npany	Name:				· ·			Ti	me	
I. Frecented By:	Korlin	99.9124.04	2. Received	By:		•			Da	ate	3. F	Receive	əd By:							Da	ate	
Company Name:	UST	Time' 33	Company Na	me:			÷.		Ti	me	Con	npany	Name:							Ti	me	
Severn Trent Lab	ooratories 6310 Rothway Drive	Houston,	TX 77040	713-	690-444	4 FA	X 713-690-5	646													÷,	
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SEVER									L					Ċ		Ľ	].	
TREN			СНА	IN	OF CU	S T O D Y	REC	ORD										
Cus	tomer Informatio	n		Pro	ject	Infor	matio	n			Analy	sis/	Met	thod	и с	io. 57	216-3	}
20	726270	····	PROJECT NA	ME	99000484/1	IWPW				A	8260							
VO	0014419/60		LAB NUMBER	RSAN		BO	TTLE ORDE	R			827051N		•					
COMPANY	ERM Southwest, Inc Houston		BILL TO		Union Paci	fic Railr	oad				Loval 2/ T						1.	
END REPORT TO	Chris Young			TN	Geoff Reed	ler		• • • • • • • • • • • • • • • • • • •		G	LEVEI 2/ I	nnr vai	ια μαικ	aye				
ADDRESS	15810 Park Ten Place		ADDRESS		24125 Aldi	ne Westfi	eld Road											
	Suite 300			20 Sin		* ,				- K								
	······································				• •	•				M						No. 57216-		
CITY/STATE/ZIP	Houston, TX 77084		CITY/STATE	ZIP	Spring, T)	77373-90	15					· .					•	•
PHONE	281-600-1000		PHONE		281-350-71	97	<u></u>			Q								e de e
FAX	281-600-1001		FAX	and a second	281-350-73	62				R S		· · ·				No. 57216-3	н це Ад	
	PLE DESCRIPTION		eressier i	PRESE	RVE AN F	SAMPLE N		AMPLE DA	TE SAI	MPLE TIN	ME # CONTAIN	IER A B	CDE	FGH	II J	KLM	NO	PQR
	BEB-091404					Water	, C	1-14-0	4 1	200	7	XX	XT					
_2 M	W-DIA-25:404					Water		·	1:	328	7	XX	XT		Π			
3 N	1W-DIAMS-ZSA04					Water			1	350	- 7	XX	XT					
_4 M	IW-DIA MSD-25A0.	+				Water			1	410	7	XX	XT		$\square$			
	1W-11A-25A04		·			Water			1	500	7	XX	XT					
M	1W-11AD-25A04	-				Haler		4	r [1	525	-7	XX	X					
ר	B01-25A04					Water					2	X						
8 .	0 \$					Water		1.										
Sampler ()	wt-Waters San	Shipment N	Method:		· · · ·		Airbill	No.:		<u> </u>	· ·	Req	uired T	FurnArc	ound:	14	Days	728
I. Relinquished By:	aulut	Date 9-14-04	2. Relinquished	d By:				Date		3. Reling	quished By:	- <b>-</b>					D	ate
Company Name:	JERM	Time	Company Nam	ne:				Time		Compan	iy Name:	-					Ti	ime
1. Received By:	Collin "	Plate fich	2. Received By	y:	•			Date		3. Recei	ived By:			,			D	vate
Company Name:	JSR	VU.33	Company Nam	ne:		÷.		Time		Compan	ny Name:						Ti	ime
levern Trent Lab	oratories 6310 Rothway Drive	Houston,	TX 77040	713-	690-4444 F#	X 713-690	-5646										• •	

rpjsckl	Job Sample Receipt Checklist Report	٧2
Job Number.: 281075 Location.: 5721 Customer Job ID: Project Number.: 99000484 Project Des Customer: ERM Southwest, Inc H	16 Check List Number.: 1 Description.: Job Check List Date.: 09/15/2004 scription.: UPRR-HWPW-0014419/60 Houston Contact.: Chris Young	Date of the Report: 09/15/2004 Project Manager: sgk
Questions ?	(Y/N) Comments	
Chain of Custody Received?	······Y	
If "yes", completed properly?	Y	
Custody seal on shipping container?	N	
If "yes", custody seal intact?		
Custody seals on sample containers?	N	
If "yes", custody seal intact?		
Samples chilled?	Y	
Temperature of cooler acceptable? (4 de	eg C +/- 2). Y 2.6,3.7,4.6,2.1,3.6	
If "no", is sample an air matrix?(no	b temp req.)	
Thermometer ID	Y 405	•
Samples received intact (good condition	DR. Y TOOLEIN	1
Volatile samples acceptable? (no headsp	Dace)	T
Correct containers used?	······ Y	· ·
Adequate sample volume provided?	Y	
Samples preserved correctly?	Υ	
Samples received within holding-time?	Y	
Agreement between COC and sample labels	s?Y	
Radioactivity at or below background le	evels? Y	and an
Additional	·····	
Comments		
Sample Custodian Signature/Date	Y EIB	
· ·	Page 1	

15

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				· · · · · · · · · · · · · · · · · · ·	
]	CLIENT NAME ERMSW	- SAMPLE RECEI	ER/DRIVER N	AMECITENT	
	PROJECT:	UNPA		3	
	DATE RECEIVED:	UNPA	CKED STAMP:_		
	TOTAL # COOLERSIBECEMED:	OLER CHECKLIST	-	104 SEP 15 /H 7: 6	•
	COOLER ID COC CUSTODY TAPE PRESENT (Y/N) PRESENT INTACT (Y/N) (Y/N)	COOLER THERI	M TEMP BLK PRESENT (Y/N)	List Sample Bottles in Each Cooler if out of Temperature	
.	WIBUE Y BY Y	2.4 405	N		
	$W B_{259} Y = \frac{1}{2}$	3.7402	N		
1	WW334 Y = 1 -1	4.6 40.	<u> N</u>		
STL HOUSTON - SAMPLE RECEIPT CHECKLIST         CUENT MAME         PROJECT       UNPACKED BY THE STAMP         DATE RECEIVED       UNPACKED BY THE STAMP         TOTAL # DOOLERSPECTIVE COLLEGY TAKE       COOLER CHECKLIST         COOLER ID       PROJECT         UNPACKED BY THE STAMP       COOLER TO PRESENT WITACT         COOLER ID       PROJECT         UNPACKED BY THE STAMP       COOLER TO PRESENT WITACT         COOLER ID       PROJECT         UNPACKED BY THE STAMP       COOLER TO PRESENT WITACT         COOLER ID       PROJECT         UNPACKED STAMP       STATUS         SHORT FOLD / PUSH SAMPLES TORES sector       Monteor OVAN VISIT         SHORT FOLD / PUSH SAMPLES TORES sector       Monteor OVAN VISIT         UNPACKED STAMP       SHORT FOLD / PUSH SAMPLES         UNPACKED STENDES TENDES sector       Monteor OVAN VISIT         UNPACKED STENDES TENDES sector       Monteor OVAN VISIT         UNPACKED STATUS       SHORT FOLD / PUSH STAMPLES TOTALS </td					
STL HOUSTON - SAMPLE RECEIPT CHECKLIST         CLENT MARE         PROJECT         DATE RECEIVED         UNPACKED B					
l	· · · · · · · · · · · · · · · · · · ·				
		**************************************	JOB NUMBER	38075	•.
	(If ANY headspace is present, list details in INCONSISTENCIES pH OF WATER SAMPLES	section)	Number of VO.		<b>.</b> •
1	PRESERVATION # BOTTLES	CORRECT pH (Y/N)	lf N, List sa	mple ID and Corresponding pH	
	H2SO4 (<2) HNO3 (<2)				
]	HCL (<2) (Not VOA Vials) NaOH - Cyanide (>12) NaOH/Zn Acetate - Sulfide (>9)				
ן נ	# OF NEAT BOTTLES:	<u> </u>	# OF SOIL JA	RS:	
]	PORDINON AWINCOUSUSTENDES-	Place in Job Algles a		=MW-M-25	A,
] (	2/14/04 13.37				
ľ	PERSON CON TACTED:	ACTION TAKEN	DATE:		
7					-
4	NOTES				:
COOLER CLUST         COOLER ID       PRESENT         COOLER ID       PRESENT         INTACT         TEMP					
7	Project Manager		(Use b	aux of sheet if necessary)	
]		· · ·		· · · · · · · · · · · · · · · · · · ·	
ר					
Ţ	SA 1	52, Rev 11 12/0	3		

		Cł	RRIER/DRIVER NAM	1E	<u></u> (1) (1) (1)
	<u></u>	۰. ۱			<u></u>
DATE RECEIVED:	·····	. UN	PACKED STAMP:		•
TOTAL # COOLERS RECEIVED:		OOLER CHECK	JST -	SEP 15 M 7:	
COOLER ID COC	CUSTODY TAPE			List Sample Bottles in Each Cooler if	<u> </u>
(Y/N)	ESENT INTACT	(°C)	U PRESENT (Y/N)	очто тетпрегатите	
TATE	(Y/N) (Y/N)		·		· · ·
1057 V B-	HH H	-2.1 4	05 11		
WWII VI C	YV	-2101	107 17		
		- July -	1-0 N		
В					
C = COOLER B = BOTTLES COOLER(S) SCREENED FOR RADIA	TION? Yes		BLK N, HOW WAS 1	ГЕМР TAKEN:	
SHORT HOLD /	RUSH SAMPLES	(include departme	int delivered to and l	time delivered)	
	·				<u></u>
***********	*********	*****	(*******	*****	
SPECIFIC PROJECT INFORMATION		· .			
			JUR NUMBED		
VOLATILE HE ADSPACE ACCEPTAB	LE? Yes No	NA	JOB NUMBER: Marked As Prese	erved? Yes No	
VOLATILE HE ADSPACE ACCEPTABI If ANY headspace is present, list details in bH OF WATER SAMPLES	LE? Yes No	NA section)	JUB NUMBER:_ Marked As Prese Number of VOA '	erved? Yes No Vials:	
VOLATILE HE ADSPACE ACCEPTABI (If ANY headspace is present, list details in pH OF WATER SAMPLES PRESERVATION	LE? Yes No INCONSISTENCIES	NA section) CORRECT ρH (Y/N)	JOB NUMBER:_ Marked As Prese Number of VOA	Prved? Yes No Vials: ple ID and Corresponding pH	· · · · · ·
VOLATILE HE ADSPACE ACCEPTABI (If ANY headspace is present, list details in pH OF WATER SAMPLES PRE SERVATION H2SO4 (<2) HNO3 (<2)	LE? Yes No INCONSISTENCIES	NA section) CORRECT ρH (Y/N)	JOB NUMBER:_ Marked As Prese Number of VOA If N, List sam	Prved? Yes No Vials: ple ID and Corresponding pH	
VOLATILE HEADSPACE ACCEPTABI (If ANY headspace is present, list details in pH OF WATER SAMPLES PRESERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials)	LE? Yes No INCONSISTENCIES # BOTTLES	NA section) CORRECT ρH (Y/N)	JOB NUMBER:_ Marked As Prese Number of VOA If N, List sam	Prved? Yes No Vials: ple ID and Corresponding pH	
VOLATILE HE ADSPACE ACCEPTABI (If ANY headspace is present, list details in pH OF WATER SAMPLES PRE SERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH - Cyani de (>12) NaOH/Zn Acetate - Sulfide (>9)	LE? Yes No INCONSISTENCIES # BOTTLES	NA section) CORRECT pH (Y/N)	JOB NUMBER:_ Marked As Prese Number of VOA	Prved? Yes No Vials: ple ID and Corresponding pH	
VOLATILE HE ADSPACE ACCEPTABI (If ANY headspace is present, list details in pH OF WATER SAMPLES PRE SERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH – Cyanide (>12) NaOH/Zn Acetate – Sulfide (>9) Other	LE? Yes No INCONSISTENCIES	NA section) CORRECT ρH (Y/N)	JOB NUMBER:_ Marked As Prese Number of VOA	erved? Yes No Vials: ple ID and Corresponding pH	
VOLATILE HE ADSPACE ACCEPTABI (If ANY headspace is present, list details in pH OF WATER SAMPLES PRE SERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH – Cyanide (>12) NaOH/Zn Acetate – Sulfide (>9) Other # OF NEAT BOTTLES:	LE? Yes No INCONSISTENCIES	NA section) CORRECT ρH (Y/N)	JOB NUMBER:_ Marked As Prese Number of VOA If N, List sam If N, List sam W OF SOIL JARS	Prved? Yes No Vials: ple ID and Corresponding pH	
VOLATILE HE ADSPACE ACCEPTAB If ANY headspace is present, list details in bH OF WATER SAMPLES PRE SERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH – Cyanīde (>12) NaOH/Zn Acetate – Sulfide (>9) Other # OF NEAT BOTTLES: INC	LE? Yes No INCONSISTENCIES # BOTTLES	NA section) CORRECT ρH (Y/N)	JUB NUMBER:_ Marked As Prese Number of VOA If N, List sam # OF SOIL JARS	Prved? Yes No Vials: ple ID and Corresponding pH	
VOLATILE HE ADSPACE ACCEPTABI If ANY headspace is present, list details in oH OF WATER SAMPLES PRE SERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH - Cyani de (>12) NaOH/Zn Acetate - Sulfide (>9) Other t OF NEAT BOTTLES: INC	LE? Yes No INCONSISTENCIES # BOTTLES	NA section) CORRECT pH (Y/N)	JOB NUMBER:_ Marked As Prese Number of VOA If N, List sam # OF SOIL JARS	Prved? Yes No Vials: ple ID and Corresponding pH	
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VOLATILE HE ADSPACE ACCEPTABI If ANY headspace is present, list details in ph OF WATER SAMPLES PRESERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH - Cyanī de (>12) NaOH/Zn Acetate - Sulfide (>9) Other # OF NEAT BOTTLES: INC PERSON CON TACTED:	LE? Yes No INCONSISTENCIES # BOTTLES	NA section) CORRECT pH (Y/N) Place in Job Note	JOB NUMBER: Marked As Prese Number of VOA V If N, List sam # OF SOIL JARS s as well (CTRL F-1;	<pre>Prved? Yes No Vials: ple ID and Corresponding pH ;: 2)</pre>	
VOLATILE HE ADSPACE ACCEPTABI If ANY headspace is present, list details in ph OF WATER SAMPLES PRESERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH - Cyanī de (>12) NaOH/Zn Acetate - Sulfide (>9) Other # OF NEAT BOTTLES: INC PERSON CON TACTED:	LE? Yes No INCONSISTENCIES # BOTTLES	NA section) CORRECT pH (Y/N) Place in Job Note	JOB NUMBER: Marked As Prese Number of VOA V If N, List sam # OF SOIL JARS s as well (CTRL F-1;	Prved? Yes No         Vials:         ple ID and Corresponding pH	
VOLATILE HE ADSPACE ACCEPTABI If ANY headspace is present, list details in ph OF WATER SAMPLES PRESERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH - Cyanide (>12) NaOH/Zn Acetate - Sulfide (>9) Other # OF NEAT BOTTLES: INC PERSON CON TACTED: RESOLUTION	LE? Yes No INCONSISTENCIES # BOTTLES	NA section) CORRECT pH (Y/N) Place in Job Note	JUB NUMBER: Marked As Prese Number of VOA V If N, List sam # OF SOIL JARS s as well (CTRL F-1;	Prved? Yes No         vials:         ple ID and Corresponding pH	
VOLATILE HE ADSPACE ACCEPTABI If ANY headspace is present, list details in ph OF WATER SAMPLES PRESERVATION 12SO4 (<2) 1AO3 (<2) 1CL (<2) (Not VOA Vials) NaOH - Cyanide (>12) NaOH/Zn Acetate - Sulfide (>9) Other # OF NEAT BOTTLES: INC PERSON CON TACTED: RESOLUTION NOTES	LE? Yes No INCONSISTENCIES # BOTTLES CONSISTENCIES -	NA section)	JUB NUMBER: Marked As Prese Number of VOA V If N, List sam # OF SOIL JARS s as well (CTRL F-1;	Prved? Yes No         vials:         ple ID and Corresponding pH	
VOLATILE HE ADSPACE ACCEPTABI (If ANY headspace is present, list details in ph OF WATER SAMPLES PRESERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH - Cyanide (>12) NaOH/Zn Acetate - Sulfide (>9) Other # OF NEAT BOTTLES: INC PERSON CON TACTED: RESOLUTION NOTES	LE? Yes No INCONSISTENCIES # BOTTLES CONSISTENCIES -	NA section)	JUB NUMBER: Marked As Prese Number of VOA V If N, List sam # OF SOIL JARS s as well (CTRL F-1;  DATE: USE bar	<pre>erved? Yes No vials: ple ID and Corresponding pH  ;: 2)  ck of sheet if necessarv)</pre>	
VOLATILE HE ADSPACE ACCEPTABI (If ANY headspace is present, list details in ph OF WATER SAMPLES PRESERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH - Cyanide (>12) NaOH/Zn Acetate - Sulfide (>9) Other # OF NEAT BOTTLES: INC PERSON CON TACTED: RESOLUTION Project Manager	LE? Yes No INCONSISTENCIES # BOTTLES CONSISTENCIES -	NA section)	JUB NUMBER: Marked As Prese Number of VOA V If N, List sam # OF SOIL JARS ** as well (CTRL F-1; 	erved? YesNo vials: ple ID and Corresponding pH  :: 2)  ck of sheet if necessary)	
VOLATILE HE ADSPACE ACCEPTABI (If ANY headspace is present, list details in pH OF WATER SAMPLES PRESERVATION H2SO4 (<2) HNO3 (<2) HCL (<2) (Not VOA Vials) NaOH – Cyanide (>12) NaOH/Zn Acetate – Sulfide (>9) Other # OF NEAT BOTTLES: INC PERSON CONTACTED: RESOLUTION IOTES 'roject Manager	LE? Yes No INCONSISTENCIES # BOTTLES CONSISTENCIES -	NA section)	JUB NUMBER: Marked As Prese Number of VOA V If N, List sam # OF SOIL JARS ** as well (CTRL F-1)  DATE:  USE bac	<pre>erved? Yes No ple ID and Corresponding pH 2) ck of sheet if necessary)</pre>	

SEVERN	CTI	
TRE N.T.S	JIL	

Job Number: 281075		TRRP	Labo	ratory	Test I	Results	5	I I	Date:	10/13/2	004
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT: HWI	₽₩			ATTN	Chris Young			
Customer Sample ID:MW-08-Date/Time Sampled09/13/20Date/Time Received09/14/20	2SA04 004 13:23 004 16:33		•			Laborato Sample ]	ory Sample ID: Matrix	281075-001 Water	: • . •		
TEST METHOD	CAS #	RESULT	Q FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Tim	e Batch	D.F.	Analys
Method: SW-846 8260B, Water											- # A
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	09/18/2004 17:13	3 111218	. 1	zfl
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	09/18/2004 17:1:	3 111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	09/18/2004 17:1:	3 111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	09/18/2004 17:13	3 11.1218	1	zfl
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	09/18/2004 17:1	3 111218	1	zfl
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	09/18/2004 17:12	3 111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	09/18/2004 17:1	3 111218	1	zfl

Form I

# SEVERN STL

Job Number: 281075	TRRP Laboratory Test Results								Date:	10/13/2	.004		
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	EC]	ſ: HWI	₽₩			ATTN	: Chris Young				
Customer Sample ID:MW-08-Date/Time Sampled09/13/20Date/Time Received09/14/20	2SA04 04 13:23 04 16:33						Laborato Sample I	ory Sample ID: Matrix	281075-001 Water				
TEST METHOD	🌐 CAS #	RESULT	Q	FLAG	MDL	् MQL	SQL	UNITS	Analysis Date/Ti	me Batch	D.F.	Analyst	
Method: SW-846 8270C, Water												/0	12410
1,2-Diphenylhydrazine	122-66-7	0.00001	υ	иJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 16:	21   11155	4 1	lg1	usc
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/21/2004 13:	23 11156	3 1	lgl	
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L.	09/21/2004 16:	21 11155	4 1	lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	υ		0.000027	0.0001	0.000026	mg/L	09/21/2004 16:	21 11155	4 1	lg1	
2-Chloronaphthalene	91-58-7	0.000076	υ		0.00008	0.0005	0.000076	mg/L	09/21/2004 13:	23 11156	3 1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/21/2004 13:	23 11156	3 1	lg1	
2-Methylnaphthalene	91-57-6	0.000067	υ		0.00007	0.0005	0.000067	mg/L	09/21/2004 13:	23 11156	3 1	lg1	
4-Nitrophenol	100-02 <b>-</b> 7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/21/2004 13:	23 11156	3 1	lg1	
Acenaphthene	83-32-9	0.000074	U		0.000078	0.0005	0.000074	mg/L	09/21/2004 13:	23 11156	3 1	lg1	
Acenaphthylene	208-96-8	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/21/2004 13:	23 11156	3 1	lg1	
Anthracene	120-12-7	0.000307	J		0.00013	0.0005	0.000124	mg/L	09/21/2004 13:	23 11156	3 1	lg1	İ
Benzo(a)anthracene	56-55-3	0.000267	υ		0.00028	0.0005	0.000267	mg/L	09/21/2004 13:	23 11156	3 1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 16:	21 11155	4 1	lgl	
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009 ,	0.0001	0.000009	mg/L	09/21/2004 16:	21 11155	4 1	lg1	

Form I

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SEVERN	STL
彩LIKE NIL语	

Job Number: 281075		TRRP	La	abor	atory '	Test F	Results	5	 	Da	ate: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT	: HWF	W 🔅			ATTN	: Chris You	ng 🔆				
Customer Sample ID: MW-08-	2SA04			·			Laborato	ory Sample ID:	281075-001				۰.	
Date/Time Sampled: 09/13/20	04 13:23						Sample I	Matrix:	Water					
Date/Time Received: 09/14/20	04 16:33													ŀ
TEST METHOD	CAS#	RESULT	QI	FLAG	MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000689			0.00018	0.0005	0.000172	mg/L	09/21/2004	13:23	111563	1	lg1 ″	1296
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/21/2004	13:23	111563	1	lgl	
Dibenzofuran	132-64-9	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/21/2004	13:23	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000449	J	μ	0.00015	0.0005	0.000143	mg/L	09/21/2004	13:23	111563	1	lg1	ue
Fluoranthene	206-44-0	0.000287	J		0.000098	0.0005	0.000093	mg/L	09/21/2004	13:23	111563	1	lgl	
Fluorene	86-73-7	0.000068	U		0.000071	0.0005	0.000068	mg/L	09/21/2004	13:23	111563	1	lg1	
Naphthalene	91-20-3	0.000067	U	uJ	0.00007	0.0005	0.000067	mg/L	09/21/2004	13:23	111563	. 1	lg1	LB
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/21/2004	13:23	111563	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/21/2004	13:23	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004	16:21	111554	1.	lg1	
Phenanthrene	85-01-8	0.000077	U		0.000081	0.0005	0.000077	mg/L	09/21/2004	13:23	111563	1	lg1	
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/21/2004	13:23	111563	1	lg1	
Pyrene	129-00-0	0.000412	J		0.000088	0.0005	0.000084	mg/L	09/21/2004	13:23	111563	<sup>2</sup> . 1 <sup>2</sup> .	lg1	
					,									· ·

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**TRRP** Laboratory Test Results Job Number: 281075 10/13/2004 Date: CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: HWPW ATTN: Chris Young Laboratory Sample ID: 281075-002 Customer Sample ID: P-10-2SA04 Date/Time Sampled .....: 09/13/2004 14:33 Sample Matrix .....: Water Date/Time Received .....: 09/14/2004 16:33 Q FLAG TEST METHOD CAS #-RESULT MDL UNITS Analysis Date/Time Batch D.F. MQL SQL Analyst Method: SW-846 8260B, Water 8.2  $-\frac{1}{2}$ . Se al se à 1.2-Dichloroethane 107-06-2 0.00136 U 0.00136 0.005 0.00136 09/18/2004 17:40 111218 1 zfl mg/L 71-43-2 0.00143 U 0.00143 0.005 0.00143 09/18/2004 17:40 111218 zfl Benzene mg/L 1 Chlorobenzene 108-90-7 0.00155 IJ 0.00155 0.005 0.00155 09/18/2004 17:40 111218 zfl ·mg/L 1 Ethylbenzene 0.00137 U 0.00137 0.005 0.00137 09/18/2004 17:40 111218 100-41-4 .1 zfl mg/L Methylene Chloride 75-09-2 0.0013 U 0.0013 0.005 0.0013 mg/L 09/18/2004 17:40 111218 1 zfl Toluene 108-88-3 0.00136 U 0.00136 0.005 0.00136 09/18/2004 17:40 111218 zfl mg/L 1 0.00441 Xylenes (total) 1330-20-7 0.00441 IJ 0.015 0.00441 mg/L 09/18/2004 17:40 111218 1 zfl Page 21 Form I

Lab Marsham 201075	<b>31</b> .		TRRP	L	aboı	ratory	Test F	Results	S	· · · ·		· · · · ·	0/12/2	004
CUSTOMER: ERM Southwest,	Inc Hou	ston	PROJ	IEC.	Г: HWF	PW			ÂTTN	: Chris You	Da ng		10/13/2	004
Customer Sample ID: Date/Time Sampled: Date/Time Received:	P-10-2S 09/13/20 09/14/20	A04 004 14:33 004 16:33		iter Colta				Laborate Sample I	bry Sample ID: Matrix	281075-002 Water	2			
TEST METHOD		CAS#	RESULT	Q	FLÁG	MDL	MQL	SQL	· UNITS	Analysis Dat	e/Time	Batch	·D,F.	Analyst
Method: SW-846 8270C, Wa	iter											and the set of		1
1,2-Diphenylhydrazine		122-66-7	0.000011	U	w	0.000011	0.0001	0.000011	mg/L	09/21/2004	16:49	111554	1	lg1
2,4-Dimethylphenol		105-67-9	0.000117	U		0.000122	0.0005	0.000117	mg/L	09/21/2004	13:51	111563		lg1
2,4-Dinitrotoluene		121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004	16:49	111554	1	lg1
2,6-Dinitrotoluene		606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004	16:49	111554	1	lg1
2-Chloronaphthalene		91-58-7	0.000077	U		0.00008	0.0005	0.000077	mg/L	09/21/2004	13:51	111563		lgl
2-Methyl-4,6-dinitrophenol		534-52-1	0.000298	σ		0.00031	0.0015	0.000298	mg/L	09/21/2004	13:51	111563		lgl
2-Methylnaphthalene		91-57-6	0.00264			0.00007	0.0005	0.000067	mg/L	09/21/2004	13:51	111563		lg1
4-Nitrophenol		100-02-7	0.000288	U		0.000299	0.0015	0.000288	mg/L	09/21/2004	13:51	111563	1	lg1
Acenaphthene		83-32-9	0.0244			0.000078	0.0005	0.000075	mg/L	09/21/2004	13:51	111563	1	lg1
Acenaphthylene		208-96-8	0.000179	J		0.00008	0.0005	0.000077	mg/L	09/21/2004	13:51	111563	1	lg1
Anthracene		120-12-7	0.000798			0.00013	0.0005	0.000125	mg/L	09/21/2004	13:51	111563	- 1 -	lg1
Benzo(a)anthracene		56-55-3	0.000269	U	1	0.00028	0.0005	0.000269	mg/L	09/21/2004	13:51	111563	· 1	lg1

Benzo(a)pyrene

bis(2-chloroethoxy)methane

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mg/L

09/21/2004 16:49 111554

09/21/2004 16:49 111554

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lg1



Job Number: 281075 TRRP Laboratory Test Results Date: 10/13/2004 CUSTOMER: ERM Southwest Inc. Houston														
CUSTOMER: ERM Southwest, Inc	Houston 🗧 🕼	PROJ	EC	r: Hwi	• W			ATTN	: Chris You	ng				
Customer Sample ID: P- Date/Time Sampled	10-2SA04 /13/2004 14:33 /14/2004 16:33						Laborate Sample I	ory Sample ID: Matrix:	281075-002 Water	2				
TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000173	U		0.00018	0.0005	0.000173	mg/L	09/21/2004	13:51	111563	1	lg1	¥29/6
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/21/2004	13:51	111563	1	lg 1	
Dibenzofuran	132-64-9	0.00643			0.00008	0.0005	0.000077	mg/L	09/21/2004	13:51	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000456	J	ч	0.00015	0.0005	0.000144	mg/L	09/21/2004	13:51	111563	1	lg1	Loc_
Fluoranthene	206-44-0	0.000474	J		0.000098	0.0005	0.000094	mg/L	09/21/2004	13:51	111563	1	lg1	
Fluorene	86-73-7	0.00768			0.000071	0.0005	0.000068	mg/L	09/21/2004	13:51	111563	1	_lg1	
Naphthalene	91-20-3	0.119		Ъ	0.00007	0.0005	0.00034	mg/L	09/23/2004	15:25	111563	5	lg1	er
Nitrobenzene	98-95-3	0.000144	υ		0.00015	0.0005	0.000144	mg/L	09/21/2004	13:51	111563	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/21/2004	13:51	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004	16:49	111554	- 1	lg1	
Phenanthrene	85-01-8	0.00234		JH	0.000081	0.0005	0.000078	mg/L	09/21/2004	13:51	111563	1	lg1 ر	be
Phenol	108-95-2	0.0000962	U		0.0001	0.0005	0.0000962	≥ mg/L	09/21/2004	13:51	111563	1	lg1	
Pyrene	129-00-0	0.000221	J		0.000088	0.0005	0.000085	mg/L	09/21/2004	13:51	111563	• 1 ·	lg1	
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Form I				Page 2	3				· · · · · · · · · · · · · · · · · · ·					]

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Job Number: 281075		TRRP	La	bor	atory '	Test F	Results	5	•	Da	ate: 1	0/13/2	004
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT:	,HWP	W			ATTN	: Chris You	ng			
Customer Sample ID:MW-07Date/Time Sampled09/13/20Date/Time Received09/14/20	-2SA04 004 15:43 004 16:33						Laborato Sample l	ory Sample ID: Matrix	281075-003 Water	3			
TEST METHOD	CAS#	RESULT	QF	LAG	MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	• D.F. 🤇	Analyst
Metnod: SW-846 8260B, Water										n an			
1,2-Dichloroethane	107-06-2	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004	18:08	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004	18:08	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004	18:08	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	บ		0.00137	0.005	0.00137	mg/L	09/18/2004	18:08	11.1218	1	zfl -
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004	18:08	111218	1	zfl
Toluene	108-88-3	0.00136	บ		0.00136	0.005	0.00136	mg/L	09/18/2004	18:08	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004	18:08	111218	1	zfl
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Job Number: 281075	·	TRRP	Labo	ratory	Test I	Results	3		Da	ate: 1	0/13/2	004
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT: HW	PW			ATTN	: Chris Your	ng	•		
Customer Sample ID: MW-07-	2SA04					Laborato	ory Sample ID:	281075-003				
Date/Time Sampled: 09/13/20	04 15:43					Sample I	Matrix	Water				
Date/Time Received: 09/14/20	004 16:33	•										
TEST METHOD	, CAS #	RESULT	QFLAC	MDL	MQL	SQL	UNITS	Analysis Date	/Time	Batch	D.F.	Analyst
Method: SW-846 8270C, Water						In adulti Ball an art a artic						10
1,2-Diphenylhydrazine	122-66-7	0.000011	UW	0.000011	0.0001	0.000011	mg/L	09/21/2004	17:17	111554	1	lg1 ¢
2,4-Dimethylphenol	105-67-9	0.000118	U	0.000122	0.0005	0.000118	mg/L	09/21/2004	14:19	111563	1	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	U	0.000009	0.0001	0.000009	mg/L	09/21/2004	17:17	111554	1	lg1
2,6-Dinitrotoluene	606-20-2	0.000026	υ	0.000027	0.0001	0.000026	mg/L	09/21/2004	17:17	111554	1	lgl
2-Chloronaphthalene	91-58-7	0.000078	U ·	0.00008	0.0005	0.000078	mg/L	09/21/2004	14:19	111563	-1	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.000301	U	0.00031	0.0015	0.000301	mg/L	09/21/2004	14:19	111563	-1	lgl
2-Methylnaphthalene	91-57-6	0.000068	U	0.00007	0.0005	0.000068	mg/L	09/21/2004	14:19	111563	1	lg1
4-Nitrophenol	100-02-7	0.00029	U	0.000299	0.0015	0.00029	mg/L	09/21/2004	14:19	111563	1	lg1
Acenaphthene	83-32-9	0.000076	U	0.000078	0.0005	0.000076	mg/L	09/21/2004	14:19	111563	· 1	lg1
Acenaphthylene	208-96-8	0.000078	U	0.00008	0.0005	0.000078	mg/L	09/21/2004	14:19	111563	1	lg1
Anthracene	120-12-7	0.000955		0.00013	0.0005	0.000126	mg/L	09/21/2004	14:19	111563	1	lg1
Benzo(a)anthracene	56-55-3	0.000272	υ	0.00028	0.0005	0.000272	mg/L	09/21/2004	14:19	111563	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	09/21/2004	17:17	111554	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	09/21/2004	17:17	111554	1	lg1

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Job Number: 281075		TRRP	Labo	ratory	Test I	Results	5	• • •	Da	ite: 1	0/13/2	004	
CUSTOMER: ERM Southwest, IncHo	ouston	PROJ	ECT: HW	PW <sup>™</sup> ⊂, S			ATTN	l: Chris You	ng				
Customer Sample ID: MW-0	7-2SA04					Laborato	ory Sample ID:	281075-003	}		÷		•
Date/Time Sampled: 09/13/	2004 15:43					Sample M	Matrix:	Water					· .
Date/Time Received: 09/14/	2004 16:33	•											
TEST METHOD	CAS#	RESULT	Q FLAG	MDL	MQL	SQL	UNITS	Analysis Date	e/Time	Batch	D.F.	Analyst	10/29/0
bis(2-ethylhexyl)phthalate	117-81-7	0.000175	U	0.00018	0.0005	0.000175	mg/L	09/21/2004	14:19	111563	. 1	lg1	, , , ,
Chrysene	218-01-9	0 000091	Inl	0 000094	0.0005	0 000091	mg/L	09/21/2004	14.19	111563	. 1	101	

Chrysene	218-01-9	0.000091	U		0.000094	0.0005	0.000091	mg/L	09/21/2004	14:19	111563	·· 1	Igi	
Dibenzofuran	132-64-9	0.000078	U		0.00008	0.0005	0.000078	mg/L	09/21/2004	14:19	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000238	J	K	0.00015	0.0005	0.000146	mg/L	09/21/2004	14:19	111563	1	lg1	is.
Fluoranthene	206-44-0	0.000352	J		0.000098	0.0005	0.000095	mg/L	09/21/2004	14:19	111563	1	lg1	
Fluorene	86-73-7	0.000069	U		0.000071	0.0005	0.000069	mg/L	09/21/2004	14:19	111563	1	lg1	
Naphthalene	91-20-3	0.000068	U	ИJ	0.00007	0.0005	0.000068	mg/L	09/21/2004	14:19	111563	1	lg1	ርዌራ-
Nitrobenzene	98-95-3	0.000146	υ		0.00015	0.0005	0.000146	mg/L	09/21/2004	14:19	111563	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.000091	U		0.000094	0.0005	0.000091	mg/L	09/21/2004	14:19	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000039	U	. · · ·	0.00004	0.0003	0.000039	mg/L	09/21/2004	17:17	111554	1	lg1	
Phenanthrene	85-01-8	0.000079	U		0.000081	0.0005	0.000079	mg/L	09/21/2004	14:19	111563	- 1	lg1	
Phenol	108-95-2	0.0000971	U		0.0001	0.0005	0.0000971	mg/L	09/21/2004	14:19	111563	1	lg1	•
Pyrene	129-00-0	0.000563			0.000088	0.0005	0.000085	mg/L	09/21/2004	14:19	111563	1	lg1	
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Job Number: 281075	· · ·	TRRP	La	borator	y Test	Result	S	<i>i</i>	Da	ate: 1	.0/13/20	004
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT;	HWPW			ATTN	l: Chris You	ng			
Customer Sample ID:MW-5-2Date/Time Sampled09/14/20Date/Time Received09/14/20	SA04 004 9:08 004 16:33					Laborate Sample	ory Sample ID: Matrix:	281075-004 Water	1			
TEST METHOD	🔆 🔆 CAS #	RESULT	Q FI	LAG MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	D.F.	Analysi
Method: SW-846 8260B, Water						<ol> <li>δ. (1) - (</li></ol>			tani yana			
1,2-Dichloroethane	107-06-2	0.00136	U	0.001:	0.005	0.00136	mg/L	09/18/2004	18:36	111218	1	zfl
Benzene	71-43-2	0.00143	U	0.0014	0.005	0.00143	mg/L	09/18/2004	18:36	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.001:	0.005	0.00155	mg/L	09/18/2004	18:36	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.001	0.005	0.00137	mg/L	09/18/2004	18:36	11.1218	1	zfl
Methylene Chloride	75-09-2	0.0013	U	0.001	3 0.005	0.0013	mg/L	09/18/2004	18:36	111218	1	zfl
Toluene	108-88-3	0.00136	U	0.001	0.005	0.00136	mg/L	09/18/2004	18:36	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U	0.004	0.015	0.00441	mg/L	09/18/2004	18:36	111218	1	zfl
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Job Number: 281075	 • •	TRRP	L	aboi	atory '	Test F	Results	S		Date	: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hous	ston	PROJI	EĆT	r: HWI	•W			ATTN	: Chris Young					
Customer Sample ID:MW-5-2Date/Time Sampled09/14/20Date/Time Received09/14/20	SA04 004 9:08 004 16:33						Laborato Sample	ory Sample ID: Matrix:	281075-004 Water			· ·		
TEST METHOD	CAS#	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/T	ime E	Batch	D.F.	Analyst	-
Method: SW-846 8270C, Water						n film an ann an Airtean Airtean Airtean Airtean Airtean				े हैं। - देने - अस			n n	29/04
1,2-Diphenylhydrazine	122-66-7	0.00001	U	шŢ	0.000011	0.0001	0.00001	mg/L	09/21/2004 17	:45 11	11554	1	lg1	LBG
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/22/2004 21	:47 11	11563	1	lg1	
2,4-Dinitrotoluene	121-14 <b>-</b> 2	0.000009	U	ur	0.000009	0.0001	0.000009	mg/L	09/21/2004 17	:45 11	11554	1	lg1	USC.
2,6-Dinitrotoluene	606-20-2	0.000026	บ	υJ	0.000027	0.0001	0.000026	mg/L	09/21/2004 17	:45 11	1.1554	1	lg1	Low.
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/22/2004 21	:47 11	11563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/22/2004 21	:47 11	11563	1	lg1	
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	09/22/2004 21	:47 11	11563	1	lg1	
4-Nitrophenol	100-02-7	0.000285	υ		0.000299	0.0015	0.000285	mg/L	09/22/2004 21	:47 1	11563	1	lg1	
Acenaphthene	83-32-9	0.00156			0.000078	0.0005	0.000074	mg/L	09/22/2004 21	:47 11	11563	. 1	lg1	
Acenaphthylene	208-96-8	0.000076	υ		0.00008	0.0005	0.000076	mg/L	09/22/2004 21	:47 1	11563	1	lg1	
Anthracene	120-12-7	0.000563			0.00013	0.0005	0.000124	mg/L	09/22/2004 21	:47 1	11563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/22/2004 21	:47 1	11563	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	บ	W	0.000007	0.0001	0.000007	mg/L	09/21/2004 17	:45 11	11554	1	lg1	LB5-
bis(2-chloroethoxy)methane	111-91-1	0.000009	υ	ut	0.000009	0.0001	0.000009	mg/L	09/21/2004 17	:45 1	11554	1	lg1	UBU

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Job Number: 281075	, .	TRRP	La	abor	atory	Test I	Results	5		Da	ate: 1	.0/13/20	004	
CUSTOMER: ERM Southwest, Inc Hot	uston	PROJ	ECT	: HWI	•W			ATTN	: Chris You	ng				
Customer Sample ID: MW-5-	2SA04						Laborato	ory Sample ID:	281075-004	1	*****			
Date/Time Sampled: 09/14/2	004 9:08						Sample I	Matrix:	Water					
Date/Time Received: 09/14/2	004 16:33													
TEST METHOD	CAS#	RESULT	QI	FLAG	MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	D.F.	Analys	t t
bis(2-ethylhexyl)phthalate	117-81-7	0.000608			0.00018	0.0005	0.000172	mg/L	09/22/2004	21:47	111563	1 .	lg l	
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004	21:47	111563	1	lg1	
Dibenzofuran	132-64-9	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/22/2004	21:47	111563	1	lg1	Ι.
Di-n-butyl Phthalate	84-74-2	0.000143	U	-	0.00015	0.0005	0.000143	mg/L	09/22/2004	21:47	111563	1	lg1	
Fluoranthene	206-44-0	0.000135	J		0.000098	0.0005	0.000093	mg/L	09/22/2004	21:47	111563	1	lg1	
Fluorene	86-73-7	0.00016	J		0.000071	0.0005	0.000068	mg/L	09/22/2004	21:47	111563	1	lg1	
Naphthalene	91-20-3	0.00131		J	0.00007	0.0005	0.000067	mg/L	09/22/2004	21:47	111563	1	lgl	LOC_
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/22/2004	21:47	111563	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004	21:47	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U	иЈ	0.00004	0.0003	0.000038	mg/L	09/21/2004	17:45	111554	1	lg1	LEC
Phenanthrene	85-01-8	0.000077	U		0.000081	0.0005	0.000077	mg/L	09/22/2004	21:47	111563	1	lg1	
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/22/2004	21:47	111563	1	lg1	
Pyrene .	129-00-0	0.000241	J		0.000088	0.0005	0.000084	mg/L	09/22/2004	21:47	111563	1	lg1	

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Job Number: 281075		TRRP	L	abor	atory	Test F	Results	5		Da	ate: 1	0/13/2	004
CUSTOMER: ERM Southwest, Inc Hous	ston	PROJ	ЕČТ	`: HWP	W			ATTN	: Chris Your	ng 👝 🔆			
Customer Sample ID:MW-111Date/Time Sampled09/14/20Date/Time Received09/14/20	3-2SA04 004 10:13 004 16:33						Laborato Sample I	ory Sample ID: Matrix:	281075-005 Water				
TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS 🦪	Analysis Date	e/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water													
1,2-Dichloroethane	107-06-2	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004	19:03	111218	1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004	19:03	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004	19:03	111218	1	źfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004	19:03	11.1218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004	19:03	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004	19:03	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004	19:03	111218	1	zfl
				-									
Form I				Page 3	0			· · ·	· · · · · ·		•		

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Job Number: 281075	· · · · · · · · · · · · · · · · · · ·	TRRP	La	aboı	ratory	Test I	Result	S	:	Date:	10/13/2	2004
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT	: HWI	PW .			ATTN	l: Chris Young			
Customer Sample ID: MW-111	3-2SA04						Laborato	ory Sample ID:	281075-005			
Date/Time Sampled: 09/14/20 Date/Time Received: 09/14/20	004 10:13 004 16:33	•				·	Sample	Matrix:	Water			
TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Tim	e Batch	~D.F. :	Analyst
Method: SW-846 8270C, Water			14 1									10
1,2-Diphenylhydrazine	122-66-7	0.00001	U	UT	0.000011	0.0001	0.00001	mg/L	09/21/2004 18:1	3 111554	1	lg1
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/22/2004 22:1	4 111563	1	lg1
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 18:1	3 111554	1	lg1
2,6-Dinitrotoluene	606-20 <b>-</b> 2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004 18:1	3 11.1554	1	lg1
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/22/2004 22:1	4 111563	1	lg1
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/22/2004 22:1	4 111563	1	lg1
2-Methylnaphthalene	91-57-6	0.0748			0.00007	0.0005	0.00033	mg/L	09/23/2004 15:5	3 111563	5	lg1
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/22/2004 22:1	4 111563	1	lg1
Acenaphthene	83-32-9	0.151			0.000078	0.0005	0.00037	mg/L	09/23/2004 15:5	3 111563	5	lg1
Acenaphthylene	208-96-8	0.00193			0.00008	0.0005	0.000076	mg/L	09/22/2004 22:1	4 111563	. 1	lgl
Anthracene	120-12-7	0.00764			0.00013	0.0005	0.000124	mg/L	09/22/2004 22:1	4 111563	1	lg1
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/22/2004 22:1	4 111563	1	lg1
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 18:1	3 111554	1	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 18:1	3 111554	1	lg1

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Job Number: 281075	÷	TRRP	L	aboı	ratory '	Test I	Results	3		Date:	10/13/2	004
CUSTOMER: ERM Southwest, Inc I	ouston	PROJ	ECT	r: HWI	Þ₩			ATTN	: Chris Young			
Customer Sample ID: MW-	11B-2SA04						Laborato	ory Sample ID:	281075-005			
Date/Time Sampled: 09/14	/2004 10:13						Sample I	Matrix:	Water			
Date/Time Received: 09/14	/2004 16:33		•				· .					•
TEST METHOD	CAS#	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Ti	ne Batch	D.F.	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.000649			0.00018	0.0005	0.000172	mg/L	09/22/2004 22:	14 111563	1	lg1
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 22:	14 111563	1	lg1
Dibenzofuran	132-64-9	0.0804			0.00008	0.0005	0.00038	mg/L	09/23/2004 15:	53 111563	5	lg1
Di-n-butyl Phthalate	84-74-2	0.000449	J	u	0.00015	0.0005	0.000143	mg/L	09/22/2004 22:	14 111563	1	lg1
Fluoranthene	206-44-0	0.00536			0.000098	0.0005	0.000093	mg/L	09/22/2004 22:	14 111563	1	lg1
Fluorene	86-73-7	0.0671			0.000071	0.0005	0.00034	mg/L	09/23/2004 15:	53 111563	5	lg1
Naphthalene	91-20-3	0.184		T	0.00007	0.0005	0.00033	mg/L	09/23/2004 15:	53 111563	5	lg1
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/22/2004 22:	14 111563	1	lg1
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 22:	14 111563	1	lg1
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004 18:	13 111554	1	lg1
Phenanthrene	85-01-8	0.0422		JH	180000.0	0.0005	0.00039	mg/L	09/23/2004 15:	53 111563	5	lg1
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/22/2004 22:	14 111563	1	lg1
Pyrene	129-00-0	0.00268			0.000088	0.0005	0.000084	mg/L	09/22/2004 22:	14 111563	1	lg1
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Job Number: 281075		TRRP	Labor	ratory	Test F	Result	S .	•	Da	ate: 1	0/13/2	004
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT: HWI	νw			ATTN	: Chris You	ng			
Customer Sample ID:MW-04-Date/Time Sampled09/14/20Date/Time Received09/14/20	2SA04 004 10:27 004 16:33					Laborato Sample	ory Sample ID: Matrix:	281075-006 Water	5			
TEST METHOD	CAS #	RESULT	Q FLAG	MDL	MQL	SQL	UNITS -	Analysis Dat	e/Timê	Batch	D.F.	Analys
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	09/18/2004	19:31	111218	1	zfl
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	09/18/2004	19:31	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	09/18/2004	19:31	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U.	0.00137	0.005	0.00137	mg/L	09/18/2004	19:31	111218	1	zfl
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	09/18/2004	19:31	111218	1	zfl
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	09/18/2004	19:31	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	09/18/2004	19:31	111218	1	zfl
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Job Number: 281075		TRRP	La	abor	atory '	Гest I	Result	S	I	Date: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc,- Hou	ston	PROJ	ECT	: HWI	W			ATTN	: Chris Young				
Customer Sample ID: MW-04-	-2SA04						Laborate	ory Sample ID:	281075-006				
Date/Time Sampled: 09/14/20	004 10:27						Sample	Matrix:	Water				
Date/Time Received: 09/14/20	004 16:33											•	
TEST METHOD	CAS#	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Tim	e Batch	D.F.	Analyst	8
Method: SW-846 8270C, Water												- Con	2/29
1,2-Diphenylhydrazine	122-66-7	0.00001	U	иJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 18:4	1 111554	1	lg1	UBL
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/22/2004 22:4	2 111563	1	lg1	.
2,4-Dinitrotoluene	121-14-2	0.000009	U	μŦ	0.000009	0.0001	0.000009	mg/L	09/21/2004 18:4	1 111554	1	lg1	LBL
2,6-Dinitrotoluene	606-20-2	0.000026	U	ut	0.000027	0.0001	0.000026	mg/L	09/21/2004 18:4	1 11.1554	1	lg1	Bh
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/22/2004 22:4	2 111563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/22/2004 22:4	2 111563	1	lg1	
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	09/22/2004 22:4	2 111563	1	lg1	
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/22/2004 22:4	2 111563	1	lg1	
Acenaphthene	83-32-9	0.00722			0.000078	0.0005	0.000074	mg/L	09/22/2004 22:4	2 111563	1	lg1	
Acenaphthylene	208-96-8	0.000166	]1		0.00008	0.0005	0.000076	mg/L	09/22/2004 22:4	2   111563	1	lg1	
Anthracene	120-12-7	0.00129			0.00013	0.0005	0.000124	mg/L	09/22/2004 22:4	2 111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/22/2004 22:4	2 111563	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U	μŢ	0.000007	0.0001	0.000007	mg/L	09/21/2004 18:4	1 111554	1	lg1	lBC
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	w	0.000009	0.0001	0.000009	mg/L	09/21/2004 18:4	1 111554	1	lg1	ugu

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Job Number: 281075		TRRP	L	aboi	catory	Test I	Results	3	D	ate: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hous	ston	РКОЛ	ÈC1	r: HWI	•W			ATTN	: Chris Young				
Customer Sample ID:MW-04-Date/Time Sampled09/14/20Date/Time Received09/14/20	2SA04 04 10:27 04 16:33						Laborato Sample I	ory Sample ID: Matrix:	281075-006 Water				
TEST METHOD	CAS # ·····	RESULT	Q	FLAG	MDL	MQL	SQL	• UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000846			0.00018	0.0005	0.000172	mg/L	09/22/2004 22:42	111563	1	lg1	
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 22:42	111563	_1	lg1	
Dibenzofuran	132-64-9	0.0011	.		0.00008	0.0005	0.000076	mg/L	09/22/2004 22:42	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000637		u	0.00015	0.0005	0.000143	mg/L	09/22/2004 22:42	111563	1	lg1	UBL
Fluoranthene	206-44-0	0.000355	J		0.000098	0.0005	0.000093	mg/L	09/22/2004 22:42	111563	1	lg1	
Fluorene	86-73-7	0.00339			0.000071	0.0005	0.000068	mg/L	09/22/2004 22:42	111563	1	lg1	
Naphthalene	91-20-3	0.000067	U	ur	0.00007	0.0005	0.000067	mg/L	09/22/2004 22:42	111563	1	lg1	USL
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/22/2004 22:42	111563	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 22:42	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U	иJ	0.00004	0.0003	0.000038	mg/L	09/21/2004 18:41	111554	- 1	lg1	UBL
Phenanthrene	85-01-8	0.000278	J	JH	0.000081	0.0005	0.000077	mg/L	09/22/2004 22:42	111563	1	lg1	LBi
Phenol	108-95-2	0.0000953	υ		0.0001	0.0005	0.0000953	mg/L	09/22/2004 22:42	111563	1	lg1	
Pyrene	129-00-0	0.000398	J		0.000088	0.0005	0.000084	mg/L	09/22/2004 22:42	111563	1	lg1	
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TRENTS				·				•	•			•	•
Job Number: 281075			TRRP	Labor	atory	Test F	Results	5		Da	ate: 1	10/13/20	004
CUSTOMER: ERM Southwest	Inc Houston		PROJE	CT: HWF	₽₩.			ATTI	N; ∥Chris Y	oung			
Customer Sample ID:	MW-10B-2S	A04				•	Laborato	ry Sample ID	: 281075-0	007			
Date/Time Sampled:	09/14/2004	11:23	•				Sample N	Matrix	Water				4
Date/Time Received:	09/14/2004	16:33						·		• • •			· .
TEST METHOD _	;;C	CAS # 🔅	RESULT	Q FLAG	MDL	MQL	SQL	UNITS	Analysis D	Date/Time	Batch	D.F	Analyst
Method: SW-846 8260B Wa	ter		the second second				States and	and a second second second second second second second second second second second second second second second	and the second	<u> </u>	<u></u>	<u> </u>	<u></u>

a de la companya de l 1,2-Dichloroethane 107-06-2 0.00136 0.00136 0.005 0.00136 mg/L 09/18/2004 19:58 111218 zfl U 1 · Benzene 71-43-2 0.0025 0.00143 0.005 0.00143 mg/L 09/18/2004 19:58 111218 J 1 zfl Chlorobenzene 108-90-7 0.00155 0.00155 0.005 U 0.00155 mg/L 09/18/2004 19:58 111218 zfl 1 Ethylbenzene 100-41-4 0.00137 0.00137 U 0.005 0.00137 09/18/2004 19:58 11.1218 mg/L 1 zfl Methylene Chloride 0.0013 75-09-2 0.0013 0.005 0.0013 09/18/2004 19:58 111218 U mg/L 1 zfl Toluene 108-88-3 0.00136 0.00136 0.005 U 0.00136 mg/L 09/18/2004 19:58 111218 zfl 1 Xylenes (total) 1330-20-7 0.00441 0.00441 0.015 0.00441 09/18/2004 19:58 111218 U mg/L 1 zfl

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Job Number: 281075		TRRP	Labor	ratory	Test I	Result	S		D	ate: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJE	ECT: HWI	<b>⋗₩</b>			ATTN	I: Chris You	ng 🔆 -				
Customer Sample ID: MW-10	B-2SA04					Laborato	ory Sample ID:	281075-007	7				
Date/Time Sampled: 09/14/20 Date/Time Received: 09/14/20	004     11:23       004     16:33					Sample	Matrix:	Water					
TEST METHOD	CAS#	RESULT	QFLAG	MDL	MQL	∽ SQL_	UNITS	Analysis Date	e/Time	Batch	D.F.	Analys	Ę
Method: SW-846 8270C, Water					anta a la sita a Pilita da sita da sita Pilita da sita da sita				ang sang Agama				10/29/
1,2-Diphenylhydrazine	122-66-7	0.00001	UW	0.000011	0.0001	0.00001	mg/L	09/21/2004	19:08	111554	1	lg1	desi.
2,4-Dimethylphenol	105-67-9	0.000116	U	0.000122	0.0005	0.000116	mg/L	09/22/2004	23:10	111563	1	lg1	
2,4-Dinitrotoluene	121-14-2	0.000009	υw	0.000009	0.0001	0.000009	mg/L	09/21/2004	19:08	111554	1	lg1	LBC.
2,6-Dinitrotoluene	606-20-2	0.000026	UUT	0.000027	0.0001	0.000026	mg/L	09/21/2004	19:08	11.1554	1	lg1	4BL
2-Chloronaphthalene	91-58-7	0.000076	U	0.00008	0.0005	0.000076	mg/L	09/22/2004	23:10	111563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	09/22/2004	23:10	111563	1	lg1	
2-Methylnaphthalene	91-57-6	0.0127		0.00007	0.0005	0.000067	mg/L	09/22/2004	23:10	111563	1	lg1	
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	09/22/2004	23:10	111563	1	lg1	ĺ
Acenaphthene	83-32-9	0.0864		0.000078	0.0005	0.0003	mg/L	09/23/2004	16:21	111563	4	lg1	
Acenaphthylene	208-96-8	0.00161		0.00008	0.0005	0.000076	mg/L	09/22/2004	23:10	111563	1	lg1	
Anthracene	120-12-7	0.00549		0.00013	0.0005	0.000124	mg/L	09/22/2004	23:10	111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	09/22/2004	23:10	111563	1	lgl	
Benzo(a)pyrene	50-32-8	0.000007	U nJ	0.000007	0.0001	0.000007	mg/L	09/21/2004	19:08	111554	1	lg1	LBC
bis(2-chloroethoxy)methane	111-91-1	0.000009	UUT	0.000009	0.0001	0.000009	mg/L	09/21/2004	19:08	111554	1	lg1	CBL
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Job Number: 281075		TRRP	L	aboı	atory '	Test H	Result	5	D	ate: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECI	r: HWI	W			ATTN	: Chris Young				
Customer Sample ID:MW-10Date/Time Sampled09/14/20Date/Time Received09/14/20	B-2SA04 004 11:23 004 16:33						Laborate Sample	ory Sample ID: Matrix	281075-007 Water	• . • • • • •			
TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL -	UNITS	Analysis Date/Time	Batch	. D.F.	Analyst	1
bis(2-ethylhexyl)phthalate	117-81-7	0.0081			0.00018	0.0005	0.000172	mg/L	09/22/2004 23:10	111563	1	lg1	57 - 70 -
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004 23:10	111563	1	lg1	
Dibenzofuran	132-64-9	0.0404			0.00008	0.0005	0.000076	mg/L	09/22/2004 23:10	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000419	J	u	0.00015	0.0005	0.000143	mg/L	09/22/2004 23:10	111563	1	lg1	wh
Fluoranthene	206-44-0	0.00294			0.000098	0.0005	0.000093	mg/L	09/22/2004 23:10	111563	1	lg1	
Fluorene	86-73-7	0.044			0.000071	0.0005	0.00027	mg/L	09/23/2004 16:21	111563	4	lg1	
Naphthalene	91-20-3	0.107		J	0.00007	0.0005	0.00027	mg/L	09/23/2004 16:21	111563	4	lg1	Les.
Nitrobenzene	98-95-3	0.000143	Ú		0.00015	0.0005	0.000143	mg/L	09/22/2004 23:10	111563	1	lg1	2
n-Nitrosodiphenylamine	86-30-6	0.00009	υ		0.000094	0.0005	0.00009	mg/L	09/22/2004 23:10	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U	иJ	0.00004	0.0003	0.000038	mg/L	09/21/2004 19:08	111554	· .1	lg1	usa
Phenanthrene	85-01-8	0.0256		JH	0.000081	0.0005	0.000077	mg/L	09/22/2004 23:10	111563	1	lg1	ion
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/22/2004 23:10	111563	1	lg1	
Pyrene	129-00-0	0.00137			0.000088	0.0005	0.000084	mg/L	09/22/2004 23:10	111563	1	lg1	
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Form I

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**TRRP** Laboratory Test Results Job Number: 281075 10/13/2004 Date: PROJECT: HWPW CUSTOMER: ERM Southwest, Inc.- Houston ATTN: Chris Young Customer Sample ID: P-12-2SA04 Laboratory Sample ID: 281075-008 Date/Time Sampled .....: 09/14/2004 11:35 Sample Matrix .....: Water Date/Time Received .....: 09/14/2004 16:33 CAS # TEST METHOD **Q** FLAG Analysis Date/Time Batch D.F. RESULT MDL MOL SOL UNITS Analyst Method: SW-846 8260B, Water 3 1 1,2-Dichloroethane 107-06-2 0.00136 U 0.00136 0.005 0.00136 mg/L 09/18/2004 20:26 111218 1 zfl Benzene 71-43-2 0.00143 U 0.00143 0.005 0.00143 mg/L 09/18/2004 20:26 111218 zfl 1 Chlorobenzene 108-90-7 0.00155 U 0.00155 09/18/2004 20:26 111218 0.005 0.00155 mg/L 1 zfl Ethylbenzene 100-41-4 0.00137 U 0.00137 0.005 0.00137 mg/L 09/18/2004 20:26 11.1218 1 zfl Methylene Chloride 75-09-2 0.0013 U 0.0013 0.005 0.0013 mg/L 09/18/2004 20:26 111218 1 zfl 0.00136 0.00136 Toluene · 108-88-3 U 0.005 0.00136 mg/L 09/18/2004 20:26 111218 1 zfl Xylenes (total) 1330-20-7 0.00441 U 0.00441 0.015 0.00441 mg/L 09/18/2004 20:26 111218 1 zfl Form I Page 39

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Job Number: 281075		TRRP	Labo	ratory	Test I	Result	S	D	ate: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hou	ston 🔸 🔶	PROJ	ECT: HW	PŴ -			ATTN	I: Chris Young				
Customer Sample ID: P-12-2S	A04					Laborate	ory Sample ID:	281075-008				
Date/Time Sampled: 09/14/20	004 11:35					Sample	Matrix:	Water				
Date/Time Received: 09/14/20	16:33							· ·				
TEST METHOD	CAS #	RESULT	Q FLAC	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water			and a second sec						a delayer the			0/25/0
1,2-Diphenylhydrazine	122-66-7	0.000011	ช เช	0.000011	0.0001	0.000011	mg/L	09/21/2004 19:36	111554	1	lg1	BL
2,4-Dimethylphenol	105-67-9	0.000117	υ	0.000122	0.0005	0.000117	mg/L	09/22/2004 23:37	111563	1	lg1	
2,4-Dinitrotoluene	121-14-2	0.000009	υ	0.000009	0.0001	0.000009	mg/L	09/21/2004 19:36	111554	1	lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	09/21/2004 19:36	11.1554	1	lg1	
2-Chloronaphthalene	91-58-7	0.000077	U	0.00008	0.0005	0.000077	mg/L	09/22/2004 23:37	111563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000298	U	0.00031	0.0015	0.000298	mg/L	09/22/2004 23:37	111563	1	lg1	
2-Methylnaphthalene	91-57-6	0.000067	U	0.00007	0.0005	0.000067	mg/L	09/22/2004 23:37	111563	1	lg1	
4-Nitrophenol	100-02-7	0.000288	U	0.000299	0.0015	0.000288	mg/L	09/22/2004 23:37	111563	1	lg1	].
Acenaphthene	83-32-9	0.000075	ע - יע	0.000078	0.0005	0.000075	mg/L	09/22/2004 23:37	111563	1	lg1	
Acenaphthylene	208-96-8	0.000077	U	0.00008	0.0005	0.000077	mg/L	09/22/2004 23:37	111563	1	lg1	
Anthracene	120-12-7	0.000125	U	0.00013	0.0005	0.000125	mg/L	09/22/2004 23:37	111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000269	U	0.00028	0.0005	0.000269	mg/L	09/22/2004 23:37	111563	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	09/21/2004 19:36	111554	1	lg1	the second
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	09/21/2004 19:36	111554	1	lg1	

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Job Number: 281075	ta na ser	TRRP	Lał	oor	atory '	Test I	Results	5		Da	ate: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT: I	HWP	W			ATTN	: Chris You	ng 🧠				
Customer Sample ID:P-12-2S.Date/Time Sampled09/14/20Date/Time Received09/14/20	A04 004 11:35 004 16:33						Laborato Sample I	ory Sample ID: Matrix	281075-008 Water	3		-		
TEST METHOD	CAS#	RESULT	Q FL	AG	MDL :		SQL	ÚNITS	Analysis Dat	e/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000861			0.00018	0.0005	0.000173	mg/L	09/22/2004	23:37	111563	1	lg1	4291
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004	23:37	111563	. 1	lg1	
Dibenzofuran	132-64-9	0.000077	U		0.00008	0.0005	0.000077	mg/L	09/22/2004	23:37	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000279	Jl	ス	0.00015	0.0005	0.000144	mg/L	09/22/2004	23:37	111563	1	lg1	100
Fluoranthene	206-44-0	0.000094	υ		0.000098	0.0005	0.000094	mg/L	09/22/2004	23:37	111563	1	lg1	
Fluorene	86-73-7	0.000068	U		0.000071	0.0005	0.000068	mg/L	09/22/2004	23:37	111563	1	lgl	
Naphthalene	91-20-3	0.000067	ע י	UT	0.00007	0.0005	0.000067	mg/L	09/22/2004	23:37	111563	1	lg1	BC
Nitrobenzene	98-95-3	0.000144	U		0.00015	0.0005	0.000144	mg/L	09/22/2004	23:37	111563	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/22/2004	23:37	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004	19:36	111554	1	lg1	
Phenanthrene	85-01-8	0.000078	U		0.000081	0.0005	0.000078	mg/L	09/22/2004	23:37	111563	1	lgl	
Phenol	108-95-2	0.0000962	U		0.0001	0.0005	0.0000962	mg/L	09/22/2004	23:37	111563	1	lgl	
Pyrene	129-00-0	0.00457			0.000088	0.0005	0.000085	mg/L	09/22/2004	23:37	111563	1	lgl	
Form i		<u> </u>	Pa	ae 41										-

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Job Number: 281075	· · · · · ·	TRRP	Labo	ratory	Test F	Result	S		Da	ite: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hous	ston	PROJ	ECT: HŴ	PW			ATTN	: Chris Your	1g				
Customer Sample ID:FB-0914Date/Time Sampled09/14/20Date/Time Received09/14/20	04 12:00 04 16:33					Laborato Sample ]	ory Sample ID: Matrix	281075-009 Field Blank					
TEST METHOD	ÇAS #	RESULT	Q FLAG	MDL	MQL	SQL	UNITS	Analysis Date	e/Time	Batch	.D.F.	Analyst	
Method: SW-846 8260B, Water 1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	09/18/2004	15:22	111218	1	zfl	
Benzene	71-43-2	0.00143	υ	0.00143	0.005	0.00143	mg/L	09/18/2004	15:22	111218	1	zfl	÷.
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	09/18/2004	15:22	111218	1	zfl	·
Ethylbenzene	100-41-4	0.00137	U .	0.00137	0.005	0.00137	mg/L	09/18/2004	15:22	11.1218	1	zfl	in lot lui
Methylene Chloride	75-09-2	0.00281	JU	0.0013	0.005	0.0013	mg/L	09/18/2004	15:22	111218	.1	zfl	136-
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	09/18/2004	15:22	111218	1	zfl	
Xylenes (total)	1330-20-7	0.00441	υ	0.00441	0.015	0.00441	mg/L	09/18/2004	15:22	111218	1	zfl	1
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CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT: H	WPW			. ATTN	: Chris Young				
Customer Sample ID: FB-0914 Date/Time Sampled: 09/14/20 Date/Time Received: 09/14/20	04 004 12:00 004 16:33					Laborato Sample N	ory Sample ID: Matrix	281075-009 Field Blank				
TEST METHOD	CAS#	RESULT	Q FLA	GMDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	17.7%
Method: SW-846 8270C, Water												10/2
1,2-Diphenylhydrazine	122-66-7	0.00001	UU	5 0.000011	0.0001	0.00001	mg/L	09/21/2004 20:04	111554	.1	lg1	B
2,4-Dimethylphenol	105-67-9	0.000116	υ	0.000122	0.0005	0.000116	mg/L	09/23/2004 0:05	111563	1	lg1	. '
2,4-Dinitrotoluene	121-14-2	0.000009	U	.000009	0.0001	0.000009	mg/L	09/21/2004 20:04	111554	1	lg1	LBC
2,6-Dinitrotoluene	606-20-2	0.000026	U	0.000027	0.0001	0.000026	mg/L	09/21/2004 20:04	111554	1	lg1	iB
2-Chloronaphthalene	91-58-7	0.000076	υ	0.00008	0.0005	0.000076	mg/L	. 09/23/2004 0:05	111563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U	0.00031	0.0015	0.000295	mg/L	09/23/2004 0:05	111563	1	lg1	
2-Methylnaphthalene	91-57-6	0.000067	U	0.00007	0.0005	0.000067	mg/L	09/23/2004 0:05	111563	1	lg1	
4-Nitrophenol	100-02-7	0.000285	U	0.000299	0.0015	0.000285	mg/L	09/23/2004 0:05	111563	1	lg1	
Acenaphthene	83-32-9	0.000074	U	0.000078	0.0005	0.000074	mg/L	09/23/2004 0:05	111563	1	lg1	
Acenaphthylene	208-96-8	0.000076	υ	0.00008	0.0005	0.000076	mg/L	09/23/2004 0:05	111563	1	lg1	
Anthracene	120-12-7	0.000124	U	0.00013	0.0005	0.000124	mg/L	09/23/2004 0:05	111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000267	U	0.00028	0.0005	0.000267	mg/L	09/23/2004 0:05	111563	1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U	0.000007	0.0001	0.000007	mg/L	09/21/2004 20:04	111554	1	lg1	ee.
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	0.000009	0.0001	0.000009	mg/L	09/21/2004 20:04	111554	1	lg1	dBI

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Job Number: 281075		TRRP	L	aboı	atory '	Test I	Results	5	Da	ate: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Ho	uston	PROJ	ECJ	r: HWI	νW			ATTN	: Chris Young	an an an an an an an an an an an an an a		and and a	4
Customer Sample ID: FB-091	404						Laborato	ory Sample ID:	281075-009			· · · ·	
Date/Time Sampled 09/14/2	.004 12:00					• •	Sample I	Matrix:	Field Blank		•		
Date/Time Received: 09/14/2	16:33												
TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	D.F.	Analyst	1074
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U	<u></u>	0.00018	0.0005	0.000172	mg/L	09/23/2004 0:05	111563	1	lg1	10/29/00
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004 0:05	111563	1	lgl	
Dibenzofuran	132-64-9	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 0:05	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000356	J	и	0.00015	0.0005	0.000143	mg/L	09/23/2004 0:05	111563	1	lg1	UBL-
Fluoranthene	206-44-0	0.000093	U		0.000098	0.0005	0.000093	mg/L	09/23/2004 0:05	111563	1	lgl	
Fluorene	86-73-7	0.000068	U		0.000071	0.0005	0.000068	mg/L	09/23/2004 0:05	111563	1	lg1	
Naphthalene	91-20-3	0.000067	U	nt	0.00007	0.0005	0.000067	mg/L	09/23/2004 0:05	111563	1	lg1	LBL
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/23/2004 0:05	111563	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004 0:05	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004 20:04	111554	1	lg1	
Phenanthrene	85-01-8	0.000077	U		0.000081	0.0005	0.000077	mg/L	09/23/2004 0:05	111563	1	lg1	
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/23/2004 0:05	111563	1	lg1	
Pyrene	129-00-0	0.000084	U		0.000088	0.0005	0.000084	mg/L	09/23/2004 0:05	111563	1	lgl	
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Job Number: 281075			La		atory	ICSUI	Court.	3		Da	ate: 1	0/13/2	004
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT:	HWP	W			ATTN	: Chris You	ng 🍾			
Customer Sample ID: MW-01	A-2SA04				9 L	÷	Laborato	ory Sample ID:	281075-010	)	•	÷ .	
Date/Time Sampled: 09/14/20	004 13:28						Sample I	Matrix:	Water				
Date/Time Received: 09/14/20	004 16:33												
TEST METHOD	CAS #	RESULT	QF	ĹAG	MDL	MQL	SQL	UNITS	Analysis Date	e/Time	Batch	:D.F.	Analyst
Method: SW-846 8260B, Water		Charles and a second second second second second second second second second second second second second second							ang ang penghanang penghanang penghanang penghanang penghanang penghanang penghanang penghanang penghanang pen Penghanang penghanang penghanang penghanang penghanang penghanang penghanang penghanang penghanang penghanang pe Penghanang penghanang penghanang penghanang penghanang penghanang penghanang penghanang penghanang penghanang p				
1,2-Dichloroethane	107-06-2	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004	15:50	111218	1 .	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/18/2004	15:50	111218	.1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/18/2004	15:50	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/18/2004	15:50	11.1218	1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/18/2004	15:50	111218	1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/18/2004	15:50	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U		0.00441	0.015	0.00441	mg/L	09/18/2004	15:50	111218	.1	zfl
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# SEVERN STL

Job Number: 281075		TRRP	L	abor	atory '	Test F	Results	S		Date:	10/13/2	2004	
CUSTOMER: ERM Southwest, Inc Hous	ston	PROJI	ECT	`: HWI	W.			ATTN	: Chris Young				
Customer Sample ID: MW-01A	4-2SA04						Laborato	ory Sample ID:	281075-010	н 1 1			
Date/Time Sampled 09/14/20	004 13:28					e in	Sample 1	Matrix:	Water		•		•
Date/Time Received: 09/14/20	16:33	•					n Nilon a			•			
TEST METHOD	CAS # 🤛	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Ti	me Batc	n D.F.	Analys	Ē
Method: SW-846 8270C, Water													10/29/04
1,2-Diphenylhydrazine	122-66-7	0.00001	U	w	0.000011	0.0001	0.00001	mg/L	09/21/2004 20:	32 11155	64 1	lg1	ush
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/21/2004 12:	00 11156	53 1	lg1	
2,4-Dinitrotoluene	121-14-2	0.000009	υ		0.000009	0.0001	0.000009	mg/L	09/21/2004 20:	32 11155	54 1	lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004 20	32 11155	54 1	lg1	
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/21/2004 12:	00 11156	53 1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/21/2004 12:	00 11156	53 1	lg1	
2-Methylnaphthalene	91-57-6	0.00834			0.00007	0.0005	0.000067	mg/L	09/21/2004 12:	00 11156	53 1	lg1	
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/21/2004 12	00 11156	53 1	lg1	
Acenaphthene	83-32-9	0.231			0.000078	0.0005	0.00074	mg/L	09/23/2004 2::	24 11156	53 10	lg1	
Acenaphthylene	208-96-8	0.00196			0.00008	0.0005	0.000076	mg/L	09/21/2004 12	00 11150	53 1	lg1	
Anthracene	120-12-7	0.0116			0.00013	0.0005	0.000124	mg/L	09/21/2004 12:	00 11156	53 1	lg1	
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/21/2004 12	00 11156	53 1	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 20	32 11155	54 1	lg1	, the
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 20	32 1115	54 1	lg1	

Form I

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### STL SEVERN

CUSTOMER: ERM Southwest, IncHouston         PROJECT: HWPW         ATTN         Chris Young           Customer Sample ID:         MW-01A-2SA04         Laboratory Sample ID: 281075-010           Date/Time Sampled:         09/14/2004         13:28         Sample Matrix         Water           Date/Time Received:         09/14/2004         16:33         Sample Matrix         Water           Date/Time Received:         09/14/2004         16:33         Sample Matrix         Water           Discore         218-01-9         0.000672         0.00018         0.0005         0.000172         mg/L         09/21/2004         12:00           Dibenzofuran         132-64-9         0.114         0.00008         0.0005         0.000172         mg/L         09/21/2004         12:00           Dibenzofuran         132-64-9         0.114         0.00015         0.0005         0.000143         mg/L         09/21/2004         12:00           Fluoranthene         206-44-0         0.0154         0.000071         0.0005         0.00008         mg/L         09/21/2004         12:00           Fluoranthene         91-20-3         0.000884         J         0.000071         0.0005         0.00067         mg/L         09/21/2004         12:00	te: 10/	0/13/2004	
Customer Sample ID:       MW-01A-2SA04       Laboratory Sample ID:       281075-010         Date/Time Sampled       09/14/2004       13:28       Sample Matrix       Water         Date/Time Received       09/14/2004       16:33       Sample Matrix       Water         Date/Time Received       09/14/2004       16:33       MQL       SQL       UNITS       Analysis Date/Time         bis(2-ethylhexyl)phthalate       117-81-7       0.000672       0.00018       0.0005       0.000172       mg/L       09/21/2004       12:00         Chrysene       218-01-9       0.00009       U       0.00008       0.0005       0.00076       mg/L       09/21/2004       12:00         Dibenzofuran       132-64-9       0.114       0.00015       0.0005       0.000143       mg/L       09/21/2004       12:00         Din-butyl Phthalate       84-74-2       0.000143       U       0.0005       0.0005       0.000143       mg/L       09/21/2004       12:00         Fluorene       86-73-7       0.136       0.000071       0.0005       0.00067       mg/L       09/21/2004       12:00         Nitrobenzene       98-95-3       0.000143       U       0.0005       0.00067       mg/L       09/21/2004       12:0			
Date/Time Sampled: 09/14/2004       13:28       Sample Matrix: Water         Date/Time Received: 09/14/2004       16:33			
Date/Time Received:         09/14/2004         16:33           TEST METHOD         CAS #         RESULT         Q         FLAG         MDL         MQL         SQL         UNITS         Analysis Date/Time           bis(2-ethylhexyl)phthalate         117-81-7         0.000672         0.00018         0.0005         0.000172         mg/L         09/21/2004         12:00           Chrysene         218-01-9         0.00009         U         0.00008         0.0005         0.000172         mg/L         09/21/2004         12:00           Dibenzofuran         132-64-9         0.114         0.00008         0.0005         0.000143         mg/L         09/21/2004         12:00           Fluoranthene         206-44-0         0.0154         0.00008         0.0005         0.000143         mg/L         09/21/2004         12:00           Fluorene         86-73-7         0.136         0.000071         0.0005         0.00068         mg/L         09/21/2004         12:00           Nitrobenzene         98-95-3         0.000143         U         0.00015         0.0005         0.00067         mg/L         09/21/2004         12:00           n-Nitrosodiphenylamine         86-30-6         0.00009         U         0.00005			
TEST METHOD         CAS #         RESULT         Q         FLAG         MDL         MQL         SQL         UNITS         Analysis Date/Time           bis(2-ethylhexyl)phthalate         117-81-7         0.000672         0.00018         0.0005         0.000172         mg/L         09/21/2004         12:00           Chrysene         218-01-9         0.00009         U         0.00008         0.0005         0.00009         mg/L         09/21/2004         12:00           Dibenzofuran         132-64-9         0.114         0.00015         0.0005         0.000143         mg/L         09/21/2004         2:24           Di-n-butyl Phthalate         84-74-2         0.000143         U         0.0005         0.000143         mg/L         09/21/2004         12:00           Fluoranthene         206-44-0         0.0154         0.00008         0.0005         0.000093         mg/L         09/21/2004         12:00           Fluorene         86-73-7         0.136         0.000071         0.0005         0.00067         mg/L         09/21/2004         12:00           Nitrobenzene         91-20-3         0.000884         J         0.00007         0.0005         0.00067         mg/L         09/21/2004         12:00			
bis(2-ethylhexyl)phthalate       117-81-7       0.000672       0       0.00018       0.000172       mg/L       09/21/2004       12:00         Chrysene       218-01-9       0.00009       U       0.00009       0.0005       0.0009       mg/L       09/21/2004       12:00         Dibenzofuran       132-64-9       0.114       0.00008       0.0005       0.00076       mg/L       09/21/2004       12:00         Di-n-butyl Phthalate       84-74-2       0.000143       U       0.00058       0.0005       0.00013       mg/L       09/21/2004       12:00         Fluoranthene       206-44-0       0.0154       U       0.00058       0.0005       0.00093       mg/L       09/21/2004       12:00         Fluorene       86-73-7       0.136       U       0.000071       0.0005       0.00068       mg/L       09/21/2004       12:00         Naphthalene       91-20-3       0.000884       T       U       0.00015       0.0005       0.00067       mg/L       09/21/2004       12:00         n-Nitrosodiphenylamine       86-30-6       0.00009       U       0.00015       0.0005       0.00014       mg/L       09/21/2004       12:00         Phenanthrene       85-01-8	Batch	D.F. Ana	lyst
Chrysene       218-01-9       0.00009       U       0.000094       0.0005       0.0009       mg/L       09/21/2004       12:00         Dibenzofuran       132-64-9       0.114       0.00008       0.0005       0.00076       mg/L       09/23/2004       2:24         Di-n-butyl Phthalate       84-74-2       0.000143       U       0.0005       0.0005       0.00013       mg/L       09/21/2004       12:00         Fluoranthene       206-44-0       0.0154       U       0.00007       0.0005       0.00093       mg/L       09/21/2004       12:00         Fluorene       86-73-7       0.136       U       0.00007       0.0005       0.00068       mg/L       09/21/2004       2:24         Naphthalene       91-20-3       0.000184       U       J       0.00007       0.0005       0.00067       mg/L       09/21/2004       12:00         Nitrobenzene       98-95-3       0.000143       U       J       0.00015       0.0005       0.000143       mg/L       09/21/2004       12:00         n-Nitrosodiphenylamine       86-30-6       0.00009       U       0.00004       0.0003       0.000038       mg/L       09/21/2004       09/21/2004       12:00         Phe	111563	l lg	1
Dibenzofuran       132-64-9       0.114       0.00008       0.0005       0.00076       mg/L       09/23/2004 2:24         Di-n-butyl Phthalate       84-74-2       0.000143       U       0.00015       0.0005       0.000143       mg/L       09/21/2004 12:00         Fluoranthene       206-44-0       0.0154       0       0.00071       0.0005       0.00068       mg/L       09/21/2004 12:00         Fluorene       86-73-7       0.136       0       0.00071       0.0005       0.00068       mg/L       09/21/2004 12:00         Naphthalene       91-20-3       0.000143       U       0.00015       0.0005       0.00067       mg/L       09/21/2004 12:00         Nitrobenzene       98-95-3       0.000143       U       0.00015       0.0005       0.000143       mg/L       09/21/2004 12:00         n-Nitrosodiphenylamine       86-30-6       0.00099       U       0.00005       0.00014       mg/L       09/21/2004 12:00         Pentachlorophenol       87-86-5       0.00038       U       0.0005       0.00038       mg/L       09/21/2004 20:32         Phenol       108-95-2       0.0000953       U       0.0001       0.0005       0.00077       mg/L       09/21/2004 12:00	111563	1 lg	1
Di-n-butyl Phthalate84-74-2 $0.000143$ U $0.00015$ $0.0005$ $0.000143$ mg/L $09/21/2004$ $12:00$ Fluoranthene $206-44-0$ $0.0154$ $0.0154$ $0.00098$ $0.0005$ $0.00093$ mg/L $09/21/2004$ $12:00$ Fluorene $86-73-7$ $0.1366$ $0.000884$ $0.0005$ $0.0005$ $0.00067$ mg/L $09/21/2004$ $2:24$ Naphthalene $91-20-3$ $0.000884$ $0.0055$ $0.0005$ $0.00067$ mg/L $09/21/2004$ $2:200$ Nitrobenzene $98-95-3$ $0.000143$ U $0.0005$ $0.0005$ $0.00067$ mg/L $09/21/2004$ $12:00$ n-Nitrosodiphenylamine $86-30-6$ $0.0009$ U $0.0005$ $0.0005$ $0.0009$ mg/L $09/21/2004$ $12:00$ Pentachlorophenol $87-86-5$ $0.00038$ U $0.0005$ $0.00038$ mg/L $09/21/2004$ $2:32$ Phenanthrene $85-01-8$ $0.00152$ $5H$ $0.0005$ $0.00055$ $mg/L$ $09/21/2004$ $12:00$ Phenol $108-95-2$ $0.0000953$ U $0.0005$ $0.00055$ $0.000953$ $mg/L$ $09/21/2004$ $12:00$	111563	10 lg	1
Fluoranthene $206-44-0$ $0.0154$ $0.00098$ $0.00093$ $0.00093$ $mg/L$ $09/21/2004$ $12:00$ Fluorene $86-73-7$ $0.136$ $0.000884$ $5$ $0.000071$ $0.0005$ $0.00068$ $mg/L$ $09/23/2004$ $2:24$ Naphthalene $91-20-3$ $0.000884$ $5$ $5$ $0.000071$ $0.0005$ $0.00067$ $mg/L$ $09/21/2004$ $12:00$ Nitrobenzene $98-95-3$ $0.000143$ $U$ $0.00055$ $0.00015$ $0.000167$ $mg/L$ $09/21/2004$ $12:00$ n-Nitrosodiphenylamine $86-30-6$ $0.00097$ $U$ $0.00056$ $0.00007$ $mg/L$ $09/21/2004$ $12:00$ Pentachlorophenol $87-86-5$ $0.00038$ $U$ $0.00004$ $0.0003$ $0.00038$ $mg/L$ $09/21/2004$ $12:00$ Phenanthrene $85-01-8$ $0.00152$ $5H$ $0.00015$ $0.0005$ $0.000953$ $mg/L$ $09/21/2004$ $12:00$ Phenal $108-95-2$ $0.0000953$ $U$ $0.0005$ $0.00055$ $0.000953$ $mg/L$ $09/21/2004$ $12:00$	111563	l lg	1
Fluorene86-73-70.136 $J$ 0.000710.00050.00068mg/L09/23/2004 2:24Naphthalene91-20-30.000884 $J$ $J$ 0.000070.00050.00067mg/L09/21/2004 12:00Nitrobenzene98-95-30.000143U0.000150.00050.000143mg/L09/21/2004 12:00n-Nitrosodiphenylamine86-30-60.00009U0.0000940.00050.00009mg/L09/21/2004 12:00Pentachlorophenol87-86-50.00038U $J$ 0.000040.00030.00038mg/L09/21/2004 20:32Phenanthrene85-01-80.00152 $J$ $J$ 0.00010.00050.000953mg/L09/21/2004 12:00Phenol108-95-20.0000953U $J$ 0.00010.00050.000953mg/L09/21/2004 12:00	111563	l lg	1
Naphthalene       91-20-3       0.000884       J       J       0.00007       0.0005       0.00067       mg/L       09/21/2004       12:00         Nitrobenzene       98-95-3       0.000143       U       0.00015       0.0005       0.000143       mg/L       09/21/2004       12:00         n-Nitrosodiphenylamine       86-30-6       0.00009       U       0.00004       0.0005       0.00009       mg/L       09/21/2004       12:00         Pentachlorophenol       87-86-5       0.000038       U       0.00004       0.0003       0.00038       mg/L       09/21/2004       20:32         Phenanthrene       85-01-8       0.00152       JH       0.0001       0.0005       0.0000953       mg/L       09/21/2004       12:00         Phenol       108-95-2       0.0000953       U       0.0001       0.0005       0.0000953       mg/L       09/21/2004       12:00	111563	10 lg	;1
Nitrobenzene       98-95-3       0.000143       U       0.00015       0.0005       0.000143       mg/L       09/21/2004       12:00         n-Nitrosodiphenylamine       86-30-6       0.00009       U       0.00004       0.0005       0.0009       mg/L       09/21/2004       12:00         Pentachlorophenol       87-86-5       0.000038       U       0.00004       0.0003       0.00038       mg/L       09/21/2004       20:32         Phenanthrene       85-01-8       0.00152       JH       0.0001       0.0005       0.000953       mg/L       09/21/2004       12:00         Phenol       108-95-2       0.0000953       U       0.0001       0.0005       0.000953       mg/L       09/21/2004       12:00	111563	1 lg	1 Les
n-Nitrosodiphenylamine       86-30-6       0.00009       U       0.000094       0.0005       0.00009       mg/L       09/21/2004       12:00         Pentachlorophenol       87-86-5       0.000038       U       0.00004       0.0003       0.00038       mg/L       09/21/2004       09/21/2004       20:32         Phenanthrene       85-01-8       0.00152       JH       0.0005       0.000077       mg/L       09/21/2004       12:00         Phenol       108-95-2       0.0000953       U       0.0001       0.0005       0.000953       mg/L       09/21/2004       12:00	111563	l lg	;1
Pentachlorophenol       87-86-5       0.000038       U       0.00004       0.0003       0.00038       mg/L       09/21/2004       20:32         Phenanthrene       85-01-8       0.00152       JH       0.0005       0.0005       0.000077       mg/L       09/21/2004       12:00         Phenol       108-95-2       0.0000953       U       0.0001       0.0005       0.0000953       mg/L       09/21/2004       12:00	111563	l lg	1
Phenanthrene         85-01-8         0.00152         JH         0.00081         0.0005         0.000077         mg/L         09/21/2004         12:00           Phenol         108-95-2         0.0000953         U         0.0001         0.0005         0.000953         mg/L         09/21/2004         12:00	111554	1 lg	1
Phenol 108-95-2 0.0000953 III 0.0001 0.0005 0.0000953 mg/I 0.0/21/2004 12:00	111563	1 lg	1 136
	111563	1 lg	;1
Pyrene         129-00-0         0.00676         0.000088         0.0005         0.000084         mg/L         09/21/2004         12:00	111563	1 lg	;1
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Job Number: 281075	алан алан Алан Алан Алан Алан	TRRP	La	bor	atory '	Test I	Results	S		Da	ate: 1	0/13/2	004
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT:	HWP	W			ATTN	: Chris You	ng			
Customer Sample ID: MW-01.	A-2SA04 MS					40 20 20 20	Laborato	ory Sample ID:	281075-01	1		•	
Date/Time Sampled: 09/14/20	004 13:50	•					Sample	Matrix:	Water				• • •
Date/Time Received: 09/14/20	16:33									•			
TEST METHOD	CAS #	RESULT	QF	LAG	MDL	MQL	ु SQL ्	UNITS 🔧	Analysis Dat	e/Time	Batch	D.F.	Analys
Method: SW-846 8260B, Water			1997 1997 1997										ر د مر ۲۰ بر بر میرد مدکر د ه
1,2-Dichloroethane	107-06-2	0.0429			0.00136	0.005	0.00136	mg/L	09/18/2004	16:17	111218	1	zfl
Benzene	71-43-2	0.0425			0.00143	0.005	0.00143	mg/L	09/18/2004	16:17	111218	1	zfl
Chlorobenzene	108-90-7	0.042			0.00155	0.005	0.00155	mg/L	09/18/2004	16:17	111218	1	zfl
Ethylbenzene	100-41-4	0.0436			0.00137	0.005	0.00137	mg/L	09/18/2004	16:17	11.1218	1.	zfl
Methylene Chloride	75-09-2	0.0474			0.0013	0.005	0.0013	mg/L	09/18/2004	16:17	111218	1	zfl
Toluene	108-88-3	0.0428			0.00136	0.005	0.00136	mg/L	09/18/2004	16:17	111218	1	zfl
Xylenes (total)	1330-20-7	0.129			0.00441	0.015	0.00441	mg/L	09/18/2004	16:17	111218	1	zfl
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Job Number: 281075		TRRP	Laboi	ratory '	Test I	Results	3		Date:	10/13/2	.004
CUSTOMER: ERM Southwest, Inc Hous	ston	PROJI	ECT: HWI	₽₩?			· · · · ATTN	: Chris Young			
Customer Sample ID:MW-014Date/Time Sampled09/14/20Date/Time Received09/14/20	A-2SA04 MS 004 13:50 004 16:33					Laborato Sample I	ory Sample ID: Matrix:	281075-011 Water			
TEST METHOD	CAS #	RESULT	Q FLAG	MDL	MQL	SQL	UNITS	Analysis Date/Ti	ne Batch	D.F.	Analyst
Method: SW-846 8270C, Water											
1,2-Diphenylhydrazine	122-66-7	0.00106		0.000011	0.0001	0.000011	mg/L	09/21/2004 13:	05 111554	1	lg1
2,4-Dimethylphenol	105-67-9	0.00733		0.000122	0.0005	0.000118	mg/L	09/21/2004 12:	27 111563	. 1	lg1
2,4-Dinitrotoluene	121-14-2	0.00107		0.000009	0.0001	0.000009	mg/L	09/21/2004 13:	05 111554	· 1	lg1
2,6-Dinitrotoluene	606-20-2	0.000947		0.000027	0.0001	0.000026	mg/L	09/21/2004 13:	05 11.1554	.1	lg1
2-Chloronaphthalene	91-58-7	0.00906		0.00008	0.0005	0.000078	mg/L	09/21/2004 12:	27 111563	1	lgl
2-Methyl-4,6-dinitrophenol	534-52-1	0.0134		0.00031	0.0015	0.000301	mg/L	09/21/2004 12:	27 111563	1 .	lg1
2-Methylnaphthalene	91-57-6	0.0114		0.00007	0.0005	0.000068	mg/L	09/21/2004 12:	27 111563	1	lg1
4-Nitrophenol	100-02-7	0.00861		0.000299	0.0015	0.00029	mg/L	09/21/2004 12:	27 111563	1	lgl
Acenaphthene	83-32-9	0.245		0.000078	0.0005	0.00076	mg/L	09/23/2004 2::	2 111563	10	lg1
Acenaphthylene	208-96-8	0.0108		0.00008	0.0005	0.000078	mg/L	09/21/2004 12:	27 111563	1	lg1
Anthracene	120-12-7	0.0217		0.00013	0.0005	0.000126	mg/L	09/21/2004 12:	27 111563	1	lg1
Benzo(a)anthracene	56-55-3	0.00895		0.00028	0.0005	0.000272	mg/L	09/21/2004 12:	27 111563	1	lg1
Benzo(a)pyrene	50-32-8	0.000952		0.000007	0.0001	0.000007	mg/L	09/21/2004 13:	05 111554	1.	lg1
bis(2-chloroethoxy)methane	111-91-1	0.000982		0.000009 ,	0.0001	0.000009	mg/L	09/21/2004 13:	05 111554	1	lg1

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## SEVERN STL

Job Number: 281075		TRRP	Labo	catory '	Test F	Results	5		Da	ate: 1	0/13/2	004
CUSTOMER: ERM Southwest, Inc Hou	iston	PROJ	ECT: HWI	YW	<u>.</u>		ATTN	: Chris Your	ig j			
Customer Sample ID:MW-01Date/Time Sampled09/14/2Date/Time Received09/14/2	A-2SA04 MS 004 13:50 004 16:33					Laborato Sample I	ory Sample ID: Matrix:	281075-011 Water				
TEST METHOD	CAS #	RESULT	Q FLAG	MDL	MQL	SQL	ÛNITS 🦪	Analysis Date	/Time	Batch	_D.F	Analyst
bis(2-ethylhexyl)phthalate	117-81-7	0.00801		0.00018	0.0005	0.000175	mg/L	09/21/2004	12:27	111563	1	lg1
Chrysene	218-01-9	0.00797		0.000094	0.0005	0.000091	mg/L	09/21/2004	12:27	111563	1	lg1
Dibenzofuran	132-64-9	0.124		0.00008	0.0005	0.00078	mg/L	09/23/2004	2:52	111563	10	lg1
Di-n-butyl Phthalate	84-74-2	0.01		0.00015	0.0005	0.000146	mg/L	09/21/2004	12:27	111563	1	lg1
Fluoranthene	206-44-0	0.0243		0.000098	0.0005	0.000095	mg/L	09/21/2004	12:27	111563	1	lgl
Fluorene	86-73-7	0.14		0.000071	0.0005	0.00069	mg/L	09/23/2004	2:52	111563	10	lg1
Naphthalene	91-20-3	0.0087		0.00007	0.0005	0.000068	mg/L	09/21/2004	12:27	111563	1	lg1
Nitrobenzene	98-95-3	0.0095		0.00015	0.0005	0.000146	mg/L	09/21/2004	12:27	111563	1	lg1
n-Nitrosodiphenylamine	86-30-6	0.0127		0.000094	0.0005	0.000091	mg/L	09/21/2004	12:27	111563	1	lg1
Pentachlorophenol	87-86-5	0.00167	-	0.00004	0.0003	0.000039	mg/L	09/21/2004	13:05	111554	1	lg1
Phenanthrene	85-01-8	0.00949		0.000081	0.0005	0.000079	mg/L	09/21/2004	12:27	111563	1 -	lg1
Phenol	108-95-2	0.00284		0.0001	0.0005	0.0000971	mg/L	09/21/2004	12:27	111563	1	lg1
Pyrene	129-00-0	0.0156		0.000088	0.0005	0.000085	mg/L	09/21/2004	12:27	111563	1	lg1
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Job Number: 281075	· · · · · · · · · · · · · · · · · · ·	TRRP	Labor	ratory	Test I	Result	S		Da	ate: 1	0/13/2	004
CUSTOMER: ERM Southwest, Inc Hou	ston	е РКОЛ	ECT: HWI	•			ATTN	I: Chris You	ng 🔆 –			
Customer Sample ID:MW-01-Date/Time Sampled09/14/20Date/Time Received09/14/20	2SA04 MSD 004 14:10 004 16:33					Laborate Sample	ory Sample ID: Matrix:	281075-012 Water	2			
TEST METHOD	CAS#	RESULT	Q FLAG	MDL	MQL	SQL	UNITS	Analysis Date	e/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water										la desta de la composición la constante de la constante la constante de la		
1,2-Dichloroethane	107-06-2	0.043		0.00136	0.005	0.00136	mg/L	09/18/2004	16:45	111218	1	zfl
Benzene	71-43-2	0.0418		0.00143	0.005	0.00143	mg/L	09/18/2004	16:45	111218	1	zfl
Chlorobenzene	108-90-7	0.0418		0.00155	0.005	0.00155	mg/L	09/18/2004	16:45	111218	1	zfl
Ethylbenzene	100-41-4	0.0435		0.00137	0.005	0.00137	mg/L	09/18/2004	16:45	11.1218	1	zfl
Methylene Chloride	75-09-2	0.0423		0.0013	0.005	0.0013	mg/L	09/18/2004	16:45	111218	1	zfl
Toluene	108-88-3	0.0424		0.00136	0.005	0.00136	mg/L	09/18/2004	16:45	111218	1	zfl
Xylenes (total)	1330-20-7	0.128		0.00441	0.015	0.00441	mg/L	09/18/2004	16:45	111218	1	zfl
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USTOMER: ERM Southwest, Inc He sustomer Sample ID: MW-0	buston	PROJE	Starting Street Street			LOD GIU	• .		Da	te: 1	0/13/2	004	
ustomer Sample ID: MW-0			ECT: HWI	Þ₩			ATTN	: Chris Youn	g.				
	1-2SA04 MSD	. <sup>.</sup>				Laborato	ory Sample ID: 281075-012						
ate/Time Sampled: 09/14/	Date/Time Sampled 09/14/2004 14:10					Sample 1	Matrix:	Water					
ate/Time Received: 09/14/	2004 16:33							· · ·					
TEST METHOD	CAS#	RESULT	Q FLAG	MDL	MQL	SQL	UNITS	Analysis Date	/Time	Batch	D.F.	Analy	
lethod: SW-846 8270C, Water		認念融	▲ <u>秋</u> 田 現							3 40		مرد المرديني المحرك المرديني	
2-Diphenylhydrazine	122-66-7	0.000653		0.000011	0.0001	0.000011	mg/L	09/21/2004	13:33	111554	1	lg1	
4-Dimethylphenol	105-67-9	0.00739		0.000122	0.0005	0.000117	mg/L	09/21/2004	12:55	111563	1	lgl	
4-Dinitrotoluene	121-14-2	0.00116		0.000009	0.0001	0.000009	mg/L	09/21/2004	13:33	111554	1	lg1	
6-Dinitrotoluene	606-20-2	0.000972		0.000027	0.0001	0.000026	mg/L	09/21/2004	13:33	11.1554	1	lgl	
-Chloronaphthalene	91-58-7	0.00894		0.00008	0.0005	0.000077	mg/L	09/21/2004	12:55	111563	1	lgl	
-Methyl-4,6-dinitrophenol	534-52-1	0.0134		0.00031	0.0015	0.000298	mg/L	09/21/2004	12:55	111563	1	lg1	
-Methylnaphthalene	91-57-6	0.0118		0.00007	0.0005	0.00067	mg/L	09/23/2004	3:19	111563	10	lg1	
-Nitrophenol	100-02-7	0.00894		0.000299	0.0015	0.000288	mg/L	09/21/2004	12:55	111563	- 1	lg1	
cenaphthene	83-32-9	0.236		0.000078	0.0005	0.00075	mg/L	09/23/2004	3:19	111563	10	lg1	
cenaphthylene	208-96-8	0.0107		0.00008	0.0005	0.000077	mg/L	09/21/2004	12:55	111563	1	lgl	
nthracene	120-12-7	0.0226		0.00013	0.0005	0.000125	mg/L	09/21/2004	12:55	111563	1 1	lgl	
enzo(a)anthracene	56-55-3	0.00868		0.00028	0.0005	0.000269	mg/L	09/21/2004	12:55	111563	1	lgl	
enzo(a)pyrene	50-32-8	0.000989		0.000007	0.0001	0.000007	mg/L	09/21/2004	13:33	111554	1	lg	
is(2-chloroethoxy)methane	111-91-1	0.000786		0.000009	0.0001	0.000009	mg/L	09/21/2004	13:33	111554	1	lg	

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TRRP Laboratory Test Results Job Number: 281075 10/13/2004 Date: PROJECT: HWPW CUSTOMER: ERM Southwest, Inc,- Houston ATTN: Chris Young Customer Sample ID: **MW-01-2SA04 MSD** Laboratory Sample ID: 281075-012 Date/Time Sampled .....: 09/14/2004 14:10 Sample Matrix .....: Water Date/Time Received .....: 09/14/2004 16:33 TEST METHOD CAS# Q FLAG MDL Analysis Date/Time Batch D.F. Analyst RESULT MOL SOL UNITS 📈 bis(2-ethylhexyl)phthalate 0.000173 117-81-7 0.00835 0.00018 0.0005 mg/L 09/21/2004 12:55 111563 1 lg1 Chrysene : 218-01-9 0.00783 0.000094 0.0005 0.00009 09/21/2004 12:55 111563 mg/L 1 lg1 Dibenzofuran 132-64-9 0.122 0.00008 0.00077 0.0005 mg/L 09/23/2004 3:19 111563 10 lg1 Di-n-butyl Phthalate 84-74-2 0.0104 0.00015 0.0005 0.000144 09/21/2004 12:55 1111563 1 lg1 mg/L Fluoranthene 206-44-0 0.0251 0.000098 0.0005 0.000094 09/21/2004 12:55 1111563 mg/L 1 lg1 86-73-7 0.143 0.000071 0.0005 Fluorene 0.00068 mg/L 09/23/2004 3:19 111563 10 lg1 Naphthalene 91-20-3 0.0129 0.00007 0.0005 0.000067 mg/L 09/21/2004 12:55 111563 1 lg1 98-95-3 Nitrobenzene · 0.00961 0.00015 0.0005 0.000144 09/21/2004 12:55 111563 mg/L 1 lgl n-Nitrosodiphenylamine 09/21/2004 12:55 111563 86-30-6 0.0123 0.000094 0.0005 0.00009 lg1 mg/L 1 Pentachlorophenol 87-86-5 0.00148 0.00004 0.0003 0.000038 mg/L 09/21/2004 13:33 111554 1 lgl Phenanthrene 85-01-8 0.0171 0.000081 0.0005 0.000078 09/21/2004 12:55 111563 mg/L 1 lg1 Phenol . 108-95-2 0.00265 0.0001 0.0005 b.0000962 mg/L 09/21/2004 12:55 111563 1 lgl 129-00-0 0.0172 0.000088 0.0005 0.000085 09/21/2004 12:55 111563 Pyrene<sup>1</sup> mg/L 1 lg1 Form I

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Job Number: 281075		TRRP	Labo	oratory	Test I	Results	5		Da	ate: 1	0/13/2	004
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECT: HV	VPW ···			ATTN	: Chris You	ng 🦾			
Customer Sample ID: MW-111	A-2SA04					Laborato	ory Sample ID:	281075-013	3			•
Date/Time Sampled 09/14/20	15:00					Sample 1	Matrix:	Water				
Date/Time Received: 09/14/20	16:33										•	
TEST METHOD	CAS#	RESULT	Q FLA	G MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	D.F.	Analyst
Method: SW-846 8260B, Water												
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	09/20/2004	19:38	111218	1	zfl
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	09/20/2004	19:38	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	09/20/2004	19:38	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	09/20/2004	19:38	11.1218	1 ·	zfl
Methylene Chloride	75-09-2	0.0013	U	0.0013	0.005	0.0013	mg/L	09/20/2004	19:38	111218	1	zfl
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	09/20/2004	19:38	111218	2 1	zfl
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	09/20/2004	19:38	111218	1	zfl
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						21 			•			
				-							•	

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Job Number: 281075	· · · · · · ·	TRRP	L	aboı	ratory	Test I	Date: 10/13/2004						
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ECJ	r: HWI	PW.			ATTN	: Chris Young				1
Customer Sample ID:MW-111Date/Time Sampled09/14/20Date/Time Received09/14/20	Laboratory Sample ID: 281075-013 Sample Matrix: Water												
TEST METHOD	CAS # 🕬	RESULT	Q	FLAG	MDL	MQL	SQL		Analysis Date/Time	Batch	∫D.F.•	Analyst	1
Method: SW-846 8270C, Water					Sing Sing Sing Sing Sing Sing Sing Sing	ана З(11 <b>4</b> 1)							0/29/61
1,2-Diphenylhydrazine	122-66-7	0.00001	U	NJ	0.000011	0.0001	0.00001	mg/L	09/21/2004 21:00	111554	1	lg1	der.
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/23/2004 0:33	111563	1	lg1	
2,4-Dinitrotoluene	121-14-2	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 21:00	111554	1	lg1	
2,6-Dinitrotoluene	606-20-2	0.000026	U		0.000027	0.0001	0.000026	mg/L	09/21/2004 21:00	11.1554	.1	lg1	
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 0:33	111563	1 .	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/23/2004 0:33	111563	- 1	lg1	
2-Methylnaphthalene	91-57-6	0.000067	U		0.00007	0.0005	0.000067	mg/L	09/23/2004 0:33	111563	1	lg1	
4-Nitrophenol	100-02-7	0.000285	U		0.000299	0.0015	0.000285	mg/L	09/23/2004 0:33	111563	1	lg1	
Acenaphthene	83-32-9	0.0987			0.000078	0.0005	0.0003	mg/L	09/23/2004 16:49	111563	4	lg1	· · .
Acenaphthylene	208-96-8	0.000797			0.00008	0.0005	0.000076	mg/L	09/23/2004 0:33	111563	1	lg1	
Anthracene	120-12-7	0.00315			0.00013	0.0005	0.000124	mg/L	09/23/2004 0:33	111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000267	บ		0.00028	0.0005	0.000267	mg/L	09/23/2004 0:33	111563	<u>1</u>	lg1	
Benzo(a)pyrene	50-32-8	0.000007	U		0.000007	0.0001	0.000007	mg/L	09/21/2004 21:00	111554	1	lg1	
bis(2-chloroethoxy)methane	111-91-1	0.000009	U		0.000009	0.0001	0.000009	mg/L	09/21/2004 21:00	111554	1	lg1	

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Job Number: 281075		TRRP	L	aboı	atory '	Test I	Results	5		Da	ate: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hou	ston	PROJ	ÉC.	r: HWF	₩			ATTN	: Chris Your	ig 🦾				
Customer Sample ID:MW-11Date/Time Sampled09/14/20Date/Time Received09/14/20	A-2SA04 004 15:00 004 16:33			· · ·			Laborato Sample l	ory Sample ID: Matrix	281075-013 Water		· · · · · · · · · · · · · · · · · · ·			
TEST METHOD	CAS#	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date	/Time	Batch	D.F.	Analyst	
bis(2-ethylhexyl)phthalate	117-81-7	0.000172	U		0.00018	0.0005	0.000172	mg/L	09/23/2004	0:33	111563	1	lg1	10/27
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004	0:33	111563	1	lgl	
Dibenzofuran	132-64-9	0.00919			0.00008	0.0005	0.000076	mg/L	09/23/2004	0:33	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000279	J	u	0.00015	0.0005	0.000143	mg/L	09/23/2004	0:33	111563	1	lg1	usc
Fluoranthene	206-44-0	0.0099			0.000098	0.0005	0.000093	mg/L	09/23/2004	0:33	111563	1	lgl	
Fluorene	86-73-7	0.0455			0.000071	0.0005	0.00027	mg/L	09/23/2004	16:49	111563	4	lgl	
Naphthalene	91-20-3	0.000236	J	J	0.00007	0.0005	0.000067	mg/L	09/23/2004	0:33	111563	1	lg1	LBL
Nitrobenzene	98-95-3	0.000143	U		0.00015	0.0005	0.000143	mg/L	09/23/2004	0:33	111563	1	lgl	ľ
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004	0:33	111563	. 1	lg1	
Pentachlorophenol	87-86-5	0.000038	U		0.00004	0.0003	0.000038	mg/L	09/21/2004	21:00	111554	1	lg1	
Phenanthrene	85-01-8	0.000594		JH	0.000081	0.0005	0.000077	mg/L	09/23/2004	0:33	111563	1	lg1 <i>t</i>	iei
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/23/2004	0:33	111563	. 1	lg1	
Pyrene	129-00-0	0.00483			0.000088	0.0005	0.000084	mg/L	09/23/2004	0:33	111563	1	lg1	
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Job Number: 281075		TRRP	L	abor	atory '	Test F	Results	5	• • • • • • •	Date:	10/13/2	.004
CUSTOMER: ERM Southwest, Inc Hous	ston	PROJ	ЕĊТ	: HWI	W			ĂTTN	: Chris Young			
Customer Sample ID:MW-11ADate/Time Sampled09/14/20Date/Time Received09/14/20	AD-2SA04 04 15:25 04 16:33	· · ·					Laborato Sample I	ory Sample ID: Matrix	281075-014 Water			
TEST METHOD	CAS #	RESULT	Q	FLAG	MDL	MQL	SQL -	UNITS	Analysis Date/T	ime Batch	: D.F.	Analys
Method: SW-846 8260B, Water				ارد به و دایر ۲۰۰۱ - ۲۰ ۱۹۰۰ - ۲۰								
1,2-Dichloroethane	107-06-2	0.00136	U		0.00136	0.005	0.00136	mg/L	09/20/2004 20	:06 11121	8 1	zfl
Benzene	71-43-2	0.00143	U		0.00143	0.005	0.00143	mg/L	09/20/2004 20	:06 11121	8 1	zfl
Chlorobenzene	108-90-7	0.00155	U		0.00155	0.005	0.00155	mg/L	09/20/2004 20	:06 11121	8 1	zfl
Ethylbenzene	100-41-4	0.00137	U		0.00137	0.005	0.00137	mg/L	09/20/2004 20	:06 11.121	8 1	zfl
Methylene Chloride	75-09-2	0.0013	U		0.0013	0.005	0.0013	mg/L	09/20/2004 20	:06 11121	8 1	zfl
Toluene	108-88-3	0.00136	U		0.00136	0.005	0.00136	mg/L	09/20/2004 20	:06 11121	8 1	zfl
Xylenes (total)	1330-20-7	0.00441	U	-	0.00441	0.015	0.00441	mg/L	09/20/2004 20	:06 11121	8 1	zfl
					2							
Form I		<u> </u>	<del>اا</del> ا	Page 5	7							<u></u>

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Job	Number: 28107	5		TR	RP L	abora	tory T	est R	esults	 

PROJECT: HWPW

Date: 10/13/2004

CUSTOMER: ERM Southwest, Inc.- Houston

Laboratory Sample ID: 281075-014

Sample Matrix .....: Water

ATTN: Chris Young

Customer Sample ID:MW-11AD-2SA04Date/Time Sampled ......09/14/200415:25Date/Time Received ......09/14/200416:33

TEST METHOD	CAS#	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS	Analysis Date/	Time	Batch	D.F.	Analyst	
Method: SW-846 8270C, Water													1. 1. 1. 1.	129/0
1,2-Diphenylhydrazine	122-66-7	0.00001	U	ut	0.000011	0.0001	0.00001	mg/L	09/21/2004 2	21:28	111554	1	lgl	BC_
2,4-Dimethylphenol	105-67-9	0.000116	U		0.000122	0.0005	0.000116	mg/L	09/23/2004 1	4:57	111563	1	ہے lg1	
2,4-Dinitrotoluene	121-14-2	0.000009	U	NJ	0.000009	0.0001	0.000009	mg/L	09/21/2004 2	21:28	111554	1	lg1	les-
2,6-Dinitrotoluene	606-20-2	0.000026	U	ut	0.000027	0.0001	0.000026	mg/L	09/21/2004 2	21:28	111554	1	lg1	136
2-Chloronaphthalene	91-58-7	0.000076	U		0.00008	0.0005	0.000076	mg/L	09/23/2004 1	4:57	111563	1	lg1	
2-Methyl-4,6-dinitrophenol	534-52-1	0.000295	U		0.00031	0.0015	0.000295	mg/L	09/23/2004 1	4:57	111563	1	lg1	
2-Methylnaphthalene	91-57-6	0.000877			0.00007	0.0005	0.000067	mg/L	09/23/2004 1	4:57	111563	1	lg1	
4-Nitrophenol	100-02-7	0.000285	υ		0.000299	0.0015	0.000285	mg/L	09/23/2004 1	14:57	111563	1	lg1	
Acenaphthene	83-32-9	0.0881			0.000078	0.0005	0.0003	mg/L	09/23/2004 1	17:16	111563	4	lg1	
Acenaphthylene	208-96-8	0.000657			0.00008	0.0005	0.000076	mg/L	09/23/2004 1	14:57	111563	1	lg1	
Anthracene	120-12-7	0.00354			0.00013	0.0005	0.000124	mg/L	09/23/2004 1	14:57	111563	1	lg1	
Benzo(a)anthracene	56-55-3	0.000267	U		0.00028	0.0005	0.000267	mg/L	09/23/2004 1	14:57	111563	1	lgl	
Benzo(a)pyrene	50-32-8	0.000007	U	ИJ	0.000007	0.0001	0.000007	mg/L	09/21/2004 2	21:28	111554	. 1	lg1 (	er.
bis(2-chloroethoxy)methane	111-91-1	0.000009	U	UJ	0.000009	0.0001	0.000009	mg/L	09/21/2004 2	21:28	111554	1	lg1 (	ec.
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Form I



Job Number: 281075		TRRP	L	abor	ratory	Test I	Results	5		Da	ate: 1	0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hous	ston	PROJ	ĔСΊ	r: HWI	· •₩			ATTN	Chris You	ng				
Customer Sample ID:MW-114Date/Time Sampled09/14/20Date/Time Received09/14/20	AD-2SA04 04 15:25 04 16:33						Laborato Sample N	ory Sample ID: Matrix	281075-014 Water	1				
TEST METHOD	CAS#	RESULT	Q	FLAG	MDL	MQL	SQL	UNITS ·	Analysis Dat	e/Time	Batch	D.F.	Analys	t t
bis(2-ethylhexyl)phthalate	117-81-7	0.000714			0.00018	0.0005	0.000172	mg/L	09/23/2004	14:57	111563	.1	lg1	
Chrysene	218-01-9	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004	14:57	111563	1	lg1	
Dibenzofuran	132-64-9	0.00872			0.00008	0.0005	0.000076	mg/L	09/23/2004	14:57	111563	1	lg1	
Di-n-butyl Phthalate	84-74-2	0.000386	J	L	0.00015	0.0005	0.000143	mg/L	09/23/2004	14:57	111563	1	lg1	BC
Fluoranthene	206-44-0	0.0121	:		0.000098	0.0005	0.000093	mg/L	09/23/2004	14:57	111563	1	lg1	
Fluorene	86-73-7	0.0474			0.000071	0.0005	0.00027	mg/L	09/23/2004	17:16	111563	4	lg1	
Naphthalene	91-20-3	0.00255		T	0.00007	0.0005	0.000067	mg/L	09/23/2004	14:57	111563	1	lg1	cesc.
Nitrobenzene	98-95-3	0.000143	ט		0.00015	0.0005	0.000143	mg/L	09/23/2004	14:57	111563	1	lg1	
n-Nitrosodiphenylamine	86-30-6	0.00009	U		0.000094	0.0005	0.00009	mg/L	09/23/2004	14:57	111563	1	lg1	
Pentachlorophenol	87-86-5	0.000038	U	иJ	0.00004	0.0003	0.000038	mg/L	09/21/2004	21:28	111554	1	lg1	ese
Phenanthrene	85-01-8	0.000895		JH	0.000081	0.0005	0.000077	mg/L	09/23/2004	14:57	111563	1	lg1	CBC.
Phenol	108-95-2	0.0000953	U		0.0001	0.0005	0.0000953	mg/L	09/23/2004	14:57	111563	1	lg1	
Pyrene	129-00-0	0.00552			0.000088	0.0005	0.000084	mg/L	09/23/2004	14:57	111563	1	lg1	
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Job Number: 281075		TRRP	Labo	ratory	Test F	Result	S		Da	ate: 1	.0/13/2	004	
CUSTOMER: ERM Southwest, Inc Hous	ton	- PROJ	ECT: HWI	₽₩÷	•		ATTN	: Chris You	ng				
Customer Sample ID: TB01-25	A04					Laborate	ory Sample ID:	281075-015	5				
Date/Time Sampled 09/14/20	04 0:00					Sample	Matrix:	Trip Blank					
Date/Time Received: 09/14/20	04 16:33	· . ·				•							
TEST METHOD	CAS # 🦯 🦂	RESULT	Q FLAG	MDL	MQL	SQL	UNITS	Analysis Dat	e/Time	Batch	c.D.F.	Analyst	
Method: SW-846 8260B, Water													
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	09/18/2004	14:55	111218	1	zfl	
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	09/18/2004	14:55	111218	1	zfl	
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	09/18/2004	14:55	111218	1	zfl	
Ethylbenzene	100-41-4	.0.00137	U	0.00137	0.005	0.00137	mg/L	09/18/2004	14:55	111218	. 1	zfl	
Methylene Chloride	75-09-2	0.00302	JU	0.0013	0.005	0.0013	mg/L	09/18/2004	14:55	111218	1	zfl	129
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	09/18/2004	14:55	111218	1	zfl	
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	09/18/2004	14:55	111218	- 1	zfl	
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Job Number: 281075 CUSTOMER: ERM Southwest, Inc Hou	ston	TRRP	Labo	ratory	Test I	Results	S ATTN	D I: Chris Young	ate: 1	0/13/2	004
Customer Sample ID: MW-09- Date/Time Sampled	-2SA04 004 13:37 004 16:33		en in sector de la companya de la companya de la companya de la companya de la companya de la companya de la co			Laborate Sample I	bry Sample ID: Matrix:	281075-016 Water			
TEST METHOD	CAS#	RESULT	QFLAG	MDL	MQL	SQL	UNITS	Analysis Date/Time	Batch	• D.F	Analyst
Method: SW-846 8260B, Water											
1,2-Dichloroethane	107-06-2	0.00136	U	0.00136	0.005	0.00136	mg/L	09/20/2004 20:33	111218	1	zfl
Benzene	71-43-2	0.00143	U	0.00143	0.005	0.00143	mg/L	09/20/2004 20:33	111218	1	zfl
Chlorobenzene	108-90-7	0.00155	U	0.00155	0.005	0.00155	mg/L	09/20/2004 20:33	111218	1	zfl
Ethylbenzene	100-41-4	0.00137	U	0.00137	0.005	0.00137	mg/L	09/20/2004 20:33	11.1218	1	. zfl
Methylene Chloride	75-09-2	0.00137	JU	0.0013	0.005	0.0013	mg/L	09/20/2004 20:33	111218	1	zfl <sup>//</sup>
Toluene	108-88-3	0.00136	U	0.00136	0.005	0.00136	mg/L	09/20/2004 20:33	111218	1	zfl
Xylenes (total)	1330-20-7	0.00441	U	0.00441	0.015	0.00441	mg/L	09/20/2004 20:33	111218	1	zfl
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		: : :						-			
				4 · ·					· .'		
Form I			Page	61			· · · ·	· · · · · · · ·			

#### **TRRP** Laboratory Test Results Job Number: 281075 10/13/2004 Date: PROJECT: HWPW CUSTOMER: ERM Southwest, Inc.- Houston ATTN: Chris Young S. 42 . 24 Customer Sample ID: MW-09-2SA04 Laboratory Sample ID: 281075-016 Date/Time Sampled .....: 09/14/2004 13:37 Sample Matrix ...... Water Date/Time Received .....: 09/14/2004 16:33 TEST METHOD CAS# **O** FLAG MQL Analysis Date/Time RESULT MDL SOL UNITS Batch D.F. Analyst. Method: SW-846 8270C, Water 10/29/04 uJ 1,2-Diphenylhydrazine 122-66-7 0.00001 Ш 0.000011 0.0001 0.00001 09/22/2004 15:08 111554 mg/L 1 lg1 1ec-105-67-9 0.000116 0.000122 0.0005 0.000116 09/23/2004 1:28 2,4-Dimethylphenol U mg/L 111563 1 lg1 0.000009 09/22/2004 15:08 111554 2.4-Dinitrotoluene 121-14-2 0.000009 IJ 0.000009 0.0001 mg/L lg1 1 0.000026 2,6-Dinitrotoluene 606-20-2 0.000026 U 0.000027 0.0001 mg/L 09/22/2004 15:08 111554 1 lg1 0.000076 2-Chloronaphthalene 91-58-7 0.000076 IJ 0.00008 0.0005 mg/L 09/23/2004 1:28 111563 1 lg1

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0.000078

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0.000074

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0.000124

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09/22/2004 15:08 111554

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Form I

2-Methyl-4,6-dinitrophenol

2-Methylnaphthalene

4-Nitrophenol

Acenaphthene

Anthracene

Acenaphthylene

Benzo(a)anthracene

bis(2-chloroethoxy)methane

Benzo(a)pyrene

534-52-1

91-57-6

100-02-7

83-32-9

208-96-8

120-12-7

56-55-3

50-32-8

111-91-1

0.000295

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Page 62



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Job Number: 281075		TRRP	L	abo	ratory	Test I	Result	S · · · ·		D	ate: 1	10/13/2	004	
CUSTOMER: ERM Southwest, Inc H	ouston	PROJ	ЕĆŢ	r: HWI	PW.				: Chris Your	g				
Customer Sample ID: MW-	09-2SA04						Laborato	ory Sample ID:	281075-016					
Date/Time Sampled: 09/14	/2004 13:37						Sample	Matrix:	Water					
	72004 10.55		Tar	FI A O			1 OOT							7
his(2 athylheyyl)phthalate			<u>Y</u>	FLAG			0.000172	UNI15	Analysis Date	1.70	Batch	<u>ි.U.F.</u> ූ 1		0 10/29/c
Chrysene	218-01-0	0.000172			0.00018	0.0005	0.000172	mg/L	09/23/2004	1.20	111563		lal	
Dibenzofiran	132-64-0	0.00009			0.000094	0.0005	0.00009	mg/L	09/23/2004	1.20	111563		lg1	
Din butyl Phthalate	84 74 2	0.000364			0.00015	0.0005	0.000143	mg/L	09/23/2004	1.20	111562	1	lal	101
Eluoranthene	206-44-0	0.000304		u	0.00013	0.0005	0.000143	mg/L	09/23/2004	1.20	111563		lg1	ugu-
Fluorene	86-73-7	0.000093			0.000098	0.0005	0.000093	mg/L	09/23/2004	1.28	111563	1	lg1	
Nanhthalene	91_20_3	0.000067		i.T	0.000071	0.0005	0.000000	mg/L	09/23/2004	1.28	111563	1	ι <u>5</u> 1 Ισ1	IBL.
Nitrobenzene	98-95-3	0.000143		~	0.00015	0.0005	0.000143	mg/L	09/23/2004	1.20	111563	1	101	
n-Nitrosodinbenylamine	86-30-6	0.00009			0.000015	0.0005	0.000145	mg/L	09/23/2004	1.20	111563		161 101	
Pentachloronbenol	87-86-5	0.000376	Ŭ		0.00000	0.0003	0.000038	mg/L	09/22/2004	15.08	111554	· 1	lo1	
Phenanthrene	85-01-8	0.000077			0.000081	0.0005	0.000077	mg/L	09/23/2004	1.78	111563	1	101	
Phenol	108-95-2	0.0000953			0.0001	0.0005	0.0000953	mg/L	09/23/2004	1.20	111563		101	
Pvrene	129-00-0	0.000084	U		0.000088	0.0005	0.000084	mg/L	09/23/2004	1:28	111563		-5-	
- ,	12, 000					0.0000				1.20				
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Form	· · · · · · · · · · · · · · · · · · ·			Page 6	3			· · · · · · · · · · · · · · · · · · ·	-					

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Ń	Job Number.: 281075	QUALITY	CONȚROL	. RESULT	S Repor	t Date.: 10/1	3/2004	
	CUSTOMER: ERM Southwest, Inc Hous	ton PROJE	CT: HWPW		ATTN:	Chris Young		
7	QC Type Descript	ion	Reag. Code	e Lab I	D Dilu	tion Factor	Date	Time
2	Test Method: SW-846 8270C Method Description.: Semivolatile O	rganics - SIM Analys	Units is Batch(s)	: ug/	L .	Analys	t: lg1	
J	Laboratory Control Sam	ple	SVS082504C	110850			09/21/2004	1142
ר	Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limit	s F
1	Benzo(a)pyrene, Water	0.51670	<u></u> .	0.500000		103.3	30-1	30
	2,4-Dinitrotoluene, Water	0.43056		0.500000	· .	86.1	50-1 60-1	40
	2,6-Dinitrotoluene, Water Pentachlorophenol, Water	0.43914		0.500000	1 - A - A - A - A - A - A - A - A - A -	87.8 85.4	60-1 30-1	40 30
	1,2-Diphenylhydrazine, Water	0.44586		0.500000		89.2	30-1	30
	MB Method Blank		SVS082504B	110850			09/21/2004	1114
	Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limit	s F
7	Benzo(a)pyrene, Water bis(2-chloroethoxy)methane, Water	0		· · · · ·				
	2,4-Dinitrotoluene, Water	0						
7	Pentachlorophenol, Water	Ő					•	
	1,2-Diphenylhydrazine, Water	0						•
7	MS Matrix Spike		svs082504C	281075-11			09/21/2004	1305
1	Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limit	s F
_	Benzo(a)pyrene, Water	0.49004		0.500000	0	98 101	30-1	30 30
	2,4-Dinitrotoluene, Water	0.55329	•	0.500000	0	111	24-9	6 A
	2,6-Dinitrotoluene, Water Pentachlorophenol Water	0.48768		0.500000	0	98 172	30-1 5-1	30 03 A
	1,2-Diphenylhydrazine, Water	0.54337		0.500000	Ő	109	60-1	40
]		na fra saithreach an fra 18	CVC08750/ C	291075 13			00 (21 (200)	4777
		00 Booult	0C Recult		Onia Value	Colo Booul	:.:.	
ľ	Parameter/lest Description				n n		$\frac{t}{-} - \frac{1}{30.0-1}$	s r 
	his(2-chloroethoxy)methane Water	0 40870	0 50587	0.500000	0	4.9	40.0	30.0
7	2 4-Dipitrotoluene Mator	0.60088	0 55320	0.500000	0	21.2	30.0	4 0 A
	2,4 Dimitrototuene, water	0.505/4	0./07/0	0.500000	0	8.2	30.0	0.0 A
	2,0-Dinitrotoluene, water	0.50541	0.48/68	0.500000	U	101 3.6	30.0-1 30.0	20.0
Ţ	Pentachlorophenol, Water	0.76910	0.85818	0.500000	0	154 10.9	5.0-1 40.0	03.0 A
	1,2-Diphenylhydrazine, Water	0.33961	0.54337	0.500000	0	68 46 2	60.0-1 40 0	40.0
7						40.2	40.0	
1				.h. <b>4</b> 4			,	
			Page 64	* %=% REC,	R=RPD, A=ABS	Diff., D=% D	iff.	

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U							· · · · · · · · · · · · · · · · · · ·
n	Job Number.: 281075	GUALIII	CUNIKUL	KESULI	S Report	Date.: 10/1	3/2004
U							
	CUSTOMER: ERM Southwest, Inc Houston	PROJEC	T: HWPW		ATTN:	<del></del>	
$\cap$	QC Type Description		Reag. Code	e Lab I	D Diluti	on Factor	Date Time
Ų	MS Matrix Spike		SVS091004A	281075-11			09/21/2004 1227
Π	Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits F
J	Acenaphthene, Water	88.3669		5.000000	92.5113	-83	
~	Acenaphthylene, Water Anthracene, Water	5.57430 11.1836		5.000000	1.02763 6.11715	91 101	30-130 30-130
	Benzo(a)anthracene, Water	4.60869		5.000000	0	92 75	60-140 60-140
مسا	2-Chloronaphthalene, Water	4.66630		5.000000	0	93	30-130
Π	Chrysene, Water Dibenzofuran, Water	4.10248 50.9380		5.000000	49.6673	82 25	30-130 A
U	Di-n-butyl Phthalate, Water	5.17669		5.000000	0 8.08535	104	30-130 30-130
	Fluorene, Water	61.2788		5.000000	60.2845	20	30-130 A
$\mathbf{\Pi}$	2-Methylnaphthalene, Water Naphthalene, Water	5.89842 4.48265		5.000000	4.37968 0.46401	30 80	60-140 A 30-130
Ц	Nitrobenzene, Water	4.89364		5.000000	0	98	30-130
	Phenanthrene, Water	4.88579		5.000000	0.79633	82	30-130 X
$\Pi$	Pyrene, Water 2 4-Dimethylphenol Water	8.00582 3.77352		5.000000	3.55032	89 75	26-115 30-130
U	2-Methyl-4,6-dinitrophenol, Water	6.91788		5.000000	0	138	30-130 A
	4-Nitrophenol, Water Phenol, Water	4.43568		5.000000	0	29	10-80 A
U				<b>.</b>	·····		
_	MSD Matrix Spike Duplicate		SVS091004A	281075-12	:		09/21/2004 1255
$\prod$	Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Resul	t * Limits F
Ċ	Acenaphthene, Water	107.748	88,3669	5.000000	92.5113	305 19.8	46.0-118.0 A 31.0
n	Acenaphthylene, Water	5.56160	5.57430	5.000000	1.02763	91 0.2	30.0-130.0 50.0
L	Anthracene, Water	11.7313	11.1836	5.000000	6.11715	112	30.0-130.0 50.0
5	Benzo(a)anthracene, Water	4.51210	4.60869	5.000000	0	90	60.0-140.0 50.0
U	bis(2-ethylhexyl)phthalate, Water	4.34205	4.12321	5.000000	0.35260	80	60.0-140.0
	2-Chloronaphthalene, Water	4.65164	4.66630	5.000000	0	93	30.0-130.0
Π	Chrysene, Water	4.07302	4.10248	5.000000	0	81	30.0-130.0
<b>U</b>	Dibenzofuran, Water	57.6000	50.9380	5.000000	49.6673	159	30.0-130.0 A
Π	Di-n-butyl Phthalate, Water	5.41441	5.17669	5.000000	0	12.3	50.0 30.0-130.0
U	Fluoranthene, Water	13.0567	12.4913	5.000000	8.08535	4.5 99	50.0 30.0-130.0
	Fluorene, Water	72.1209	61.2788	5.000000	60.2845	4.4 237	50.0 30.0-130.0 A
IJ	2-Methylnaphthalene, Water	35.1847	5.89842	5.000000	4.37968	16.3 616	50.0 60.0-140.0 A
	Naphthalene, Water	6.69411	4.48265	5.000000	0.46401	142.6 125	30.0 г 30.0-130.0
Π	Nitrobenzene, Water	4.99660	4.89364	5.000000	0	39.6 100	50.0 30.0-130.0
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#### QUALITY CONTROL RESULTS

н. Т	Job Number.: 281075		•			Repor	t Date.: 10/1	3/2004	
CUSTOMER: ERM	Southwest, Inc Houston	PROJEC	T: HWPW			ATTN:			
QC Type	Description		Reag. Code		Lab	ID Dilu	ition Factor	Date	Time
MSD	Matrix Spike Duplicate		SVS091004A		281075-1	2		09/21/20	104 1255
Parame	eter/Test Description	QC Result	QC Result	True	Value	Orig. Value	Calc. Resul	t * Lin	nits F
n-Nitrosodipher	nylamine, Water	6.40932	6.54763		5.00000	0	128	30.0	-130.0
Phenanthrene, W	later	8.91104	4.88579		5.000000	0.7963	3 162	30.0	) 130.0 A
Pyrene, Water		8.96119	8.00582		5.000000	3,5503	58.4 2 108	50.0 26.0	) r )-115.0
2,4-Dimethylphe	enol, Water	3.84394	3.77352		5.000000	0	77	30.0	)-130.0
2-Methyl-4,6-di	initrophenol, Water	6.97188	6.91788		5.000000	0	1.8 139 0.8	50.0 30.0	) )-130.0 A
4-Nitrophenol,	Water	4.64807	4.43568		5.000000	0	93	10.0	-80.0 A
Phenol, Water		1.37655	1.46413		5.000000	0	4.7 28 6.2	50.0 10.0 23.0	) )-112.0 )
Test Method. Method Descri	: SW-846 8260B iption.: Volatile Organics		Units Batch(s)		: ug 111218	/L	Analys	t: zfl	
LCS	Laboratory Control Sample		V\$091704E					09/18/20	04 1236
Parame	eter/Test Description	QC Result	QC Result	True	Value	Orig. Value	Calc. Resul	t * Lin	nits F
Benzene, Water Chlorobenzene, 1,2-Dichloroeth Ethylbenzene, W Methylene Chlor Toluene, Water Xylenes (total)	Water nane, Water Vater ride, Water ), Water	52.7127 52.8846 56.7405 54.5410 64.3808 54.1690 161.026		1	50.00 50.00 50.00 50.00 50.00 50.00 50.00 50.0	ND ND ND 1.6912 ND ND	105.4 105.8 113.5 109.1 28 128.8 108.3 107.4	68 65 65 64 54 63 37	3-127 -129 -133 -132 -133 -133 -127 -161
LCS	Laboratory Control Sample		VS091704E					09/20/20	004 1247
Parame	eter/Test Description	QC Result	QC Result	True	Value	Orig. Value	Calc. Resul	t * Lin	nits F
Benzene, Water Chlorobenzene,	Water ·	42.9883 43.5777			50.00 50.00	ND ND	86.0 87.2	68 65	3-127 5-129

Ethylbenzene, Water 50.00 ND 88.9 44.4510 Methylene Chloride, Water 40.7610 50.00 2.47407 81.5 44.1476 50.00 ND 88.3 Toluene, Water 132.976 150.0 ND 88.7 Xylenes (total), Water - 19 -VS091704C Method Blank MB QC Result QC Result True Value Calc. Result \* Parameter/Test Description Orig. Value Benzene, Water ND ND

43.1296

ND ND

Chlorobenzene, Water 1,2-Dichloroethane, Water Ethylbenzene, Water

1,2-Dichloroethane, Water

Page 67

50.00

%=% REC, R=RPD, A=ABS Diff., D=% Diff.

ND

86.3

65-133

64-132

54-133

63-127

37-161

09/18/2004 1332

Limits

F



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Job Number.: 281075			· · · · ·		•	Report	Date.: 10/13	/2004	•	
CUSTOMER: ERM Southwest, Inc Houston	PROJEC	CT: HWPW				ATTN:				
QC Type Description		Reag. Code		Lab	ID	Dilut	ion Factor	Dat	e T	im
MB Method Blank		VS091704C						09/18	3/2004	13
Parameter/Test Description	QC Result	QC Result	True	Value	Orig. V	alue	Calc. Result	*	Limits	<u>.</u>
ethylene Chloride, Water oluene, Water ylenes (total), Water	1.69128 ND ND									
MB Method Blank		VS091704C						09/20	0/2004	13
Parameter/Test Description	QC Result	QC Result	True	Value	Orig. V	alue	Calc. Result	*	Limits	<u>.</u>
enzene, Water hlorobenzene, Water ,2-Dichloroethane, Water thylbenzene, Water ethylene Chloride, Water oluene, Water ylenes (total), Water	ND ND ND 2.47407 ND ND						· · · · · ·	<b></b>		_
MS Matrix Spike Parameter/Test Description	QC Result	VS091704E QC Result	True	281075-1 Value	1 Orig. V	alue	Calc. Result	09/18	3/2004 Limits	1
enzene, Water hlorobenzene, Water ,2-Dichloroethane, Water thylbenzene, Water ethylene Chloride, Water oluene, Water ylenes (total), Water	42.4770 41.9574 42.9045 43.6156 47.3577 42.8084 129.072		5 5 5 5 5 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00	ND ND ND ND ND ND ND		85 84 86 87 95 86 86		65-125 74-122 60-140 60-140 60-140 76-125 60-140	:   
MS Matrix Spike		VS091704E		281083-3		5.000	00	09/20	0/2004	11
Parameter/Test Description	QC Result	QC Result	True	Value	Orig. V	alue	Calc. Result	*	Limits	
enzene, Water hlorobenzene, Water ,2-Dichloroethane, Water thylbenzene, Water ethylene Chloride, Water oluene, Water ylenes (total), Water	34.5554 34.2374 36.6267 35.9950 37.4415 51.7393 149.472		5 5 5 5 5 5 15	0.00 0.00 0.00 0.00 0.00 0.00 0.00	ND ND 1 3 17 48	.58119 .54996 .5311 .0155	69 68 73 69 68 68 68 68		65-125 74-122 60-140 60-140 76-125 60-140	
MSD Matrix Spike Duplicate		VS091704E		281075-1	2			09/18	3/2004	10
Parameter/Test Description	QC Result	QC Result	True	Value	Orig. V	alue	Calc. Result	*	Limits	
enzene, Water	41.7531	42.4770	5	0.00	ND		84 1.7 8/		5.0-125 0.0	
ntoropenzene, water	41.1902	41.7374	2	0.00	ND		0.4	1	4.0-122 50.0	

#### QUALITY CONTROL RESULTS

SE.

Xylenes (total), Water

Job Number.: 281075

STL

Report Date.: 10/13/2004

85

0.9

60.0-140.0

30.0

CUSTOMER: EF	RM Southwest, Inc Houston	PROJEC	T: HWPW				ATTN:			
QC Type	Description	· · · · · · · · · · · · · · · · · · ·	Reag.	Code	Lab	ID	Dilutior	Factor	Date	Time
MSD	Matrix Spike Duplicate		VS09170	4E	281075-	12			09/18/200	4 1645
Paran	meter/Test Description	QC Result	QC Resul	t T	rue Value	Orig. V	alue Ca	lc. Resul	t * Limi	ts F
thylbenzene,	Water	43.4722	43.61	56	50.00	ND		87	60.0-	140.0
Methylene Chlo	oride, Water	42.3456	47.35	77	50.00	ND	•	85	60.0-	140.0
Toluene, Water		42.4328	42.80	84	50.00	ND		11.2 85 0.9	30.0 76.0- 30.0	125.0

129.072

150.0

ND

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I MOD		1 Veno170/ c	1. 304007. Z	E 00000	00/20/200/ 90//
I MSU I MATCIX SDIKE DUDLI	CALCE I I I I I I I I I I I I I I I I I I I	L VSUYI/U4E D WO HOL		1 <b>3.UUUUU</b>	. 09/20/2004 . 1044
I is a second state in the second state of the second state in the second state of		<ul> <li>A the second distribution of the providence of the second s Second second s Second second se</li></ul>	<ul> <li>Construction of the second seco</li></ul>	erene interaction of the second second ways of	la esta la férica deservada esta esta esta esta esta esta esta est

127.949

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits F 🅤
Benzene, Water	37.1161	34.5554	50.00	ND	74	65.0-125.0
Chlorobenzene, Water	37.4296	34.2374	50.00	ND	75	30.0 74.0-122.0
1,2-Dichloroethane, Water	39.3715	36.6267	50.00	ND	8.9 79	30.0 60.0-140.0
Ethylbenzene, Water	38.5740	35.9950	50.00	1.58119	7.2 · 74	30.0 • 60.0-140.0
Methylene Chloride, Water	41.0077	37.4415	50.00	3.54996	6.9 75	30.0 60.0-140.0
Toluene, Water	53.6984	51.7393	50.00	17.5311	9.1 72	30.0 L 76.0-125.0 A
Xylenes (total), Water	157.635	149.472	150.0	48.0155	3.7 73	30.0 60.0-140.0
					5.3	30.0

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%=% REC, R=RPD, A=ABS Diff., D=% Diff.



Job Number.: 281075

SURROGATE RECOVERIES REPORT

Report Date.: 10/13/2004

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: HWPW ATTN: Chris Young 

Û	Method Batch(s).		.: Volatile Org .: 111218	anics				Metho Test	d Code Matrix	.: 8260 .: Water	······	Prep Batch: Equipment Code: GCMSVOA06				
n	Lab ID	DT	Sample ID					Date	12DCED	BRFLBE	DBRFLM	TOLD8				
Ш	281075- 1		MW-08-2SA04				0	9/18/2004	89.8	113.1	91.4	94.0	· · .			. •
-	281075- 2		P-10-2SA04				0	9/18/2004	89.1	111.9	91.9	94.1				
	281075- 3		MW-07-2SA04				0	9/18/2004	91.2	112.7	92.4	95.0				
Ô.	281075- 4		MW-5-2SA04				0	9/18/2004	92.2	112.5	93.5	94.7				
11	281075- 5		MW-11B-2SA04				0	9/18/2004	89.2	113.5	91.2	95.0				
	281075- 6		MW-04-2SA04				0	9/18/2004	87.1	108.3	88.8	90.7				
	281075- 7		MW-10B-2SA04				0	9/18/2004	85.9	113.7	88.7	94.2				
-	281075- 8		P-12-2SA04				. 0	9/18/2004	84.0	108.3	84.4	91.0				
	281075- 9		FB-091404				0	9/18/2004	85.7	108.5	87.8	90.6	1.1			
	281075- 10		MW-01A-2SA04				0	9/18/2004	87.0	110.5	90.0	92.6				
Ų,	281075- 11		MW-01A-2SA04 MS	5			0	9/18/2004	86.6	115.5	90.8	95.5				
	281075- 11 MS		MW-01A-25A04 MS	5			0	9/18/2004	86.6	115.5	90.8	95.5	· · ·			
n -	281075- 12		MW-01-2SA04 MSD	)	;		0	9/18/2004	89.1	110.0	92.1	93.2				
11	281075- 12 MSD		MW-01-2SA04 MSD	)			0	9/18/2004	89.1	110.0	92.1	93.2				
ų	281075- 13		MW-11A-2SA04				0	9/20/2004	85.7	110.9	86.8	91.9				•
	281075- 14	÷	MW-11AD-2SA04				0	9/20/2004	78.6	110.0	79.6	89.8				
_	281075- 15		TB01-2SA04				0	9/18/2004	87.2	110.2	88.6	91.3				
<b>I )</b>	281075- 16		MW-09-25A04				0	9/20/2004	77.7	109.5	77.7	90.1				
11	281083- 3 MS		MW-8		•		0	9/20/2004	80.1	114.2	81.5	93.7				
	281083- 3 MSD		MW-8				0	9/20/2004	82.3	114.3	84.1	92.6				
	11121821 LCS						0	9/18/2004	90.3	115.0	94.5	95.2				
	11121821 MB						0	9/18/2004	88.5	110.3	88.7	94.3				
11	11121821 LCS						0	9/20/2004	85.0	121.8	86.3	97.5				
<b>u</b>	11121821 MB						0	9/20/2004	83.0	115.8	83.6	95.7				
п	Test Test	Desc	ription			Limi	ts						•			
11	12DCED 1 2-D	lich	oroethane-d4			 70 -	130	-							•	
<u> </u>		mofi	uorohenzene			70 -	130						· · ·			
	DROFIN Dibro	mofi	uoromethane			70 -	130									
0		ne-c	18			70 -	130									

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### SURROGATE RECOVERIES REPORT

STL

Job Number.: 281075

Report Date.: 10/13/2004

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CUSTOMER: 483648 PROJECT: HWPW ATTN: Chris Young

Met Bat	hod		<pre>: Semivolatile Orga: 111563</pre>	anics, Low Le	vel	Metho Test	d Code Matrix	.: 8270L .: Water	L	Prep Ba Equipme	nt Code:	110849 EGCMS06	
Lab ID		DT	Sample ID			Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14	
281075- 1	 		MW-08-2SA04		····	09/21/2004	114.2	78.1	41.8	74.1	27.9	95.7	
81075- 2	2		P-10-2SA04			09/21/2004	126.5A	98.0	44.4	94.0	33.2	97.9	
81075- 2	2		P-10-2SA04			09/23/2004	131.7d	96.3	94.3	87.1	61.5	118.2	
81075- 3	5		MW-07-2SA04			09/21/2004	114.6	92.2	38.4	86.9	31.6	96.1	
B1075- 4	•		MW-5-2SA04			09/22/2004	134.7A	118.9A	59.1	105.7	37.7	135.4	
B1075- 5	;		MW-11B-2SA04			09/22/2004	141.9A	114.1	35.6	79.7	34.4	134.8	
81075- 5	;		MW-11B-2SA04			09/23/2004	145.2d	99.8	98.1	97.2	47.0	113.8	
31075- 6	5		MW-04-2SA04			09/22/2004	143.9A	113.2	59.6	110.1	35.4	134.9	
31075- 7	7		MW-10B-2SA04			09/22/2004	147.6A	119.1A	39.1	103.3	38.3	136.3	
B1075- 7	7		MW-10B-2SA04			09/23/2004	138.3d	97.4	79.6	81.0	38.6	114.2	
81075- 8	3		P-12-2SA04			09/22/2004	122.4	84.7	32.1	71.1	26.6	103.5	
81075- 9	>		FB-091404		· •	09/23/2004	136.0A	106.9	47.3	103.6	31.8	118.2	
31075- 10	)		MW-01A-2SA04			09/21/2004	122.8	97.9	45.3	98.1	34.9	108.0	
1075- 10	)		MW-01A-2SA04			09/23/2004	183.2d	108.3	155.5d	66.0	64.6	117.6	
1075- 11			MW-01A-2SAO4 MS			09/21/2004	123.9A	94.7	37.7	90.0	36.5	99.7	
1075- 11			MW-01A-2SA04 MS			09/23/2004	175.4d	104.3	155.4d	84.4	72.2	119.8	
1075- 11	MS		MW-01A-2SA04 MS			09/21/2004	123.9A	94.7	37.7	90.0	36.5	99.7	
1075- 12	,		MW-01-2SA04 MSD			09/21/2004	127.2A	94.7	38.7	94.3	34.2	102.8	•
1075- 12	2		MW-01-2SA04 MSD			09/23/2004	180.0d	115.9	166.8d	88.8	84.7	108.1	
1075- 12	MSD		MW-01-25A04 MSD			09/21/2004	127.2A	94.7	38.7	94.3	34.2	102.8	
1075- 13	5		MW-11A-25A04			09/23/2004	119.0	97.6	43.1	106.9	37.5 ·	108.7	
1075- 17	5		MW-11A-25A04			09/23/2004	111.2	93.9	79.9	76.0	39.9	92.5	
31075- 14			MW-11AD-2SA04			09/23/2004	140.1A	82.2	31.8	63.9	22.2	118.7	
31075 - 14			MW-11AD-2SA04			09/23/2004	147.5d	76.1	72.2	41.9	36.2	97.8	
31075 - 16	5		MW-09-25A04			09/23/2004	131.8A	99.1	39.4	87.9	21.8	119.9	
1084921	LCS					09/21/2004	119.6	78.9	39.7	75.0	31.1	92.1	
1084921	MB					09/21/2004	125.0K	87.3	48.5	84.4	32.8	103.6	1
íest	Test	Des	scription		Limits					- - -	<i>t</i>	•	
6ТВР	2,4,6	5-Tr	ibromophenol		10 - 123	5							
LUBP	2-Fl	JOLO	biphenyl		43 - 116	5							
LUPH	2-Flu	Jord	phenol		21 - 100	) .							
TRD5	Nitro	ober	izene-d5		35 - 114	•							
IEND6	Pheno	ol-c	16		10 - 94								
PD14	Tord	-	/I - d1/		33 - 14'								



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SURROGATE RECOVERIES REPORT

Report Date.: 10/13/2004

Job Number.: 281075

CUSTOMER: 483648 ATTN: Chris Young

Method. Batch(s	Method: Semivolatile Organics - SIM Analysis Batch(s): 111554			d Code Matrix	.: 8270s .: Water	Prep Batch: 110850 Equipment Code: EGCMS08				
Lab ID	DT	Sample ID	Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14	
281075- 1		MW-08-2SA04	09/21/2004	97.7	79.0	39.8	86.2	28.1	86.6	
281075- 2		P-10-2SA04	09/21/2004	105.8	78.0	45.5	98.1	35.6	86.3	
281075- 3		MW-07-2SA04	09/21/2004	84.9	74.3	37.8	89.8	32.5	88.3	
281075- 4		MW-5-2SA04	09/21/2004	137.OA	93.8	38.0	103.1	39.6	108.5 \cdots	
281075- 5		MW-11B-2SA04	09/21/2004	129.9A	103.0	50.4	117.4A	43.6	111.2	· .
281075- 6		MW-04-2SA04	09/21/2004	112.6	88.9	40.8	108.6	39.2	113.8	
281075- 7		MW-10B-2SA04	09/21/2004	139.7A	97.8	37.8	99.1	39.9	117.4	
281075- 8		P-12-2SA04	09/21/2004	93.8	72.3	32.5	74.2	28.6	90.0	
281075- 9		FB-091404	09/21/2004	93.7	86.0	52.0	110.7	38.5	106.0	1 - A
281075- 10		MW-01A-2SA04	09/21/2004	92.4	86.3	49.7	103.0	37.3	90.8	
281075- 11		MW-01A-2SAO4 MS	09/21/2004	116.0	83.3	40.4	93.4	36.0	88.8	
281075- 11 MS		MW-01A-2SAO4 MS	09/21/2004	116.0	83.3	40.4	93.4	36.0	88.8	
281075- 12		MW-01-2SA04 MSD	09/21/2004	119.8	74.8	31.5	71.7	31.0	97.0	
281075- 12 MSD		MW-01-2SA04 MSD	09/21/2004	119.8	74.8	31.5	71.7	31.0	97.0	
281075- 13		MW-11A-2SA04	09/21/2004	91.5	84.0	46.7	104.6	33.6	94.3	
281075- 14		MW-11AD-2SA04	09/21/2004	99.7	71.1	21.4	65.4	27.1	100.7	
281075- 16		MW-09-2SA04	09/22/2004	147.6A	85.4	39.3	90.7	25.3	100.2	
11085021 LCS			09/21/2004	118.3	72.8	43.8	81.7	34.7	92.2	
11085021 MB			09/21/2004	113.2	76.7	46.5	87.1	36.1	94.2	
Test Tes	t Des	cription Lim	its							

246TBP	2,4,6-Tribromophenol	10 - 123
2FLUBP	2-Fluorobiphenyl	43 - 116
2FLUPH	2-Fluorophenol	21 - 100
NITRD5	Nitrobenzene-d5	35 - 114
PHEND6	Phenol-d6	10 - 94
TERD14	Terphenyl-d14	33 - 141



Report Date: 10/13/2004

#### REPORT COMMENTS

- All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
   According to 40CFR Part 136.3, pH, Chlorine Residual, and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field,(e.g. pH
- Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.
- 4) For all USACE projects, the QC limits are based on "mean +/- 2 sigma", which are the warning limits.

#### General Information:

- Cresylic Acid is the combination of o,m and p-Cresol. The combination is reported as the final result.
- m-Cresol and p-Cresol co-elute. The result of the two is reported as either m&p-cresol or as p-cresol.
- m-Xylene and p-Xylene co-elute. The result of the two is reported as m.p-Xylene.

511.

- N-Nitrosodiphenylamine decomposes in the gas chromatograph inlet forming dipheylamine and, consequently, may be detected as diphenylamine.
- Methylene Chloride and Acetone are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination.
- Trimethysilyl(Diazomethane) is used to esterify acid herbicides in Method SW-846 8151A.
- For Inorganic analyses, duplicate QC limits are determined as follows: If the sample result is less than or equal to 5 times the reporting limit, the RPD limit is equal to the reporting limit. If the sample result is greater than 5 times the reporting limit, the RPD limit is the method defined RPD.

#### Explanation of Qualifiers:

U - This qualifier indicates that the analyte was analyzed but not detected.

- J (Organics only) This qualifier indicates that the analyte is an estimated value between the RL and the MDL.
- B (Inorganics only) This Qualifier indicates that the analyte is an estimated value between the RL and the MDL.
- N (Organics only) This flag indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic charachterization of a TIC, such as "chlorinated hydrocarbon", the "N" flag is not used.

Explanation of General QC Outliers:

- A Matrix interference present in sample.
- a MS/MSD analyses yielded comparable poor recoveries, indicating a possible matrix interference. Method performance is demonstrated by acceptable LCS recoveries.
- b Target analyte was found in the method blank.
- M QC sample analysis yielded recoveries outside QC acceptance criteria. This sample was reanalyzed.
- L LCS analysis yielded high recoveries, indicating a potential high bias. No target analytes were observed above the RL in the associated samples.
- G Marginal outlier within 1% of acceptance criteria.
- r RPD value is outside method acceptance criteria.
- C Poor RPD values observed due to the non-homogenous nature of the sample.

0 - Sample required dilution due to matrix interference.

- D Sample reported from a dilution.
- d Spike and/or surrogate diluted.
- P The recovery of this analyte is outside default QC limits. The data is accepted and will be used to calculate in-house statistical limits.
- E The reported concentration exceeds the instrument calibration.
- F The analyte is outside QC limits. The sample data is accepted since this analyte is not reported in associated samples.

H - Continuing Calibration Verification (CCV) standard is not associated with the samples reported.

q - See the subcontract final report for qualifier explanation.



- Method Duplicate



# QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/13/2004

- MDL Method Detection Limit
- MS Matrix Spike
- MSD Matrix Spike Duplicate
- ND Not Detected
- PB Preparation Blank
- PREPF Preparation Factor RL - Reporting Limit
- RPD Relative Percent Difference
- RFD Relative Percent Difference
- RRF Relative Response Factor RT - Retention Time
- DU Duplicate

Method References:

- (1) EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-94-111 Methods for the Determination of MEtals in Environmental Samples, Supplement I, May 1994.
- (3) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1993; Update IIB, January 1995; Update III, December 1996, Update IVA January 1998, Update IVB November 2000.
- (4) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989), 18th Edition (1992), 19th Edition (1995), 20th Edition (1998).
- (5) HACH Water Analysis Handbook 3rd Edition (1997).
- (6) Federal Register, July 1, 1990 (40 CFR Part 136 Appendix A).
- (7) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.
- (8) ASIM Annual Book of Methods (Various Years)
- (9) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.



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LABORATORY CHRONICLE

PROJECT: HWPW

Job Number: 281075

CUSTOMER: ERM Southwest, Inc.- Houston

Date: 10/13/2004

ATTN: Chris Young

						·		
Lab ID: 281075-1	Client ID: MW-08-2SA04	Date Re	cvd: 09/	14/2004	Sample	Date: 09/13/2	004	
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME A	NALYZED	DILUTION
	Data Package Validation	1	112931			10/13/2004	0000	
	Electronic Data Deliverables	1	81662			00/20/2004	1000	
			44002			07/27/2004	1000	
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850			09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	11 A.L.
	GC/MS Semi-Volatile Package Production	1	111572			09/27/2004	1400	
	CC/NS Valatilas Data Backage Broduction	i	111763			00/20/2004	0830	
	de/ms volatiles bala Package Production	-	111705	440050		07/27/2004	0050	4 00000
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850		09/21/2004	1621	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849		09/21/2004	1323	1.00000
SU-846 8260B	Volatile Organics	1	111218			09/18/2004	1713	1.00000
34 040 02008	votatite organico	•	1112.0			077 107 2004		
· · · · · · · · · · · · · · · · · · ·								•
Lab ID: 281075-2	Client ID: P-10-2SA04	Date Re	cvd: 09/	14/2004	Sample	Date: 09/13/2	004	
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME A	NALYZED	DILUTION
SU-8/6 35100	Extraction (Sen Europel) SVOC - SIM	1	110850			09/16/2004	1100	
30-040 35100	Extraction (Sep. Furnel) SVOC STM	÷	1100/0			00/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVUC LOW Level	1	110049			09/10/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850		09/21/2004	1649	1.00000
SW-846 8270C	Semivolatile Organics. Low Level	1	111563	110849		09/21/2004	1351	1.00000
SU-9/4 9370C	Somivalatila Organica, Lou Loval	1	111563	1108/.0		00/23/200/	1525	5 00000
SW-040 02/00	Semivolatile organics, tow Level		111303	110047		00/10/2004	17/0	1.00000
SW-846 8260B	Volatile Organics	1	111218			09/18/2004	1740	1.00000
						•		
Lab ID. 281075-3	Client ID: MW-07-2SA04	Date Re	cvd: 09/	14/2004	Samole	Date: 09/13/2	004	
	DESCRIPTION	DI IN#	PATCH#	DDED BT	#(\$)	DATE /TIME A		DILUTION
METHOD	DESCRIPTION	KUN#	440050	FREF DI	#(3)	00 (1/ (200/	4400	DILOTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850			09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	
SU-8/6 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850		09/21/2004	1717	1.00000
SW 040 02700	Semivolatile Organica Law Lavel		111547	1109/0		00/21/200/	1/10	1 00000
SW-846 8270C	Semivolatile organics, Low Level	1	111565	110049		09/21/2004	1419	1.00000
SW-846 8260B	Volatile Organics	1	111218			09/18/2004	1808	1.00000
1ab ID+ 281075-4	Client ID: MW-5-2SA04	Date Re	cvd: 09/	14/2004	Samole	Date: 09/14/2	004	
		DUN#	DATCU#	DOCD OT	#(6)	DATE /TIME A		DILUTION
METHOD	DESCRIPTION	KUN#	DAILN#	PKCP DI	#(3)	DATE/TIME A	NALIZED	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850			09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	
SU-8/6 82700	Semivolatile Organice - SIM Analysis	1	111554	110850		09/21/2004	1745	1 00000
SW-040 82700	Semi votatite organica Sim Anatysia	4	444547	110020		00/22/2004	21/7	1.00000
SW-846 8270C	Semivolatile Urganics, Low Level		111202	110649		09/22/2004	2141	1.00000
SW-846 8260B	Volatile Organics	1	111218			09/18/2004	1836	1.00000
							•	
1 ab ID+ 281075-5	Client ID: MW-11B-2SA04	Date Re	cvd: 09/	14/2004	Samole	Date: 09/14/2	004	
	DESCRIPTION	DI 111#	BATCH#	DDCD DT	#(8)	DATE /TIME A		DILUTION
METHOD	DESCRIPTION	RON#	6400E0	PREF DI	#(3)	00/1/ 11/1C A	AALIZED	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850			09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	
SW-846 82700	Semivolatile Organics - SIM Analysis	1	111554	110850		09/21/2004	1813	1.00000
	Semivalatile Organice Ley Level	1	111563	1108/0		00/22/200/	221/	1 00000
SW-040 02/UL	Semivolatile organics, Low Level		111505	110047		09/22/2004	2214	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111565	110849		09/23/2004	1553	5.00000
SW-846 8260B	Volatile Organics	1	111218			09/18/2004	1903	1.00000
Lob ID. 281075-6	Client ID: MU-04-25004	Data Pa	avd. 00/	14/2004	Samola	Data - 00/14/2	006	
Lab 10: 2010/3-0	C(TENL ID: NW-04-23A04			14/2004	- Jumple			
METHOD	DESCRIPTION	RUN#	BATCH#	AKEN RI	#(S)	DATE/TIME A	NALYZED	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850			09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	•
SU-8/4 93700	Semivolatile Organice - SIM Analycic	1	11155/	110850		00/21/2004	18/1	1 00000
3W-040 02/UL	Semivolatile Organics - Sim Andlysis		111554	110050		07/21/2004	1041	1.00000
SW-846 82/0C	Semivolatile Organics, Low Level	1	111565	110849		09/22/2004	2242	1.00000
SW-846 8260B	Volatile Organics	1	111218			09/18/2004	1931	1.00000
	-							
Lab ID+ 281075-7	Client ID: MW-108-25404	Date Ro	cvd: 00/	14/2004	Samole	Date: 00/14/2	nn <u>a</u> .	
METUOD			DATCU#	, LOU-	#/61	DATE /TIME A		DIUTION
MEIHOU	VESURIFIIUN	KUN#	DAILH	PKEP BI	#(3)	DATE/TIME A	NALIZEU	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850			09/16/2004	1100	

#### LABORATORY CHRONICLE Job Number: 281075 Date: 10/13/2004 CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: HWPW ATTN: Chris Young Lab ID: 281075-7 Client ID: MW-10B-2SA04 Date Recvd: 09/14/2004 Sample Date: 09/14/2004 DESCRIPTION RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED METHOD DILUTION 1 110849 SW-846 3510C Extraction (Sep. Funnel) SVOC Low Level 09/16/2004 1100 Semivolatile Organics - SIM Analysis 1 111554 110850 1 111563 110849 1 111563 110849 SW-846 8270C 09/21/2004 1908 1 00000 Semivolatile Organics, Low Level Semivolatile Organics, Low Level SW-846 8270C 09/22/2004 2310 1.00000 SW-846 8270C 4.00000 09/23/2004 1621 SW-846 8260B Volatile Organics 1 111218 09/18/2004 1958 1.00000 Lab ID: 281075-8 Date Recvd: 09/14/2004 Sample Date: 09/14/2004 Client ID: P-12-2SA04 DESCRIPTION RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED METHOD DILUTION Extraction (Sep. Funnel) SVOC - SIM Extraction (Sep. Funnel) SVOC Low Level 1 110850 SW-846 3510C 09/16/2004 1100 SW-846 3510C 1 110849 09/16/2004 1100 Extraction (sep. runner, side Let. Semivolatile Organics - SIM Analysis 1 111554 110850 1.00000 SW-846 8270C 09/21/2004 1936 09/22/2004 1.00000 . 1 1 111563 110849 2337 SW-846 8270C Semivolatile Organics, Low Level SW-846 8260B 1.00000 Volatile Organics 111218 09/18/2004 2026 Lab ID: 281075-9 Client ID: FB-091404 Date Recvd: 09/14/2004 Sample Date: 09/14/2004 RUN# BATCH# PREP BT #(S) METHOD DESCRIPTION DATE/TIME ANALYZED DILUTION Extraction (Sep. Funnel) SVOC - SIM SW-846 3510C 1 110850 09/16/2004 1100 SW-846 3510C Extraction (Sep. Funnel) SVOC Low Level 1 110849 09/16/2004 1100 1 1 Semivolatile Organics - SIM Analysis 09/21/2004 SW-846 8270C 111554 110850 2004 1.00000 1.00000 SW-846 8270C Semivolatile Organics, Low Level 111563 110849 09/23/2004 0005 1 SW-846 8260B Volatile Organics 111218 09/18/2004 1522 1.00000 Date Recvd: 09/14/2004 Sample Date: 09/14/2004 Client ID: MW-01A-2SA04 RUN# BATCH# PREP BT #(S) 1 110850 Lab ID: 281075-10 DESCRIPTION DATE/TIME ANALYZED METHOD DILUTION Extraction (Sep. Funnel) SVOC - SIM 1 110850 1 110849 1 111554 SW-846 3510C 09/16/2004 1100 Extraction (Sep. Funnel) SVOC - SIM Extraction (Sep. Funnel) SVOC Low Level Semivolatile Organics - SIM Analysis Semivolatile Organics, Low Level Semivolatile Organics, Low Level SW-846 3510C 09/16/2004 1100 111554 110850 1.00000 09/21/2004 2032 SW-846 8270C 1 111563 110849 1.00000 09/21/2004 1200 SW-846 8270C 111563 110849 09/23/2004 0224 10.0000 SW-846 8270C 1 SW-846 8260B Volatile Organics 1 111218 09/18/2004 1550 1.00000 Lab ID: 281075-11 Client ID: MW-01A-2SA04 MS Date Recvd: 09/14/2004 Sample Date: 09/14/2004 DESCRIPTION Date Recvoit 09/14/2004 Sample Date: 09/14/2004 DESCRIPTION RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED Extraction (Sep. Funnel) SVOC - SIM 1 110849 09/16/2004 1100 Extraction (Sep. Funnel) SVOC Low Level 1 110850 09/16/2004 1100 Semivolatile Organics - SIM Analysis 1 111554 110849 09/21/2004 1305 Semivolatile Organics, Low Level 1 111563 110849 09/21/2004 1227 Semivolatile Organics, Low Level 1 111563 110849 09/23/2004 0252 METHOD DILUTION SW-846 3510C SW-846 3510C 1.00000 SW-846 8270C 1.00000 SW-846 8270C SW-846 8270C 10.0000 1.00000 111218 09/18/2004 1617 SW-846 8260B Volatile Organics 1 Date Recvd: 09/14/2004 Sample Date: 09/14/2004 Lab ID: 281075-12 Client ID: MW-01-2SA04 MSD DILUTION METHOD DESCRIPTION RUN# BATCH# PREP BT #(S) DATE/TIME ANALYZED Extraction (Sep. Funnel) SVOC - SIM Extraction (Sep. Funnel) SVOC Low Level 1 SW-846 3510C 110849 09/16/2004 1100 SW-846 3510C 110850 09/16/2004 1100 Semivolatile Organics - SIM Analysis111050Semivolatile Organics, Low Level1111563110849Semivolatile Organics, Low Level1111563110849Velatile Organics1111563110849 09/21/2004 1.00000 SW-846 8270C 1333 1.00000 SW-846 8270C 09/21/2004 1255 SW-846 8270C 09/23/2004 0319 10.0000 Volatile Organics 1 SW-846 8260B 111218 1.00000 09/18/2004 1645 Date Recvd: 09/14/2004 Sample Date: 09/14/2004 Client ID: MW-11A-2SA04 Lab ID: 281075-13 Extraction (Sep. Funnel) SVOC - SIM 1 110850 METHOD DATE/TIME ANALYZED DILUTION 1 110850 1 110849 1 111554 1 111563 SW-846 3510C 09/16/2004 1100 SW-846 3510C Extraction (Sep. Funnel) SVOC Low Level 09/16/2004 1100 Semivolatile Organics - SIM Analysis 111554 110850 SW-846 8270C 09/21/2004 2100 1.00000 SW-846 8270C Semivolatile Organics, Low Level 111563 110849 1.00000 09/23/2004 0033

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Job Number: 281075

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LABORATORY CHRONICLE

Date: 10/13/2004

CUSTOMER: ERM Sou	thwest, Inc Houston PROJE	ECT: HWPW			,	ATTN: Chris You	Jing	
Lab ID: 281075-13	Client ID: MW-11A-2SA04	Date Re	cvd: 09/	14/2004	Sample	Date: 09/14/20	004	
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME AN	ALYZED	DILUTION
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849		09/23/2004	1649	4.00000
SW-846 8260B	Volatile Organics	1	111218			09/20/2004	1938	1.00000
Lab ID: 281075-14	Client ID: MW-11AD-2SA04	Date Re	cvd: 09/	14/2004	Sample	Date: 09/14/20	004	:
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME AN	NALYZED	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850			09/16/2004	1100	
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1	111554	110850		09/21/2004	2128	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849		09/23/2004	1457	1.00000
SW-846 8270C	Semivolatile Organics. Low Level	1	111563	110849		09/23/2004	1716	4.00000
SW-846 8260B	Volatile Organics	- 1	111218			09/20/2004	2006	1.00000
Lab ID: 281075-15	Client ID: TB01-2SA04	Date Re	cvd: 09/	14/2004	Sample	Date: 09/14/20	004	
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME AN	VALYZED	DILUTION
SW-846 82608	Volatile Organics	1	111218			09/18/2004	1455	1.00000
Lab ID: 281075-16	Client ID: MW-09-2SA04	Date Re		/14/2004	Sample	Date: 09/14/20	004	
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME AN	VALYZED	DILUTION
SW-846 3510C	Extraction (Sep. Funnel) SVOC - SIM	1	110850			09/16/2004	1100	•
SW-846 3510C	Extraction (Sep. Funnel) SVOC Low Level	1	110849			09/16/2004	1100	
SW-846 8270C	Semivolatile Organics - SIM Analysis	1.	111554	110850		09/22/2004	1508	1.00000
SW-846 8270C	Semivolatile Organics, Low Level	1	111563	110849		09/23/2004	0128	1.00000
SU-8/6 82608	Volatile Organice	1	111218			09/20/2004	2033	1.00000

# APPENDIX C

## Data Usability Summary

# Houston Wood Preserving Works Houston, Texas

Environmental Resources Management (ERM) reviewed a laboratory analytical data package 281075 from Severn Trent Laboratories of Houston, Texas for the analysis of 12 ground water samples collected on September 13 and 14, 2004 in the area of the Union Pacific Railroad property former Houston Wood Preserving Works site. Data were reviewed to assess conformance with the requirements of the *Review and Reporting of COC Concentration Data* TRRP-13 (December 2002), and adherence to project data quality objectives.

Purpose of Sampling Event: Semiannual ground water monitoring.

Analysis requested included:

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SW-846 8270C – Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) (low-level and Selective Ion Monitoring (SIM))

SW-846 8260B – Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Data were reviewed and validated as described in the TRRP-13 Guidance Document and the results of the review/validation are discussed in this Data Usability Summary (DUS). The following laboratory submittals were reviewed by ERM:

- Analytical data report,
- Laboratory Review Checklist (LRC), and
- Exception Reports (ER).

The results of supporting quality control (QC) analyses are summarized in the QC section of the analytical report.

The reportable data, LRCs and ERs included in this review are attached to this DUS.

Introduction

Eleven ground water samples and one duplicate ground water sample were analyzed for select semivolatile organic compounds (SVOCs) by low-level and SIM methods and select volatile organic compounds (VOCs). One field blanks was provided to the laboratory for analysis of SVOCs and VOCs. One trip blank was provided with the

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laboratory package and analyzed by the laboratory for VOCs only. Table 1 lists the sample identifications cross-referenced to laboratory identifications.

# Data Review / Validation Results

# Analytical Results

VOCs and SVOCs were reported in mg/L. Qualified sample data are listed on Table 2. Non-detected results are reported as less than the value of the sample quantitation limit (SQL) as defined by TRRP. According to the LRC, some SQLs were elevated due to dilutions necessary for analysis.

# **Preservation and Holding Times**

The samples were evaluated for agreement with the chain-of-custody (COC). The samples were received in the appropriate containers and in good condition with most of the paperwork filled out properly. According to the sample receipt checklist, the laboratory received sample MW-09-2SA04, but it was not listed on the COC. Sample receipt temperature was within the acceptance criteria of 4 + / - 2 degrees C. The samples were preserved in the field as specified in SW-846 Table 2-36. Samples were prepared and analyzed within holding times as specified in SW-846 Table 2-36.

# **Calibrations and Tunes**

According to the LRC, initial calibration and continuing calibration data met SW-846 method requirements for VOC and SVOC analyses. The data package documents satisfactory instrument performance calibrations (GC/MS tunes) for VOC and SVOC analyses.

## **Blanks**

# Method blank analyses were reported as not-detected for SVOC SIM.

The VOCs method blank analyzed on 9/18/04 at 13:32 had a detection of methylene chloride of 1.69128 ug/L. Samples FB-091404 and TB01-2SA04 had detections of methylene chloride less than 10 times the method blank concentration and were qualified as not-detected (U). VOCs method blank analyzed on 9/20/04 at 13:42 had a detection of methylene chloride of 2.47407 ug/L. Sample MW-09-2SA04 had a detection of methylene chloride less than 10 times the method blank concentration and was qualified as not-detected (U).

SVOC low-level method blank had a reported detection of di-n-butyl phthalate (0.22612 ug/L). Samples MW-08-2SA04, P-10-2SA04, MW-07-2SA04, MW-11B-2SA04, MW-04-2SA04, MW-10B-2SA04, P-12-2SA04, FB-091404, MW-11A-2SA04, MW-11AD-2SA04 and MW-09-2SA04 had detections of di-n-butyl phthalate less than 10X the method blank concentration, and were qualified as not-detected (U) for di-n-butyl phthalate, due to method blank contamination.

One trip blank (TB01-2SA04) was received by the laboratory, and was reported as detected for methylene chloride (0.00302 J mg/L). Samples FB-091404 and MW-09-2SA04 had detections of methylene chloride less than 10X the trip blank concentration and were qualified as not-detected (U), due to trip blank contamination.

The field blank (FB-091404) was reported as detected for methylene chloride (0.00281 J mg/L) and di-n-butyl phthalate (0.000356 mg/L). Sample MW-09-2SA04 had a detection of methylene chloride less than 10 times the field blank concentration and was qualified as not-detected (U). Samples MW-11B-2SA04, MW-04-2SA04, MW-10B-2SA04, P-12-2SA04, MW-11A-2SA04, MW-11AD-2SA04 and MW-09-2SA04 collected on 9/14/04 had detections of di-n-butyl phthalate less than 10X the field blank concentration, and were qualified as not-detected (U) for di-n-butyl phthalate, due to field blank contamination.

### Surrogate Recoveries

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VOC surrogates were within laboratory-supplied acceptance limits for all samples.

SVOC low-level analysis had elevated surrogate 2,4,6-tribromophenol recovery for samples P-10-2SA04, MW-11B-2SA04, MW-04-2SA04, FB-091404, MW-11AD-2SA04 and MW-09-2SA04 (all at 1X dilution). The other five surrogates were within acceptance limits, so qualification of the data was not necessary. Surrogate 2,4,6-tribromophenol also had elevated recovery for samples P-10-2SA04 5X dilution, MW-11B-2SA04 5X dilution, MW-10B-2SA04 4X dilution and MW-11AD-2SA04 4X dilution. The other five surrogates were within acceptance limits, so qualification of the data was not necessary. Samples MW-5-2SA04 1X dilution and MW-10B-2SA04 1X dilution had elevated surrogate 2,4,6-tribromophenol and 2-fluorobiphenyl recoveries. Since only one acid and one base surrogate were outside limits and the other four surrogates were within acceptance limits, qualification of the data was not necessary. Sample MW-01A-2SA04 10X dilution had elevated surrogate 2,4,6-tribromophenol and 2-fluorobiphenyl recoveries. Since only one acid and one base surrogate swere outside limits and the other four surrogates were within acceptance limits, qualification of the data was not necessary. Sample MW-01A-2SA04 10X dilution had elevated surrogate 2,4,6-tribromophenol and 2-fluorobiphenyl recoveries. Since the surrogates were diluted out of the sample, qualification of the data was not necessary.

SVOC SIM samples MW-5-2SA04, MW-10B-2SA04 and MW-09-2SA04 had elevated 2,4,6-tribromophenol surrogate recovery. The other five surrogates were within acceptance limits, so qualification of the data was not necessary. Sample MW-11B-2SA04 had elevated 2,4,6-tribromophenol and 2-fluorobiphenyl surrogate recoveries. Since only one acid and one base surrogate were outside limits and the other four surrogates were within acceptance limits, qualification of the data was not necessary.

#### **Internal Standards**

According to the LRC, VOC and SVOC low-level internal standard areas were within SW-846 method acceptance criteria.

SVOC SIM samples MW-10B-2SA04 and MW-11AD-2SA04 had all internal standards below acceptance limits. Sample MW-04-2SA04 had all internal standards below acceptance limits except 1,4-dichlorobenzene-d4. Sample MW-5-2SA04 had four internal standard areas below limits (acenaphthene-d10, phenanthrene-d10, chrysene-d12 and perylene-d12). Associated compounds (benzo(a)pyrene, bis(2-chloroethoxy)methane, 2,4-dinitrotoluene, 2,6-dinitrotoluene, pentachlorophenol and 1,2-diphenylhydrazine) were reported as not-detected and were qualified as non-detect estimated (UJ) in the four samples listed, due to low internal standard recovery.

# Laboratory Control Samples

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SVOC low-level, SVOC SIM and VOC laboratory control sample (LCS) recoveries met the laboratory-defined acceptable ranges.

### Matrix Spike/Matrix Spike Duplicates

VOC MS/MSD recoveries analyzed from sample MW-01A-2SA04 were within laboratory-supplied acceptance criteria. A second VOC MS/MSD was analyzed and had low recovery for chlorobenzene and toluene. The sample used was not associated with this project site, so qualification of the data was not necessary.

SVOC SIM MS/MSD was analyzed from sample MW-01A-2SA04. The SVOC SIM MS/MSD had elevated recovery for 2,4-dinitrotoluene and pentachlorophenol. All associated samples were reported as not-detected for these two compounds, no qualification of the data was not necessary. This MS/MSD also had elevated relative percent difference (RPD) for 1,2-diphenylhydrazine. The MS/MSD results were less than five times the method quantitation limit (MQL), and the difference between sample and duplicate was greater than the MQL. All associated samples were reported as not-detected for 1,2-diphenylhydrazine and were qualified as non-detect estimated (UJ), due to elevated MD/MSD RPD.

SVOC low-level MS/MSD was analyzed from sample MW-01A-2SA04. The SVOC low level MS/MSD had elevated and low recovery for acenaphthene, dibenzofuran, 2methylnaphthalene and fluorene. These compounds were not qualified because the spike amount was less than four times that in the unspiked parent sample and may not represent the true matrix effect. Additionally, 4-nitrophenol, n-nitrosodiphenylamine, 2methyl-4,6-dinitrophenol and phenanthrene had elevated MS/MSD recovery. All associated samples were reported as not-detected for 4-nitrophenol, nnitrosodiphenylamine and 2-methyl-4,6-dinitrophenol, so qualification of the data was not necessary. Samples P-10-2SA04, MW-11B-2SA04, MW-04-2SA04, MW10B-2SA04, MW-01A-2SA04, MW-11A-2SA04 and MW-11AD-2SA04 were reported as detected for phenanthrene and were qualified as estimated high (JH), due to elevated MS/MSD recovery. This SVOC low level MS/MSD also had elevated RPD for phenanthrene. The MS/MSD results were greater than five times the MQL and detections of phenanthrene were qualified as estimated (J), due to elevated MS/MSD RPD.

### **Field Precision**

One field duplicate sample was collected during this sampling event (MW-11A-2SA04 / MW-11AD-2SA04). The sample and duplicate were reported as detected or estimated detected (J flagged) for 10 common compounds. MW-11AD-2SA04 was also reported as detected for 2-methylnaphthalene and bis(2-ethylhexyl)phthalate. Seven compounds (anthracene, acenaphthene, acenaphthylene, dibenzofuran, fluoranthene, fluorene and pyrene) had RPD less than 20% and were within acceptance criteria. Di-n-butyl phthalate and phenanthrene had analyte concentrations less than five times the method quantitation limit (MQL) and the difference between sample and duplicate was less than two times the MQL, so qualification was not needed. Naphthalene had analyte concentrations greater than five times the MQL and RPD greater than 30%. Detections of naphthalene in associated samples were qualified as estimated (J) and non-detects were qualified as non-detect estimated (UJ). Sample/duplicate precision calculations are included in Table 3.

### Field Procedures

The samples were collected using documented sampling procedures.

## SUMMARY

Ground water analytical data are useable for the purpose of delineation of VOCs and SVOCs in the area of the former Houston Wood Preserving Works site. The data user is advised that samples FB-091404, MW-09-2SA04 and TB01-2SA04 were qualified as not-detected (U) for methylene chloride due to method blank contamination. Samples MW-08-2SA04, P-10-2SA04, MW-07-2SA04, MW-11B-2SA04, MW-04-2SA04, MW-10B-2SA04, P-12-2SA04, FB-091404, MW-11A-2SA04, MW-11AD-2SA04 and MW-09-2SA04 were qualified as not-detected (U) for di-n-butyl phthalate, due to method blank contamination.

SVOC SIM samples MW-10B-2SA04 and MW-11AD-2SA04, MW-04-2SA04 and MW-5-2SA04 were qualified as non-detect estimated (UJ) for six compounds (benzo(a)pyrene, bis(2-chloroethoxy)methane, 2,4-dinitrotoluene, 2,5-dinitrotoluene, pentachlorophenol and 1,2-diphenylhydrazine), due to low internal standard recovery.

All SVOC SIM samples were qualified as non-detect estimated (UJ) for 1,2diphenylhydrazine, due to elevated MD/MSD RPD.

SVOC low-level samples P-10-2SA04, MW-11B-2SA04, MW-04-2SA04, MW10B-2SA04, MW-01A-2SA04, MW-11A-2SA04 and MW-11AD-2SA04 were reported as detected for phenanthrene and were qualified as estimated high (JH), due to elevated MS/MSD recovery.

Detections of naphthalene in all samples were qualified as estimated (J) and non-detects were qualified as non-detect estimated (UJ), due to sample/duplicate precision outside QC criteria.

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# Cross-Reference Field Sample Identifications and Laboratory Identifications Laboratory Package 281075

Houston Wood Preserving Works Union Pacific Railroad

Field Identification	Laboratory Identification	•
MW-08-2SA04	281075-1	
P-10-2SA04	281075-2	
MW-07-2SA04	281075-3	
MW-5-2SA04	281075-4	
MW-11B-2SA04	281075-5	
MW-04-2SA04	281075-6	· .
MW-10B-2SA04	281075-7	
P-12-2SA04	281075-8	
FB-091404	281075-9	Field Blank
MW-01A-2SA04	281075-10	
MW-01AMS-2SA04	281075-11	Matrix Spike
MW-01AMSD-2SA04	281075-12	Matrix Spike Duplicate
MW-11A-2SA04	281075-13	
MW-11AD-2SA04	281075-14	Field Duplicate
TB01-2SA04	281075-15	Trip Blank
MW-09-2SA04	281075-16	

## Qualified Analytical Data Laboratory Package 281075

#### Houston Wood Preserving Works Union Pacific Railroad

	Field Identification	Analyte		Qualification	Reason for Qualification	· · · ·	
	FB-091404	Methvlene Chloride		u .	Method blank contamination		· . ·
	TB01-2SA04	Methylene Chloride		Ū · · ·	Method blank contamination		i e sta
	MW-09-2SA04	Methylene Chloride	÷.,	Ŭ	Method blank contamination	i i	
	MM 09 28404	Di a hund abihalata			Mathead black as stars is slice		
	NIV-00-23A04	Di-n-outyr phthalate		U .	Method blank contamination		
	- F-10-20A04	Di-n-outyr phinaiate		U . ·	Method blank contamination		
•	WWW-07-25A04	Di-n-butyr phinalate		U .	Method blank contamination		
	NIN 04 20404	Di-n-butyl phinalate		U	Method blank contamination		
	IVIVV-04-23A04	Di-n-bulyi phinalate	·	U	Method blank contamination		
	MW-10B-25A04	Di-n-butyl phthalate		U	Method blank contamination	1	
	F-12-23A04	Di-n-butyi phinalate		U .	Method blank contamination	1	
	FD-091404	Di-n-butyi phinalate		0	Method blank contamination		
	WW-11A-25AU4	Di-n-butyl phthalate		U ·	Method blank contamination		
	NIVV-11AD-25A04	Di-n-butyl phthalate		U	Method blank contamination		
	MW-09-25A04	Di-n-butyi phthalate		U	Method blank contamination		
	FB-091404	Methylene Chloride		U	Trip blank contamination		
	MW-09-2SA04	Methylene Chloride		U	Trip blank contamination		
	•						
	MW-09-2SA04	Methylene Chloride		U	Field blank contamination		
•	MW-118-25404	Di-n-butyl obthalate	1		Field blank contamination	. <b>'</b>	
	MM/_04_25A04	Di-n-butyl obtholato		1	Field blank contamination		
	MM-10B-2SA04	Di-n-butyl phthalate			Field blank contamination	•	
	P-12-25A04	Di-n-butyl philalate		0	Field blank contamination		
	M\/\_11A_2SA04	Di-n-butyl philalate		о. П	Field blank contamination		
	MW-114D-25404	Di-n-butyl obtbalate		U I	Field blank contamination		
	MW-09-2SA04	Di-n-butyl phthalate		Ŭ .	Field blank contamination		
	MW-5-2SA04	benzo(a)pyrene		UJ	Internal standard areas below	v acceptance limits	
	MW-04-2SA04	benzo(a)pyrene		UJ	Internal standard areas below	v acceptance limits	
	MW-10B-2SA04	benzo(a)pyrene		UJ	Internal standard areas below	v acceptance limits	
	MW-11AD-2SA04	benzo(a)pyrene		UJ	Internal standard areas below	v acceptance limits	•
	MW-5-2SA04	bis(2-chloroethoxy)methane		UJ ·	Internal standard areas below	v acceptance limits	
	MW-04-2SA04	bis(2-chloroethoxy)methane		ŬĴ	Internal standard areas below	v acceptance limits	
	MW-10B-2SA04	bis(2-chloroethoxy)methane		ŬĴ È	Internal standard areas below	v acceptance limits	
	MW-11AD-2SA04	bis(2-chloroethoxy)methane		UJ	Internal standard areas below	v acceptance limits	
	MAN E DE ADA	2.4. disitratelyana		111	Internet alegadered arrest holes		
	NIN 04 28 A04	2,4-dinitrotoluene		UJ	Internal standard areas below	v acceptance limits	
	MIN-04-23A04	2,4-dinitrotoluene		UJ ···	Internal standard areas below	v acceptance limits	
	MW-100-23A04	2,4-dinitrotoluene	•		Internal standard areas below	v acceptance limits	
	WWW-11AD-20A04	2,4-011100000010		00	Internal standard areas below	v acceptance innits	
	MW-5-2SA04	2,6-dinitrotoluene		UJ	Internal standard areas below	v acceptance limits	
	MW-04-2SA04	2,6-dinitrotoluene		UJ	Internal standard areas below	v acceptance limits	
	MW-10B-2SA04	2,6-dinitrotoluene	•	UJ .	Internal standard areas below	v acceptance limits	
	MW-11AD-2SA04	2,6-dinitrotoluene		U)	Internal standard areas below	v acceptance limits	
	MW-5-2SA04	pentachlorophenol			Internal standard areas below	v acceptance limits	
	MW-04-2SA04	pentachlorophenol		UJ S	Internal standard areas below	v acceptance limits	
	MW-10B-2SA04	pentachlorophenol		UJ ·	Internal standard areas below	v acceptance limits	
	MW-11AD-2SA04	pentachlorophenol		ŬĴ	internal standard areas below	v acceptance limits	
			۰.		takanal stand	•	
	MW-5-25A04	1,2-dipnenyinydrazine		UJ	Internal standard areas below	v acceptance limits	
	MW-04-25A04	1,2-dipnenyihydrazine		UJ	Internal standard areas below	v acceptance limits	
	MW-108-25A04	1,2-diphenylhydrazine		UJ ···	internal standard areas below	v acceptance limits	
,	MW-11AD-2SA04	1,2-alphenylhydrazine		UJ	internal standard areas below	v acceptance limits	
	MW-08-2SA04	1,2-diphenylhydrazine		UJ	Elevated MS/MSD RPD		
	P-10-2SA04	1,2-diphenylhydrazine		UJ	Elevated MS/MSD RPD		
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#### Qualified Analytical Data Laboratory Package 281075

#### Houston Wood Preserving Works Union Pacific Railroad

Field Identification	Analyte	Qualification	Reason for Qualification
MW-07-25A04	1.2-dinhenvlhvdrazine	111	Flevated MS/MSD BPD
MW-5-2SA04	1.2-diphenylhydrazine	ELI	Elevated MS/MSD RPD
MW-11B-2SA04	1 2-dinhenvihvdrazine	111 °	Elevated MS/MSD RPD
MW-04-25404	1.2-diphonylhydrazine		
MW-108-25404	1.2-diphenylhydrazine	- UU - '	
P-12-25404	1.2-diphenylhydrazine	111	
FB_091404	1.2-diphonylhydrazine	. HI	
MW-016-25604	1.2-diphenylhydrazine	· 03	Elevated MS/MSD RPD
MW-114-25404	1.2-diphenylhydrazine		
MW-11AD-25A04	1.2-diphenylhydrazine	11	
MW-09-2SA04	1,2-diphenylhydrazine	UJ	Elevated MS/MSD RPD
<b>B</b> (0.0010)			
P-10-2SA04	phenanthrene	JH .	Elevated MS/MSD recovery
MW-11B-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-04-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-10B-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-01A-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
MW-11A-2SA04	phenanthrene	JH a a	Elevated MS/MSD recovery
MW-11AD-2SA04	phenanthrene	JH	Elevated MS/MSD recovery
P-10-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-11B-2SA04	phenanthrene	Ĵ	Elevated MS/MSD RPD
MW-04-2SA04	phenanthrene	Ĵ.	Elevated MS/MSD RPD
MW-10B-2SA04	phenanthrene	J	Elevated MS/MSD RPD
MW-01A-2SA04	phenanthrene	Ĵ	Elevated MS/MSD RPD
MW-11A-2SA04	phenanthrene	Ĵ :	Elevated MS/MSD RPD
MW-11AD-2SA04	phenanthrene	Ĵ	Elevated MS/MSD RPD
MW-08-25A04	nanhthalene	ti.i	Sample/duplicate precision outside criteria
P-10-2SA04	naphthalene		Sample/duplicate precision outside criteria
MW-07-2SA04	naphthalene	ці -	Sample/duplicate precision outside criteria
MW-5-2SA04	naphthalene	.1	Sample/duplicate precision outside criteria
MW-118-2SA04	naphthalene		Sample/duplicate precision outside criteria
MW-04-25404	naphthalene	ů ·	Sample/duplicate precision outside criteria
MW-10B-2SA04	nanhthalene	1	Sample/duplicate precision outside criteria
P-12-25A04	naphthalene	- UI	Sample/duplicate precision outside criteria
FR-091404	nanhthalana	111	Sample/duplicate precision outside criteria
MW/_016_25604	naprimaterite	1	Sample/duplicate precision outside criteria
MW-110-25004	nanhthalana	l l	Sample/duplicate precision outside criteria
MM/.110D.29004	napithalene	J	Sample/duplicate precision outside criteria
MW-09-2SA04	naphthalene	กา 🗸	Sample/duplicate precision outside criteria
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#### NOTES:

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U = not-detected

J = estimated data, the reported sample concentration is approximated due to exceedance of QC requirements UJ = the analyte was analyzed for but was not detected above the reported sample quantitation limit. the associated value is an estimate and may be inaccurate or imprecise. H = high bias

# Field Precision Laboratory Package 281075

Houston Wood Preserving Works Union Pacific Railroad

Field Identification	Analyte	Sample Result	Duplicate Result	RPD	Qualified	
					an an an an an an an an an an an an an a	
MW-11A-2SA04 / MW-11AD-2SA04	acenaphthene	0.0987	0.0881	11.35	Α	
	acenaphthylene	0.000797	0.000657	19.26	A	
	anthracene	0.00315	0.00354	-11.66	A	
	dibenzofuran	0.00919	0.00872	5.25	А	
	Di-n-butyl phthalate	0.000279	0.000386	-32.18	A*	
	fluoranthene	0.0099	0.0121	-20.00	Α	
	fluorene	0.0455	0.0474	-4.09	Α	
	naphthalene	0.000236	0.00255	-166.12	J	
	phenanthrene	0.000594	0.000895	-40.43	A*	
	pyrene	0.00483	0.00552	-13.33	A	

# NOTES:

results reported as mg/L

RPD = ((SR-DR)\*200)/(SR+DR)J = estimated data due to inability to meet QC criteria

A = Acceptable data

A\* = Acceptable data based on Table D-2 of TRRP-13 Guidance Document

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# **Updated Compliance Schedule** Appendix D

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January 20, 2005 Project No. 0014419

Environmental Resources Management 15810 Park Ten Place, Suite 300 Houston, Texas 77084 (281) 600-1000

<b></b>		· · · · · · · · · · · · · · · · · · ·			<u> </u>	2004	<u>,</u>	2005	· · · · · · · · · · · · · · · · · · ·	2006
ID	ID Task Name/Permit or CP Section No.		Start	Finish	ND	JFMAM	JJASON	DJFMAN	M J J A S C	NDJFM
1	1 Addendum to RFI Report {Permit VIII.I}		Wed 12/3/03	Thu 2/17/05		_				
2	Field Investigation Activities	11	Wed 12/3/03	Wed 1/21/04					·	
3	Prepare and Submit Affected Property Assessmen	t Report (APAR)	Thu 1/22/04	Fri 6/11/04		· 41	]			
4	TCEQ Review Process	•	Mon 6/14/04	Wed 10/6/04						
5	Response to TCEQ Comments on APAR	•	Mon 10/11/04	Fri 11/19/04						
6	TCEQ Review Process		Mon 11/22/04	Thu 2/17/05				·		
7	7 Corrective Measures Study {Permit VIII.I and CP IX}		Thu 2/17/05	Thu 2/17/05						
8	8 Not Required under the Texas Risk Reduction Program (TRRP) for RCRA sites		Thu 2/17/05	Thu 2/17/05						
9	9 Corrective Measures Implementation {Permit VIII.J and CP X}		Thu 2/17/05	Mon 3/20/06						
10	Prepare and Submit Response Action Plan (RAP)		Thu 2/17/05	Fri 6/17/05				1.		
11	11 TCEQ Review Process		Mon 6/20/05	Mon 9/19/05						
12	Implement Corrective Action		Tue 9/20/05	Mon 12/19/05					- x	مى ا
13	Prepare and Submit Corrective Measures Report (	RAER/RACR/PRACR)	Mon 12/19/05	Mon 3/20/06						· · · ]
14	Compliance Activities {Permit IV,C and CP VI}		Mon 1/3/05	Fri 12/30/05						
15	15 Impoundment Inspections (Weekly)		Mon 1/3/05	Fri 12/30/05				<u>1</u>		
16	Water Level Measurements (Semiannually)		Mon 1/3/05	Fri 12/30/05					· ·	
17	Monitor Well Inspections (Quarterly)		Mon 1/3/05	Fri 12/30/05				e tra		14
18	18 Ground Water Sampling (First Semiannual)		Mon 3/14/05	Fri 3/18/05						
19	19 Ground Water Sampling (Second Semiannual)		Mon 9/12/05	Fri 9/16/05					1	
20	Post-Closure Care Reporting		Mon 10/18/04	Tue 6/21/05						
21	Semiannual Report - January 21, 2005 (CP VII.E	3.2}	Mon 10/18/04	Fri 1/21/05			<b>W</b>		•	
22	Perform Data Evaluation		Mon 10/18/04	Wed 1/19/05						
23	Submit Report to TCEQ	Annual and a second second second second second second second second second second second second second second	Fri 1/21/05	Fri 1/21/05						
24	Semiannual Report - July 21, 2005 (CP VII.B.2)	499 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Mon 3/28/05	Tue 6/21/05						
25	25 Perform Data Evaluation		Mon 3/28/05	Fri 4/1/05				ĺ	-	
26	26 Submit Report to TCEQ		Tue 6/21/05	Tue 6/21/05					[	
27	27 2004 Annual Report - January 25, 2005 {Permit V.F and III.B.1}		Wed 12/1/04	Tue 1/25/05					•	
28	28 Perform Data Evaluation		Wed 12/1/04	Mon 1/24/05						
29	29 Submit Report to TCEQ		Tue 1/25/05	Tue 1/25/05						
		Task	· ]	Rolled Up Task	<u>.                                    </u>	· +_	Exter	nal Tasks		
Compliance Schedule Progress Milestone Summary			Rolled Lin Miles	stone	$\bigtriangleup$	Projec	ct Summary			
		Milestone		Rolled Lin Prog	iress	~	Fytor	nal Milestone	Å.	×
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				Split			Dead		♥	
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