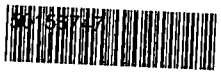
U046





Union Pacific Railroad Company

# Semiannual Monitoring Report: First Semiannual Event 2002

*Houston Wood Preserving Works*
*Houston, Texas*



July 19, 2002

W.O. #422-102



**Environmental Resources Management**
16300 Katy Freeway, Suite 300
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(281) 600-1000

ERM®

Union Pacific Railroad Company

# Semiannual Monitoring Report: First Semiannual Event 2002

*Houston Wood Preserving Works*
*Houston, Texas*

July 19, 2002

W.O. #422-102


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TABLE OF CONTENTS

*List of Tables*



*List of Figures*

## 1.0 INTRODUCTION

### 1.1 BACKGROUND

On March 11-19, 2002, Environmental Resources Management (ERM) conducted ground water sampling activities at Union Pacific Railroad's Houston Wood Preserving Works (HWPW) site, located at 4910 Liberty Road, Houston, Texas (Figure 1-1). This semiannual sampling event included the on-site wells and piezometers associated with a closed surface impoundment (TNRCC Permit Unit No. II.B.1) as described in RCRA Permit No. HW-50343-000 and associated Compliance Plan (CP-50343), both issued by the Texas Natural Resource Conservation Commission (TNRCC). The sampling event, analytical data, and this data evaluation report represent the first semiannual monitoring period for 2002 (i.e., January 1 through June 30) and fulfill the semiannual reporting requirements described in Compliance Plan (CP) Section VII.B.2.

### 1.2 REPORT CONTENT AND ORGANIZATION

Section VII.B.2 of the CP requires that a specific list of items be included in each Semiannual Report. As such, each item listed below is addressed by number in Section 2 of this report. As of June 30, 2002, a recovery system had not been installed at this facility. Therefore, in the few instances where a provision refers to a recovery system (i.e., items 5, 7, and 11), a notation was made in the text, and the items, as they relate to recovery wells, were not addressed in this report. The following items are required for the Semiannual Report, pursuant to CP Section VII.B.2:

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 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 Ground Water Protection Standards;
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.

## 2.0 FIRST SEMIANNUAL GROUND WATER SAMPLING EVENT

This section contains a discussion of each of the Semiannual Report items required by CP Section VII.B.2.

## 2.1 NARRATIVE SUMMARY OF FIRST 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.

### 2.1.1 *Corrective Action Program*

Existing wells were sampled to assess the extent of 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 UTZ and STZ, respectively, as defined in CP Provision I.A.

- 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.
- B-TZ refers to the second sand unit encountered at approximately 15 feet above msl, averaging 8 to 10 feet in thickness.

Existing monitoring wells in the A-TZ, designated by function in CP Table III (Appendix A), include the Corrective Action Observation (CAO) wells MW-04, MW-05, MW-07, MW-08, and MW-09, and the Point of Compliance (POC) wells MW-01A, MW-02, MW-03, MW-10A, and MW-11A. Existing monitoring wells in the B-TZ include the POC wells MW-10B and MW-11B, and the POC piezometers P-10, P-11, and P-12.

### 2.1.2 *Ground Water Monitoring*

ERM personnel performed monitoring activities at the site on March 11-19, 2002. The 15 A-TZ and B-TZ wells and piezometers listed in Section 2.1.1 (above) were located and inspected in preparation for the sampling event. Ground water sampling was performed using procedures outlined in a U.S. EPA document titled *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (EPA/540/S-95/504) published in April 1996. Purging and sampling were performed using a low-flow pump, with its

sample intake set at the approximate center of the screened interval of each well.

Polytetrafluoroethylene (PTFE) tubing was placed in the wells and used for sampling. A Master-Flex® peristaltic pump was placed next to each well during sampling. Using a one-foot section of disposable silicon tubing placed around the pump head and attached to the PTFE tubing, ground water was pumped from the screened interval of the well at a flow rate of approximately 0.5 L/min. A flow through cell and field meters were used to evaluate field parameters, including temperature, pH, specific conductivity, dissolved oxygen, and turbidity. When the field parameters had stabilized, the well was sampled. The samples were collected at a flow rate of approximately 0.5 L/min. A compilation of recorded field parameters is included in Appendix B.

For each well, two 40-mL glass vials (for volatile organic compound analysis), and one 1000-mL amber glass bottles (for semivolatile organic compounds analysis) were filled directly from the pumping apparatus described above. The bottles, which had been preserved previously by the laboratory, were sealed and packed in coolers with sufficient ice to maintain a sample temperature of approximately 4° C. The 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 performed on the A-TZ and B-TZ ground water samples collected during the first semiannual sampling event of 2002 are summarized in Tables 2-1 and 2-2, respectively. Those compounds reported by the laboratory at concentrations greater than 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.

## 2.3 *WATER LEVEL AND TOTAL DEPTH MEASUREMENT*

Because low-flow sampling procedures were utilized for this sampling event, it was important to reduce disruption of the water column to the extent practical prior to sampling. To accomplish this, light non-aqueous phase liquid (LNAPL) measurements were made first with an MMC® Model D-240 oil/water interface probe. Measurable LNAPL was not noted with the probe at any of the wells measured. Next, water levels were measured using the oil/water interface probe. Since the meter came

into contact with only the upper surface of the water column, disruption of the water column was reduced.

Dense non-aqueous phase liquid (DNAPL) and total depth measurements were collected with the oil/water interface probe following ground water sampling. These measurements were collected in accordance with the methodology described in EPA's low-flow guidance (U.S. EPA, April 1996) which suggests that a probe be lowered gently through the water column to the bottom of the well following sample collection. Measurable DNAPL was not noted at any of the wells measured. Table 2-3 summarizes the results of the depth-to-water and total well depth measurements.

## 2.4 *POTENTIOMETRIC SURFACE MAPS*

The ground water elevation data described in Section 2.3 were used to create potentiometric surface maps of the A-TZ and B-TZ (Figures 2-1 and 2-2, respectively).

## 2.5 *POTENTIOMETRIC SURFACE MAPS FOR RECOVERY SYSTEM*

As of June 30, 2002, a recovery system had not been installed at the closed surface impoundment. Therefore, this item is not addressed herein.

## 2.6 *NON-AQUEOUS PHASE LIQUIDS*

The wells and piezometers were gauged for the presence of light NAPLs before low-flow sampling and dense NAPLs after low-flow sampling was completed, in order to reduce disruption of the water column prior to sampling. The low-flow sampling method resulted in little or no drawdown. Accordingly, dense NAPL layers, if present, would not have been significantly affected by prior ground water sample collection. An MMC® Model D-240 oil/water interface probe was used to measure for light and dense NAPLs. NAPLs were not detected in any of the wells sampled as part of this semiannual event.

## 2.7 *NAPL RECOVERIES*

As of June 30, 2002, a recovery system had not been installed at the closed surface impoundment. Therefore, this item is not addressed herein.

## 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 2-4 shows the results of a direct comparison of data from the first semiannual sampling event to 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 PQL (i.e., the GWPS). Conversely, wells and piezometers were considered non-compliant if one or more constituents were reported at concentrations greater than the PQL.

## 2.9 *BTEX, ACENAPHTHENE, AND NAPHTHALENE ISOPLETHS*

As specified by the Compliance Plan, isopleth maps depicting concentrations of BTEX, acenaphthene, and naphthalene were constructed. The concentration contours of these constituents were prepared using the data presented in Tables 2-1 and 2-2. The contours were generated manually. To facilitate generation of the contours, locations with reported non-detects were assigned a value equal to one-half of the reported detection limit.

The A-TZ and B-TZ BTEX concentrations measured during the first semi-annual sampling event of 2002 are presented in Figures 2-3 and 2-4, respectively. Similarly, acenaphthene and naphthalene isopleths are presented in Figures 2-5 through 2-8.

## 2.10 *UPDATED COMPLIANCE SCHEDULE*

An updated compliance schedule is included as Appendix D of this report. This schedule is consistent with the schedule submitted as part of the Second Semiannual Monitoring Report, 2001 (ERM, January 21, 2002).

## 2.11 *SUMMARY OF CHANGES MADE TO THE MONITORING/CORRECTIVE ACTION PROGRAM AND SUMMARY OF RECOVERY WELL INSPECTIONS AND MAINTENANCE*

Neither recovery wells nor a ground water recovery system are present on site. Accordingly, recovery well inspections, repairs, or operations were not conducted. However, the POC and CAO wells were inspected twice during the semiannual monitoring period. A summary of the well inspections will be included in the 2002 Annual Report.

## 2.12 *RECOMMENDATIONS FOR CHANGES*

At this time, no changes are recommended.

## 2.13 *OTHER REQUESTED ITEMS*

To date, no other items have been requested by the Executive Director.

# Tables

*July 19, 2002*
*W.O. #422-102*

**Environmental Resources Management**
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TABLE 2-1

Summary of Analytical Results for the A-Transmissive Zone (A-TZ)
First Semiannual Sampling Event, 2002

Houston Wood Preserving Works
Houston, Texas

| Analyte | PQL (GWPS)[1] | Monitor Well ID: / Sample Date: | MW-01A 03/19/02 | MW-02 03/13/02 | MW-02D 03/13/02 | MW-03 03/13/02 | MW-04 03/11/02 | MW-05 03/14/02 | MW-07 03/11/02 | MW-08 03/12/02 | MW-09 03/14/02 | MW-10A 03/12/02 | MW-11A 03/11/02 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.005 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.0002J |
| Chlorobenzene | 0.005 | | 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 |
| Methylene chloride | 0.010 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Ethylbenzene | 0.005 | | 0.0001J | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.0002J |
| Toluene | 0.005 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.0001J |
| Xylene (total) | 0.005 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.0006J |
| Acenaphthene | 0.010 | | 0.120 | 0.015 | 0.017 | 0.160 | ND | 0.0007J | 0.0005J | 0.003 | ND | 0.001J | 0.400 |
| Acenaphthylene | 0.010 | | 0.003 | 0.0004J | 0.0004J | 0.002 | ND | ND | ND | ND | ND | ND | 0.005 |
| Anthracene | 0.010 | | 0.004 | 0.001J | 0.002J | 0.003 | 0.0009J | 0.0005J | 0.0008J | 0.0005J | 0.0005J | 0.0005J | 0.013 |
| Benzo(a)anthracene | 0.010 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Benzo(a)pyrene | 0.010 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| bis(2-Chloroethoxy)methane | 0.010 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| 2-Chloronaphthalene | 0.010 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Chrysene | 0.010 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Dibenzofuran | 0.010 | | 0.065 | 0.012 | 0.014 | 0.042 | ND | ND | ND | ND | ND | ND | 0.190 |
| Di-n-butylphthalate | 0.010 | | 0.0003J | ND | ND | ND | 0.0003J | 0.0004J | 0.0009J | 0.0003J | 0.0006J | 0.0002J | 0.0003J |
| 2,4-Dimethylphenol | 0.010 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.004 |
| 4,6-Dinitro-o-cresol | 0.050 | | ND | 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 | ND |
| 2,6-Dinitrotoluene | 0.010 | | ND | 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 | ND |
| bis(2-Ethylhexyl)phthalate | 0.010 | | 0.0006J | ND | 0.0007J | 0.0008J | 0.0006J | 0.0005J | 0.0001J | 0.0003J | 0.0006J | 0.0004J | 0.0004J |
| Fluoranthene | 0.010 | | 0.006 | 0.001J | 0.002J | 0.012 | ND | ND | 0.0001J | ND | ND | ND | 0.015 |
| Fluorene | 0.010 | | 0.070 | 0.013 | 0.015 | 0.080 | ND | ND | ND | ND | ND | 0.0001J | 0.230 |
| 2-Methylnaphthalene | 0.010 | | 0.033 | 0.0006J | 0.0007J | ND | ND | ND | ND | ND | 0.00004J | ND | 0.027 |
| Naphthalene | 0.010 | | 0.110 | 0.006 | 0.006 | ND | ND | ND | ND | ND | 0.0001J | ND | 0.680 |
| Nitrobenzene | 0.010 | | 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 |
| N-Nitrosodiphenylamine | 0.010 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Pentachlorophenol | 0.050 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.0002J | 0.0004J |
| Phenanthrene | 0.010 | | 0.028 | 0.001J | 0.002 | 0.0005J | 0.0001J | ND | ND | ND | ND | ND | 0.110 |
| Phenol | 0.010 | | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Pyrene | 0.010 | | 0.003 | 0.0007J | 0.0008J | 0.006 | ND | 0.0001J | 0.0001J | 0.00009J | ND | ND | 0.007 |

NOTES:

All values reported in mg/L. ND - Not detected at the Method Detection Limit (MD), which is less than or equal to the Practical Quantitation Limit (PQL) in all instances.

[1]PQL - *Practical Quantitation Limit* as defined on Table I of the Compliance Plan, and determined by the analytical methods of EPA. SW-846. The PQL is the Ground Water Protection Standard.

[2] [ ] indicates value reported above the Ground Water Protection Standard (GWPS).

J=Value was detected, but below limit of quantitation.

TABLE 2-2

Summary of Analytical Results for the B-Transmissive Zone (B-TZ)
First Semiannual Sampling Event, 2002

Houston Wood Preserving Works
Houston, Texas

| Analyte | PQL (GWPS)[1] | Monitor Well ID: / Sample Date: | MW-10B 3/13/2002 | MW-11B 3/14/2002 | P-10 3/13/2002 | P-10D 3/13/2002 | P-11 3/14/2002 | P-12 3/14/2002 |
|---|---|---|---|---|---|---|---|---|
| Benzene | 0.005 | | ND | ND | ND | ND | ND | ND |
| Chlorobenzene | 0.005 | | ND | ND | ND | ND | ND | ND |
| 1,2-Dichloroethane | 0.005 | | ND | ND | ND | ND | ND | ND |
| Methylene chloride | 0.010 | | ND | 0.0002J | ND | ND | 0.0001J | ND |
| Ethylbenzene | 0.005 | | ND | 0.0001J | 0.009 | 0.012 | ND | ND |
| Toluene | 0.005 | | ND | ND | ND | ND | ND | ND |
| Xylene (total) | 0.005 | | ND | ND | 0.005J | 0.006J | ND | ND |
| Acenaphthene | 0.010 | | 0.073 | 0.150 | 0.360 | 0.310 | 0.044 | ND |
| Acenaphthylene | 0.010 | | 0.001J | 0.004 | 0.002 | 0.001 | 0.0003J | ND |
| Anthracene | 0.010 | | 0.004 | 0.007 | 0.012 | 0.013 | 0.001J | 0.0001J |
| Benzo(a)anthracene | 0.010 | | ND | ND | ND | ND | ND | ND |
| Benzo(a)pyrene | 0.010 | | ND | ND | ND | ND | ND | ND |
| bis(2-Chloroethoxy)methane | 0.010 | | ND | ND | ND | ND | ND | ND |
| 2-Chloronaphthalene | 0.010 | | ND | ND | ND | ND | ND | ND |
| Chrysene | 0.010 | | ND | ND | ND | ND | ND | ND |
| Dibenzofuran | 0.010 | | 0.032 | 0.078 | 0.140 | 0.120 | 0.0009J | ND |
| Di-n-butylphthalate | 0.010 | | ND | 0.0005J | ND | ND | 0.0003J | 0.0004J |
| 2,4-Dimethylphenol | 0.010 | | 0.0007J | 0.0007J | ND | ND | ND | ND |
| 4,6-Dinitro-o-cresol | 0.050 | | ND | ND | ND | ND | ND | ND |
| 2,4-Dinitrotoluene | 0.010 | | ND | ND | ND | ND | ND | ND |
| 2,6-Dinitrotoluene | 0.010 | | ND | ND | ND | ND | ND | ND |
| 1,2-Diphenylhydrazine | 0.010 | | ND | ND | ND | ND | ND | ND |
| bis(2-Ethylhexyl)phthalate | 0.010 | | 0.0006J | 0.0003J | 0.001J | ND | 0.0002J | 0.0005J |
| Fluoranthene | 0.010 | | 0.003 | 0.007 | 0.008 | 0.010 | 0.005 | ND |
| Fluorene | 0.010 | | 0.044 | 0.087 | 0.170 | 0.180 | 0.018 | ND |
| 2-Methylnaphthalene | 0.010 | | 0.001J | 0.026 | 0.099 | 0.090 | ND | ND |
| Naphthalene | 0.010 | | 0.075 | 0.220 | 2.300 | 2.200 | 0.0002J | ND |
| Nitrobenzene | 0.010 | | ND | ND | ND | ND | ND | ND |
| p-Nitrophenol | 0.050 | | ND | ND | ND | ND | ND | ND |
| N-Nitrosodiphenylamine | 0.010 | | ND | ND | ND | ND | ND | ND |
| Pentachlorophenol | 0.050 | | ND | ND | ND | ND | ND | ND |
| Phenanthrene | 0.010 | | 0.023 | 0.034 | 0.096 | 0.120 | 0.00009J | 0.00008J |
| Phenol | 0.010 | | ND | ND | ND | ND | ND | ND |
| Pyrene | 0.010 | | 0.002J | 0.003 | 0.003 | 0.004 | 0.003 | ND |

NOTES:

All values reported in mg/L. ND - Not detected at the Method Detection Limit (MD), which is less than or equal to the Practical Quantitation Limit (PQL) in all instances.
[1]PQL - *Practical Quantitation Limit* as defined on Table I of the Compliance Plan, and determined by the analytical methods of EPA SW-846. The PQL is the Ground Water Protection Standard.
[2] [ ] indicates value reported above the Ground Water Protection Standard (GWPS).
J=Value was detected, but below limit of quantitation.

TABLE 2-3

Water Level and Total Depth of Well Measurements
First Semiannual Sampling Event, March 11-19, 2002

Houston Wood Preserving Works
Houston, Texas

*A-TZ Monitoring Locations*

| Well ID | Top of Casing Elevation (msl) | Depth to Water (ft TOC) | Water Surface Elevation (msl) | Total Depth of Well as Measured (ft TOC) | Total Depth as Logged (ft TOC) * |
|---|---|---|---|---|---|
| MW-01A | 47.95' | 3.31' | 44.64' | 19.74' | 20.20' |
| MW-02 | 48.03' | 3.33' | 44.70' | 18.46' | 20.30' |
| MW-03 | 48.55' | 3.51' | 45.04' | 20.63' | 20.90' |
| MW-04 | 49.85' | 5.41' | 44.44' | 21.70' | 23.40' |
| MW-05 | 49.35' | 4.92' | 44.43' | 27.38' | 28.30' |
| MW-07 | 48.86' | 4.56' | 44.30' | 24.88' | N/A |
| MW-08 | 49.37' | 4.75' | 44.62' | 25.12' | 26.80' |
| MW-09 | 49.29' | 4.61' | 44.68' | 25.43' | 26.80' |
| MW-10A | 49.90' | 5.30' | 44.60' | 25.67' | 25.90' |
| MW-11A | 50.04' | 5.59' | 44.45' | 24.09' | 24.40' |

*B-TZ Monitoring Locations*

| Well ID | Top of Casing Elevation (msl) | Depth to Water (ft TOC) | Water Surface Elevation (msl) | Total Depth of Well as Measured (ft TOC) | Total Depth as Logged (ft TOC) * |
|---|---|---|---|---|---|
| MW-10B | 49.97' | 5.47' | 44.50' | 47.62' | 48.80' |
| MW-11B | 50.19' | 5.80' | 44.39' | 47.80' | 46.80' |
| P-10 | 47.72' | 3.41' | 44.31' | 42.95' | N/A |
| P-11 | 49.02' | 4.51' | 44.51' | 43.31' | 51.80' |
| P-12 | 48.82' | 4.15' | 44.67' | 43.35' | 51.70' |

NOTES:

No NAPL was detected in any well.
msl = feet above mean sea level
ft TOC = feet below the Top Of (the well) Casing
* Logged during well installation
N/A = Information not available

TABLE 2-4

Compliance Status of Wells and Piezometers
First Semiannual Sampling Event, March 11-19, 2002

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 | 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

*July 19, 2002*
*W.O. #422-102*

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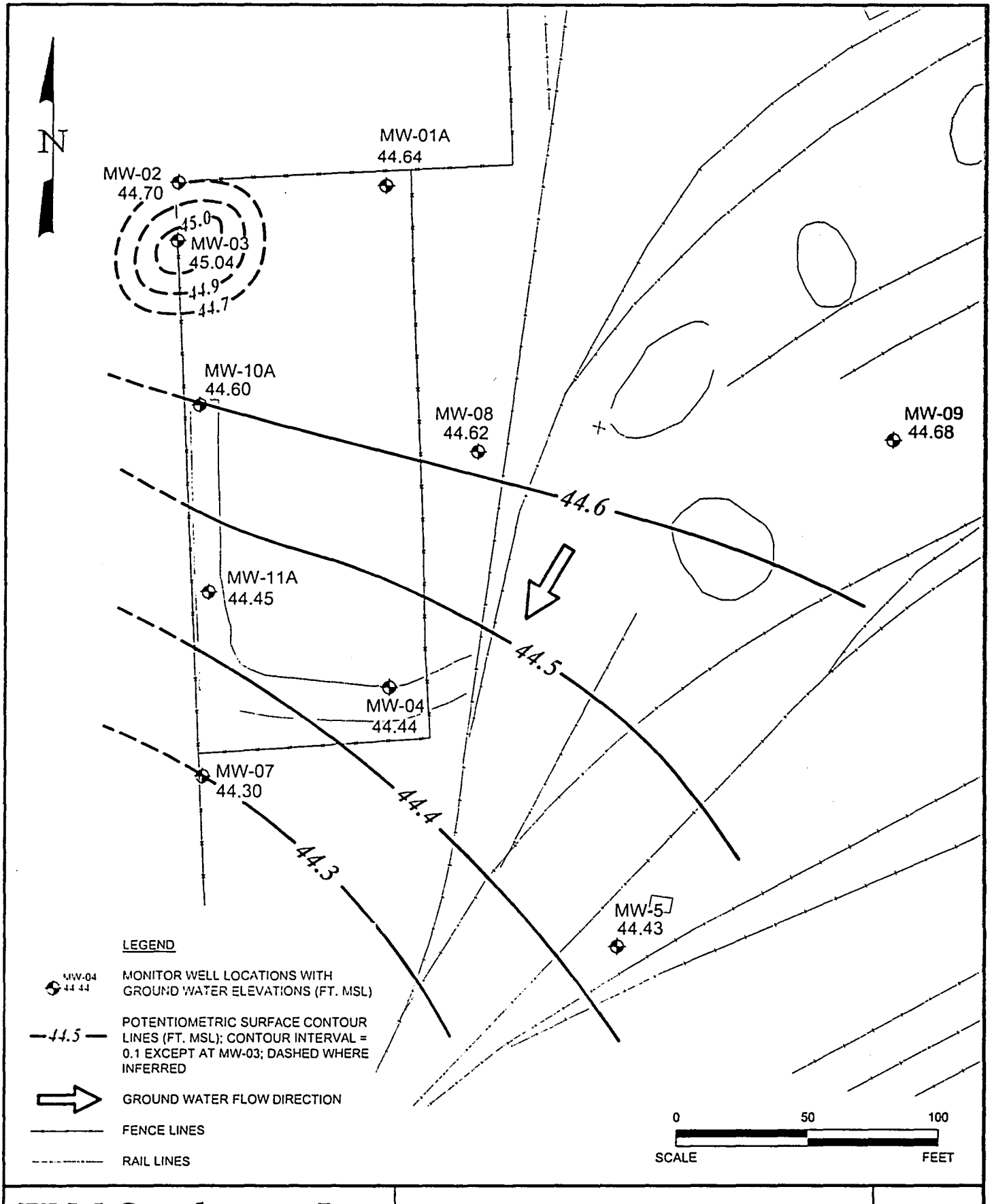


**ERM-Southwest, Inc.**

HOUSTON · NEW ORLEANS · AUSTIN · DALLAS · BEAUMONT · BATON ROUGE · CORPUS CHRISTI

| | | |
|---|---|---|
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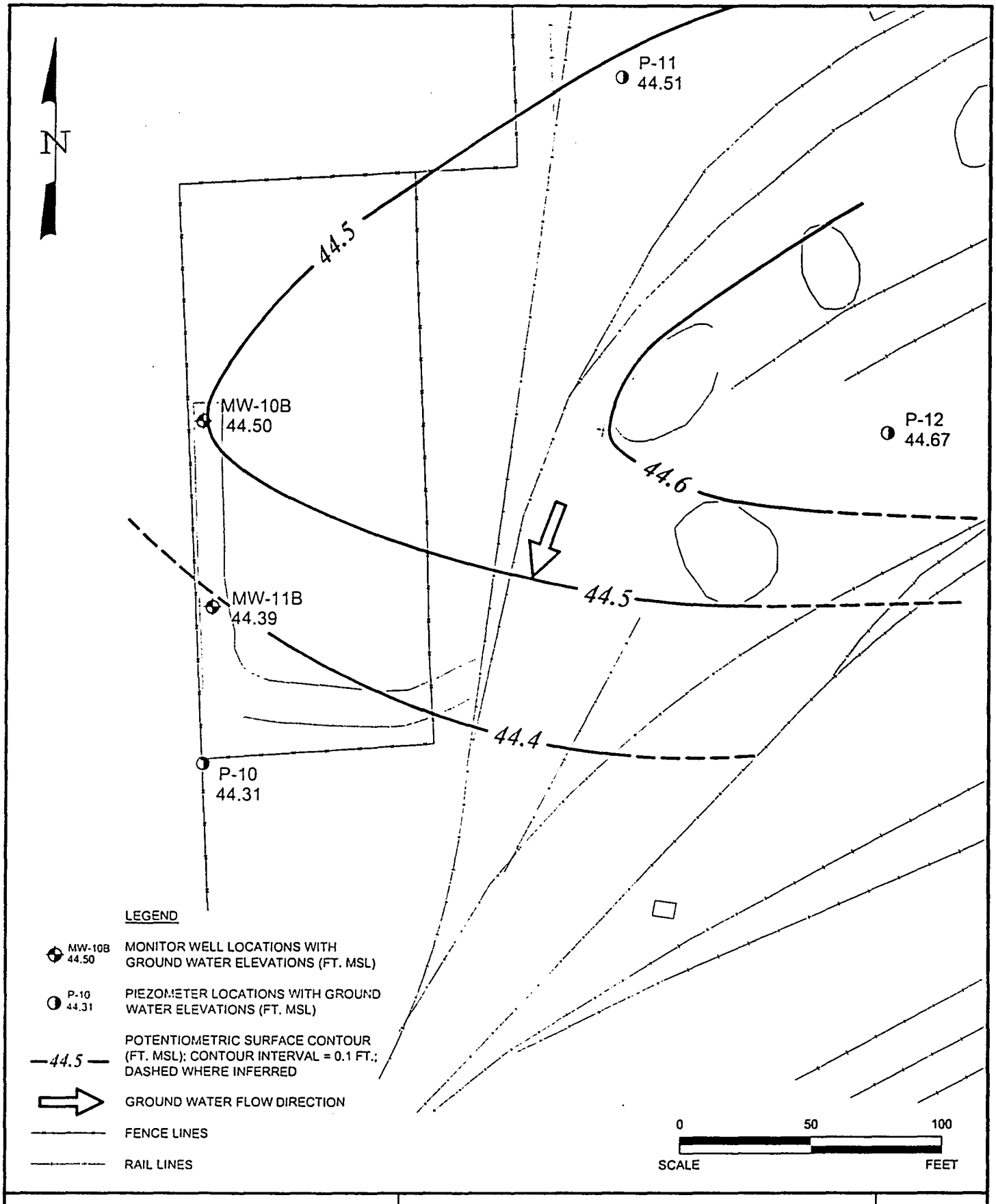
| W.O NO.: H:\DWG\G02\422102a243.dwg, 7/3/2002 2:34:30 PM | | |

FIGURE 2-1
A-TZ POTENTIOMETRIC SURFACE
MARCH 11, 2002
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM




ERM-Southwest, Inc.

HOUSTON · NEW ORLEANS · AUSTIN · DALLAS · BEAUMONT · BATON ROUGE · CORPUS CHRISTI

| | | |
|---|---|---|
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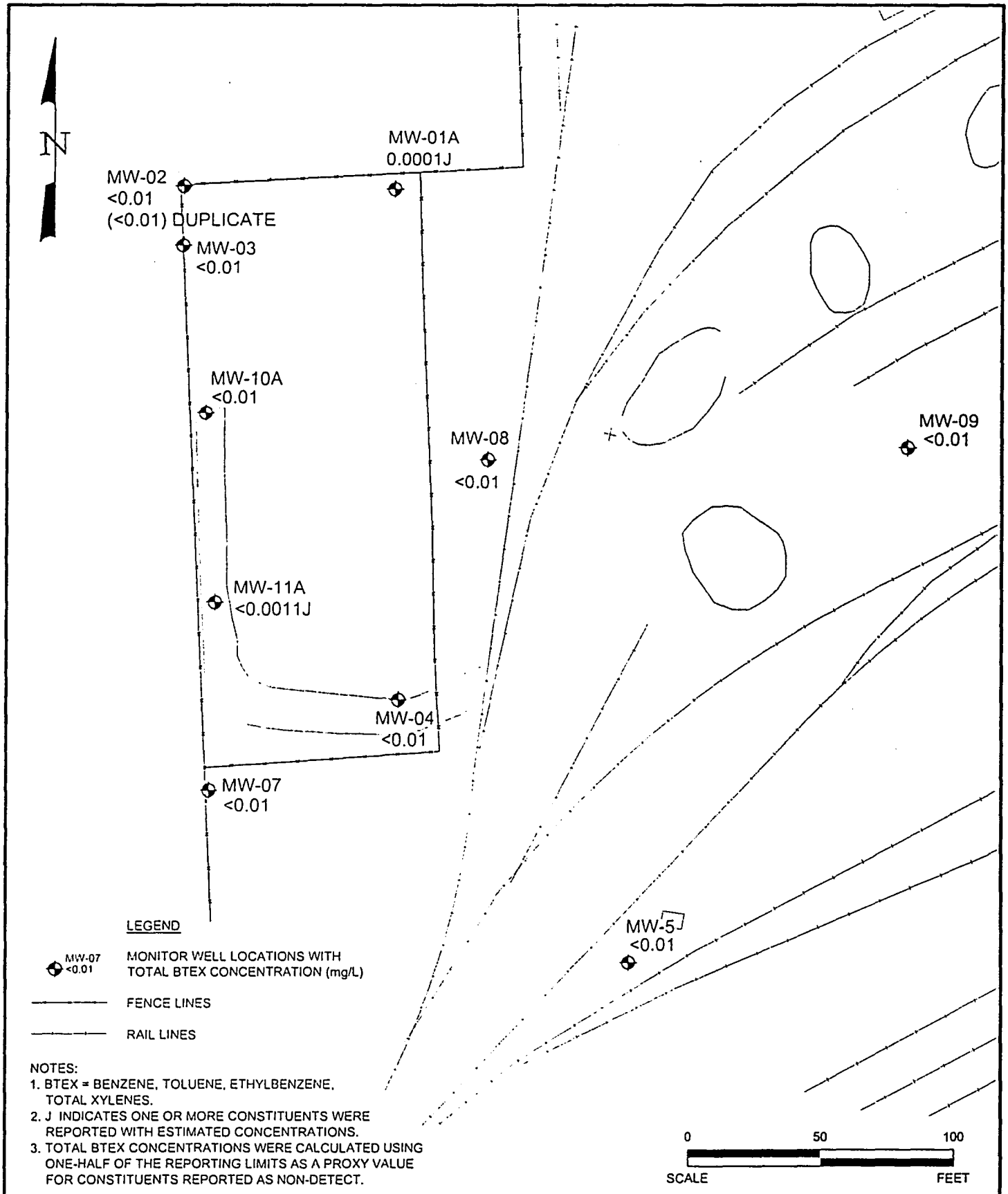
| DATE: 07/03/02 | SCALE: AS SHOWN | REV.: |
| W.O.NO.: H:\DWG\G02\422102A244.dwg, 7/3/2002 2:22:09 PM | | |

FIGURE 2-2
B-TZ POTENTIOMETRIC SURFACE
MARCH 11, 2002
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM

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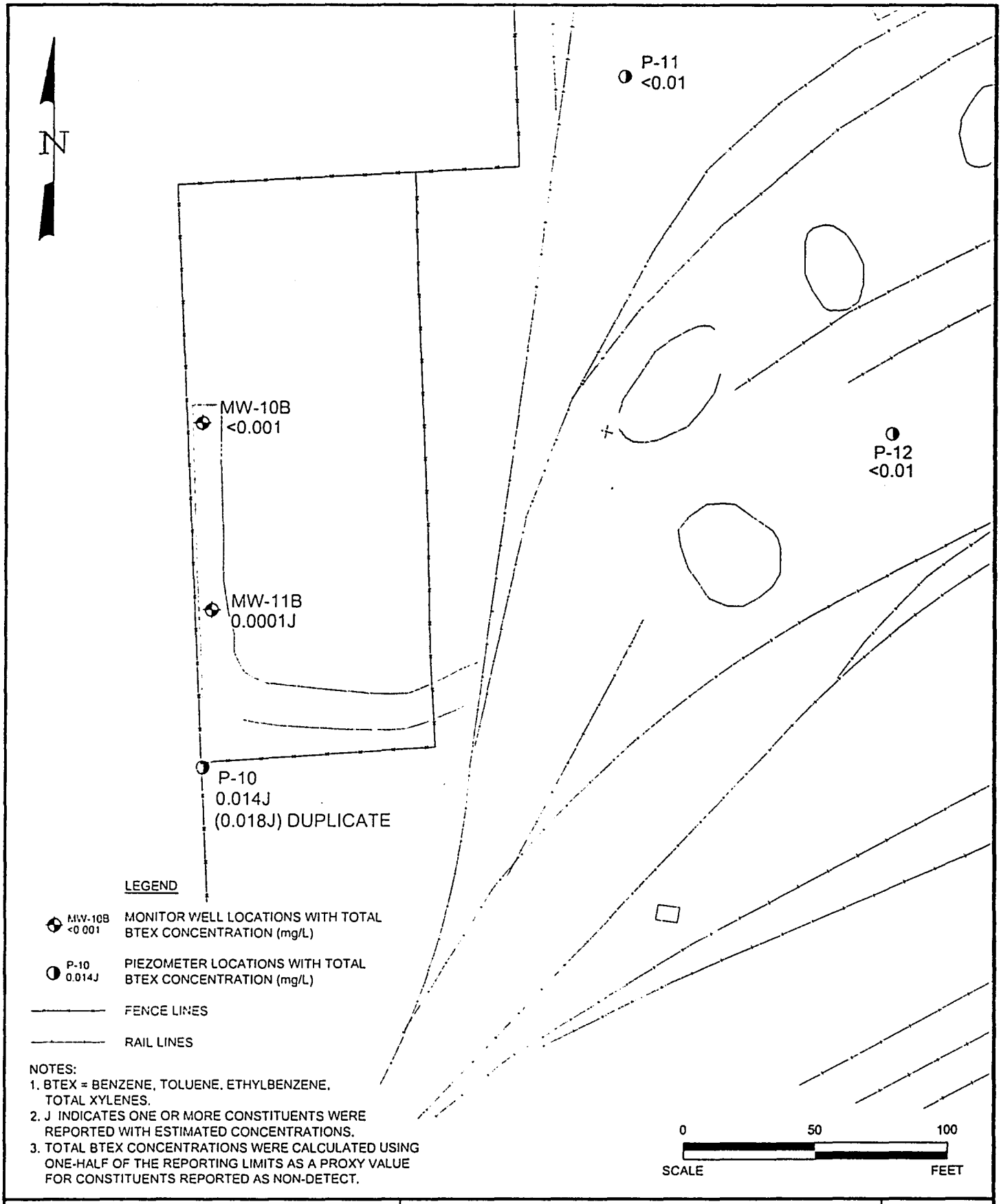
| | | |
|---|---|---|
| DESIGN: MGS | DRAWN: LMc | CHKD.: |
| DATE: 07/03/02 | SCALE: AS SHOWN | REV.: |
| W.O.NO.: H:\DWG\G02\422102A245.dwg, 7/3/2002 2:16:36 PM | | |

FIGURE 2-3
TOTAL BTEX IN A-TZ GROUND WATER (mg/L)
MARCH 11-15, 2002
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM

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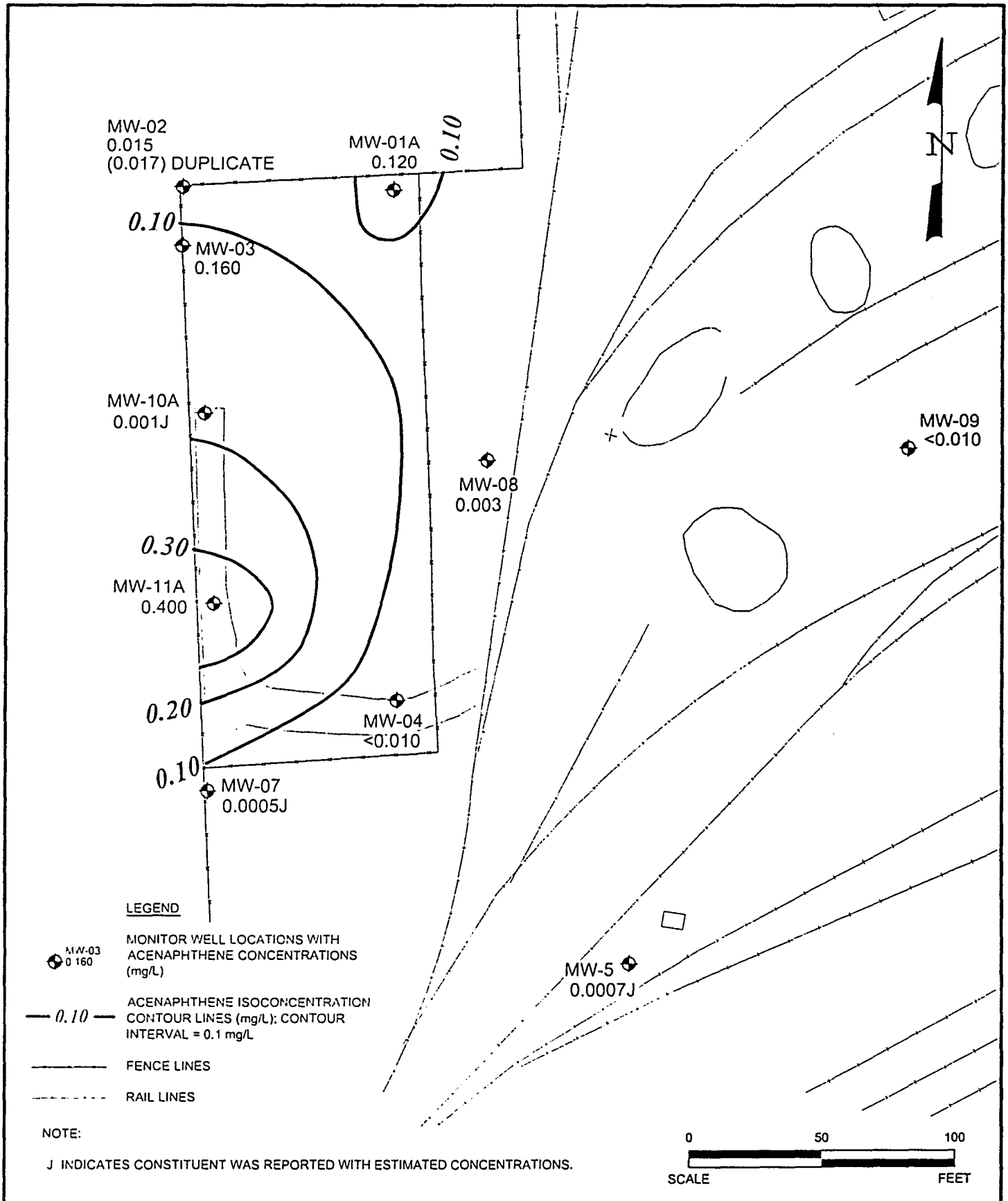
HOUSTON · NEW ORLEANS · AUSTIN · DALLAS · BEAUMONT · BATON ROUGE · CORPUS CHRISTI

FIGURE 2-4
TOTAL BTEX IN B-TZ GROUND WATER (mg/L)
MARCH 11-15, 2002
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

| | | |
|---|---|---|
| DESIGN: MGS | DRAWN: LMc | CHKD: |
| DATE: 07/03/02 | SCALE: AS SHOWN | REV.: |
| W.O.NO.: H:\DWG\G02\422102A246.dwg, 7/3/2002 2:15:54 PM | | |

ERM




ERM-Southwest, Inc.
HOUSTON NEW ORLEANS AUSTIN DALLAS BEAUMONT BATON ROUGE CORPUS CHRISTI

| | | |
|---|---|---|
| DESIGN: MGS | DRAWN: LMc | CHKD.: |
| DATE: 07/03/02 | SCALE: AS SHOWN | REV.: |
| W.O.NO.: H:\DWG\G02\422102a247.dwg, 7/3/2002 2:15:23 PM | | |

FIGURE 2-5
ACENAPHTHENE IN A-TZ GROUND WATER (mg/L)
MARCH 11-15, 2002
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

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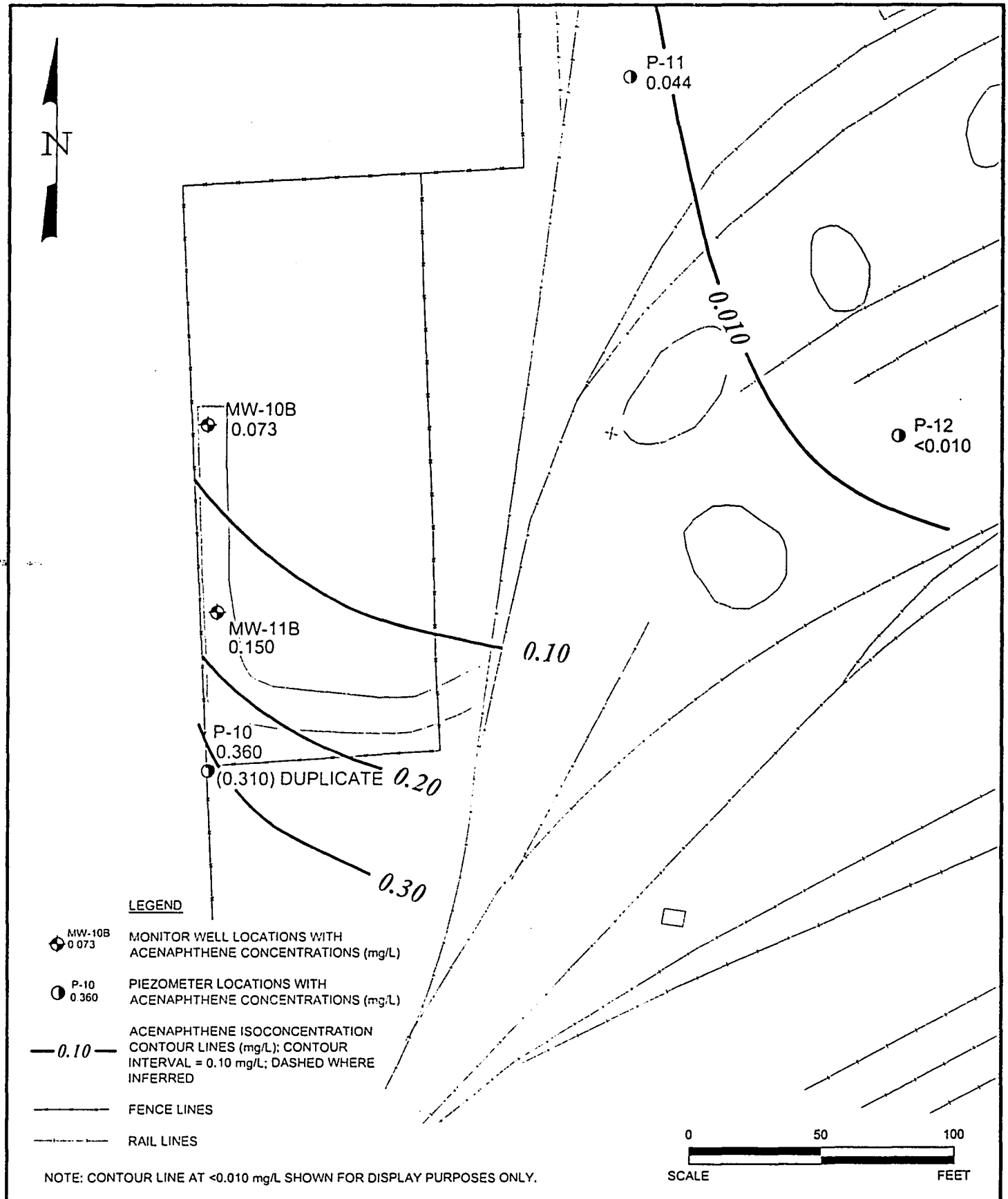


NOTE: CONTOUR LINE AT <0.010 mg/L SHOWN FOR DISPLAY PURPOSES ONLY.

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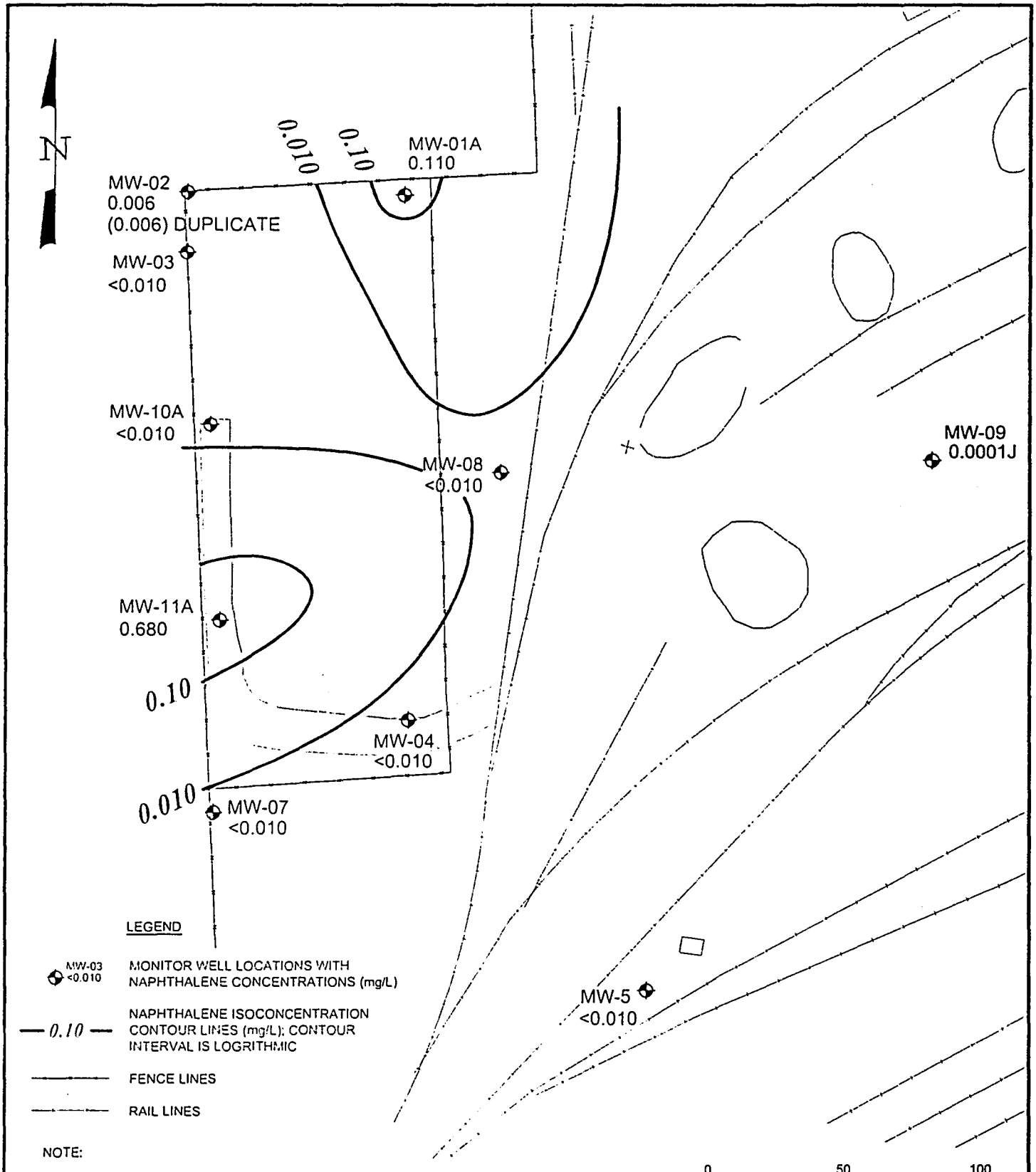
| | | |
|---|---|---|
| DESIGN: MGS | DRAWN: LMc | CHKD.: |
| DATE: 07/03/02 | SCALE: AS SHOWN | REV.: |
| W.O.NO.: H:\DWG\G02\422102A248.dwg, 7/3/2002 2:12:14 PM | | |

FIGURE 2-6
ACENAPHTHENE IN B-TZ GROUND WATER (mg/L)
MARCH 11-15, 2002
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM




ERM-Southwest, Inc.

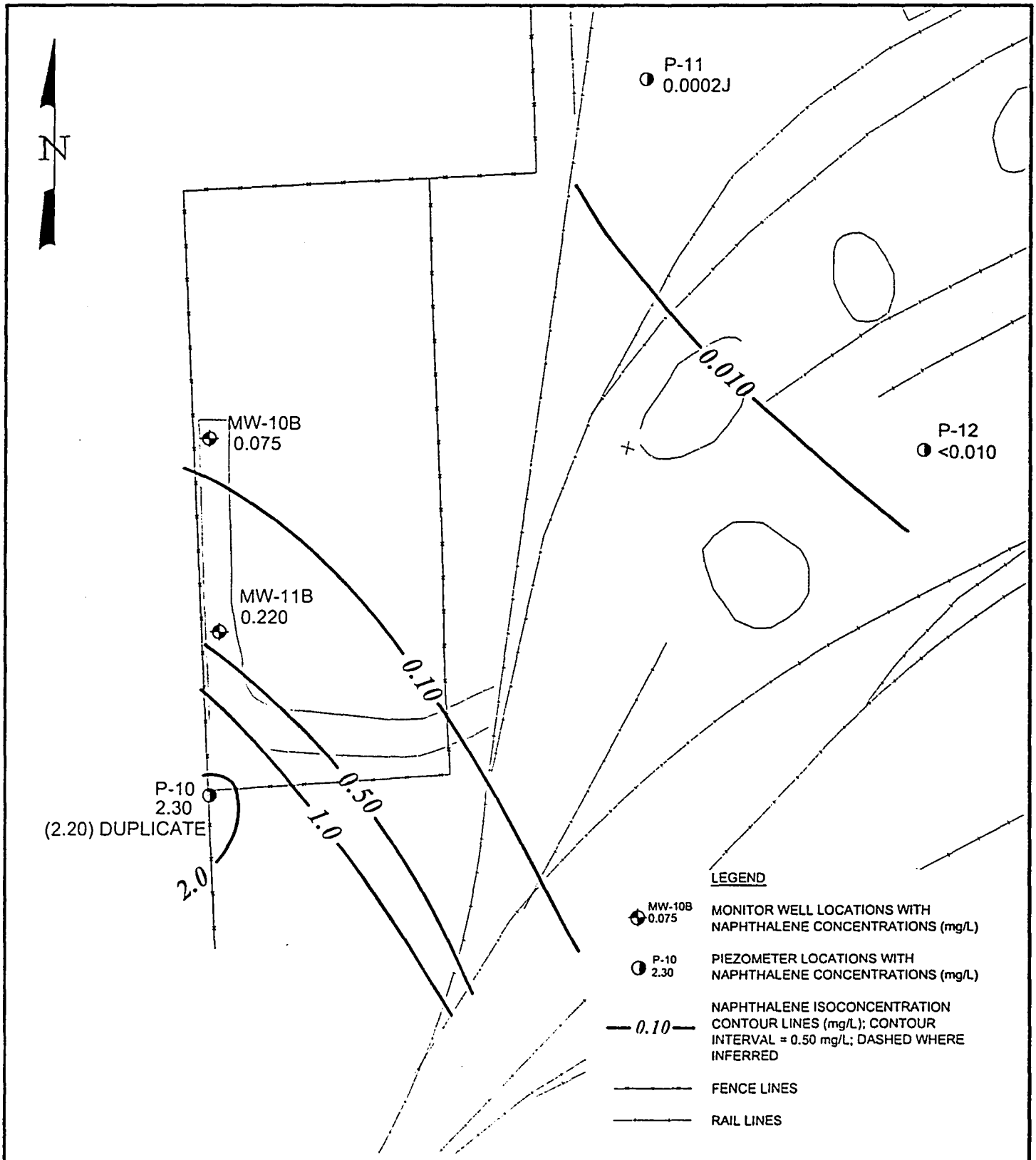
HOUSTON NEW ORLEANS AUSTIN DALLAS BEAUMONT BATON ROUGE CORPUS CHRISTI

FIGURE 2-7
NAPHTHALENE IN A-TZ GROUND WATER (mg/L)
MARCH 11-15, 2002
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

| | | |
|---|---|---|
| DESIGN: MGS | DRAWN: LMc | CHKD.: |
| DATE: 07/03/02 | SCALE: AS SHOWN | REV.: |

W.O.NO.: H:\DWG\G02\422102A249.dwg, 7/3/2002 2:07:53 PM

ERM




NOTES:
1. CONTOUR LINE AT <0.010 mg/L SHOWN FOR DISPLAY PURPOSES ONLY.
2. J INDICATES CONSTITUENT WAS REPORTED WITH ESTIMATED CONCENTRATIONS.

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| | | |
|---|---|---|
| DESIGN: MGS | DRAWN: LMc | CHKD.: |
| DATE: 07/03/02 | SCALE: AS SHOWN | REV.: |
| W.O.NO.: H:\DWG\G02\422102A250.dwg, 7/3/2002 2:06:35 PM | | |

FIGURE 2-8
NAPHTHALENE IN B-TZ GROUND WATER (mg/L)
MARCH 11-15, 2002
TNRCC PERMIT UNIT No. II.B.1.
Houston Wood Preserving Works
Houston, Texas

ERM

# Compliance Plan Tables

*Appendix A*

*July 19, 2002*
*W.O. #422-102*

**Environmental Resources Management**
16300 Katy Freeway, Suite 300
Houston, Texas 77094-1611
(281) 600-1000

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# TABLE I

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

| COLUMN A<br>Hazardous Constituents | COLUMN B<br>Concentration Limits (mg/l) |
|---|---|
| Acenaphthene | ND (0.010) |
| Acenaphthylene | ND (0.010) |
| Anthracene | ND (0.010) |
| Benzene | ND (0.005) |
| Benzo(a)anthracene | ND (0.010) |
| Benzo(a)pyrene | ND (0.010) |
| Bis(2-ethylhexyl)phthalate | ND (0.010) |
| Bis(2-chlororethoxy)methane | ND (0.010) |
| Chlorobenzene | ND (0.005) |
| 2-Chloronaphthalene | ND (0.010) |
| Chrysene | ND (0.010) |
| Dibenzofuran | ND (0.010) |
| 1,2-Dichlorethane | ND (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) |
| 2,4-Dinitrotoluene | ND (0.010) |
| 2,6-Dinitrotoluene | ND (0.010) |
| 1,2-Diphenylhydrazine | ND (0.010) |
| Ethylbenzene | ND (0.005) |
| Fluoranthene | ND (0.010) |
| Fluorene | ND (0.010) |
| Methylene chloride | ND (0.010) |
| 2-Methylnaphthalene | ND (0.010) |
| Naphthalene | ND (0.010) |
| Nitrobenzene | ND (0.010) |
| 4-Nitrophenol | ND (0.050) |
| N-Nitrosodiphenylamine | ND (0.010) |
| Pentachlorophenol | ND (0.050) |
| Phenanthrene | ND (0.010) |
| Phenol | ND (0.010) |
| Pyrene | ND (0.010) |
| Toluene | ND (0.005) |
| Xylenes | ND (0.005) |

NOTES:

N.D. Non-detectable at Practical Quantitation Limit as determined by the analytical methods of the United States Environmental Protection Agency publication SW-846 Test Methods for Evaluating Solid Waste, Third Edition, November 1986, (USEPA SW-846) 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 groundwater that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions.

* Because Methylene Chloride is listed herein with a PQL of 0.010 mg/L, and is the same compound as Dichloromethane, comparisons for compliance will be made at 0.010 mg/L.

TABLE III

Designation of Wells by Function

1. POINT OF COMPLIANCE WELLS

| | SAMPLING FREQUENCY |
|---|---|
| A. A-TZ or Upper Transmissive Zone | |
| MW-01A | Semiannual |
| MW-02 | Semiannual |
| MW-03 | Semiannual |
| MW-10A | Semiannual |
| MW-11A | Semiannual |
| B. B-TZ or Second Transmissive Zone | |
| MW-10B | Semiannual |
| MW-11B | Semiannual |
| P-10 | Semiannual |

2. BACKGROUND WELLS

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.

3. CORRECTIVE ACTION OBSERVATION WELLS

| | SAMPLING FREQUENCY |
|---|---|
| A. On-site A-TZ or Uppermost Transmissive Zone | |
| MW-04 | Semiannual |
| MW-05 | Semiannual |
| MW-07 | Semiannual |
| MW-08 | Semiannual |
| MW-09 | Semiannual |
| B. B-TZ or Second Transmissive Zone | |
| P-11 | Semiannual |
| P-12 | Semiannual |

NOTE:

This table has been updated from CP-50343 where appropriate.

# Field Parameters

*Appendix B*

*July 19, 2002*
*W.O. #422-102*

**Environmental Resources Management**
16300 Katy Freeway, Suite 300
Houston, Texas 77094-1611
(281) 600-1000

TABLE B-1

Ground Water Sampling Field Parameters
First Semiannual Sampling Event, 2002

Houston Wood Preserving Works
Houston, Texas

| Well ID: / Date Sampled: | MW-01A 03/19/02 | MW-02 03/13/02 | MW-03 03/13/02 | MW-04 03/11/02 | MW-05 03/14/02 | MW-07 03/11/02 | MW-08 03/12/02 | MW-09 03/14/02 |
|---|---|---|---|---|---|---|---|---|
| Time Sampled (hrs CST) | 0935 | 1657 | 1447 | 1445 | 1120 | 1625 | 1640 | 0845 |
| Temperature (°C) | 20.70 | 19.00 | 19.40 | NM | 21.40 | 19.80 | 20.30 | 21.30 |
| pH (Standard Units) | 6.96 | 6.76 | 7.04 | 6.72 | 7.14 | 7.37 | 7.67 | 7.21 |
| Specific Conductivity (uS) | 1314 | 674 | 1027 | 720 | 677 | 856 | 574 | 807 |
| Dissolved Oxygen (mg/L) | 0.40 | -1.90 | -1.30 | -1.30 | 1.30 | 6.30 | 4.50 | 3.50 |
| Turbidity | 2.60 | 29.45 | 6.01 | 0.00 | 5.09 | 0.00 | 0.00 | 7.61 |

| Well ID: / Date Sampled: | MW-10A 03/12/02 | MW-10B 03/13/02 | MW-11A 03/11/02 | MW-11B 03/14/02 | P-10 03/13/02 | P-11 03/14/02 | P-12 03/14/02 |
|---|---|---|---|---|---|---|---|
| Time Sampled (hrs CST) | 1505 | 1145 | 1555 | 0829 | 1455 | 1309 | 1000 |
| Temperature (°C) | 19.50 | 20.40 | 19.60 | 20.30 | 21.90 | 22.60 | 22.10 |
| pH (Standard Units) | 7.19 | 6.98 | 6.88 | 7.19 | 7.06 | 6.75 | 6.79 |
| Specific Conductivity (uS) | 1083 | 1222 | 1149 | 1198 | 1168 | 1330 | 1294 |
| Dissolved Oxygen (mg/L) | 1.50 | -0.70 | -2.50 | -1.90 | 0.40 | -1.10 | 0.50 |
| Turbidity | 2.67 | 13.91 | 0.00 | 8.36 | 0.52 | 4.37 | 0.69 |

NOTES:

CST - Central Standard Time
NM = Not Measured

# Laboratory Analytical Reports

*Appendix C*

*July 19, 2002*
*W.O. #422-102*

**Environmental Resources Management**
16300 Katy Freeway, Suite 300
Houston, Texas 77094-1611
(281) 600-1000

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SEVERN TRENT SERVICES

STL Houston

# ANALYTICAL REPORT

JOB NUMBER: 232425

Prepared For:

ERM Southwest, Inc.- Houston
16300 Katy Freeway
Suite 300
Houston, TX 77094-1611

Attention: Chris Young

Date: 04/10/2002


Signature

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail: [redacted]


04/10/02
Date


Severn Trent Laboratories
6310 Rothway Drive
Houston, TX 77040

PHONE: (713) 690-4444


TOTAL NO. OF PAGES 36




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STL Houston

04/10/2002

Chris Young
ERM Southwest, Inc.- Houston
16300 Katy Freeway
Suite 300
Houston, TX 77094-1611

Project : UPRR-HWPW
Project No. : 232425
Date Received : 03/15/2002
STL Job : 232425

Dear Chris Young:

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

1. MW11B-1SA02
2. FB031402-1SA02
3. MW09-1SA02
4. P12-1SA02
5. MW05-1SA02
6. P11-1SA02
7. TB031402-1SA02

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 are noted in the case narrative. The case narrative is an integral 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



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SEVERN TRENT SERVICES

STL Houston

## SAMPLE INFORMATION
Date: 04/10/2002

Job Number.: 232425
Customer...: ERM Southwest, Inc.- Houston
Attn.....: Chris Young

Project Number.....: 99000484
Customer Project ID....: UPRR-FIRST SEMIANNUA
Project Description....: UPRR-HWPW

| Laboratory Sample ID | Customer Sample ID | Sample Matrix | Date Sampled | Time Sampled | Date Received | Time Received |
|---|---|---|---|---|---|---|
| 232425-1 | MW11B-1SA02 | Water | 03/14/2002 | 08:29 | 03/15/2002 | 09:09 |
| 232425-2 | FB031402-1SA02 | Field Blank | 03/14/2002 | 08:27 | 03/15/2002 | 09:09 |
| 232425-3 | MW09-1SA02 | Water | 03/14/2002 | 08:45 | 03/15/2002 | 09:09 |
| 232425-4 | P12-1SA02 | Water | 03/14/2002 | 10:10 | 03/15/2002 | 09:09 |
| 232425-5 | MW05-1SA02 | Water | 03/14/2002 | 11:20 | 03/15/2002 | 09:09 |
| 232425-6 | P11-1SA02 | Water | 03/14/2002 | 13:09 | 03/15/2002 | 09:09 |
| 232425-7 | TB031402-1SA02 | Trip Blank | 03/14/2002 | 00:01 | 03/15/2002 | 09:09 |



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SEVERN TRENT SERVICES

STL Houston

# LABORATORY TEST RESULTS

Job Number: 232425

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: MW11B-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 08:29
Sample Matrix.....: Water

Laboratory Sample ID: 232425-1
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Data Package Validataion | | | | | | | | | | | |
| | GC/MS VOA Validation, Water | Complete | | | | | 1 | | 48877 | | 04/10/02 0000 | srh |
| | GC/MS SVOA Validation, Water | Complete | | | | | 1 | | 48877 | | 04/10/02 0000 | srh |
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47449 | | 03/15/02 1000 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 48062 | | 03/19/02 1358 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 48062 | | 03/19/02 1358 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1358 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1358 | lg1 |
| | Pentachlorophenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1358 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1358 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 150 | | | 1 | 8 | 5.00000 | ug/L | 48064 | | 03/20/02 1704 | lg1 |
| | Acenaphthylene, Water | 4 | | | 0.2 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Anthracene, Water | 7 | | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.3 | J | | 0.5 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | 2-Chloronaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Chrysene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Dibenzofuran, Water | 78 | | | 1 | 8 | 5.00000 | ug/L | 48064 | | 03/20/02 1704 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.5 | J | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Fluoranthene, Water | 7 | | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Fluorene, Water | 87 | | | 1 | 8 | 5.00000 | ug/L | 48064 | | 03/20/02 1704 | lg1 |
| | 2-Methylnaphthalene, Water | 26 | | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Naphthalene, Water | 220 | | | 2 | 10 | 5.00000 | ug/L | 48064 | | 03/20/02 1704 | lg1 |

* In Description = Dry Wgt.



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# LABORATORY TEST RESULTS

Job Number: 232425

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: MW11B-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 08:29
Sample Matrix.....: Water

Laboratory Sample ID: 232425-1
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nitrobenzene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | n-Nitrosodiphenylamine, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Phenanthrene, Water | 34 | | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Pyrene, Water | 3 | | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | 2,4-Dimethylphenol, Water | 0.7 | J | | 0.1 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | 4-Nitrophenol, Water | 7 | U | | 1 | 7 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| | Phenol, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1123 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1720 | zfl |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1720 | zfl |
| 5 | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1720 | zfl |
| | Ethylbenzene, Water | 1 | J | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1720 | zfl |
| | Methylene Chloride, Water | 2 | J | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1720 | zfl |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1720 | zfl |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47613 | | 03/19/02 1720 | zfl |

* In Description = Dry Wgt.



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SEVERN TRENT SERVICES

STL Houston

# LABORATORY TEST RESULTS

Job Number: 232425

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: FB031402-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 08:27
Sample Matrix.....: Field Blank

Laboratory Sample ID: 232425-2
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47797 | | 03/21/02 1000 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 48062 | | 03/22/02 1635 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 48062 | | 03/22/02 1635 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 48062 | | 03/22/02 1635 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 48062 | | 03/22/02 1635 | lg1 |
| | Pentachlorophenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 48062 | | 03/22/02 1635 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 48062 | | 03/22/02 1635 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Acenaphthylene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Anthracene, Water | 2 | U | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 2 | U | | 0.5 | 2 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | 2-Chloronaphthalene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Chrysene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Dibenzofuran, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.2 | J | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Fluoranthene, Water | 2 | U | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Fluorene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | 2-Methylnaphthalene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Naphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Nitrobenzene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | n-Nitrosodiphenylamine, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Phenanthrene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Pyrene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232425 Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Customer Sample ID: FB031402-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 08:27
Sample Matrix.....: Field Blank

Laboratory Sample ID: 232425-2
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 1 | U | | 0.1 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | 4-Nitrophenol, Water | 6 | U | | 1 | 6 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| | Phenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 48064 | | 03/22/02 1451 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1509 | zfl |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1509 | zfl |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1509 | zfl |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1509 | zfl |
| | Methylene Chloride, Water | 3 | J | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1509 | zfl |
| | Toluene, Water | 3 | J | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1509 | zfl |
| 2 | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47613 | | 03/19/02 1509 | zfl |

* In Description = Dry Wgt.



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SEVERN TRENT SERVICES

STL Houston

# LABORATORY TEST RESULTS

Job Number: 232425

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: MW09-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 08:45
Sample Matrix.....: Water

Laboratory Sample ID: 232425-3
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47449 | | 03/15/02 1000 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 48062 | | 03/19/02 1452 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 48062 | | 03/19/02 1452 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1452 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1452 | lg1 |
| | Pentachlorophenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1452 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1452 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Acenaphthylene, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Anthracene, Water | 0.5 | J | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| ∞ | Bis(2-ethylhexyl)phthalate, Water | 0.6 | J | | 0.5 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | 2-Chloronaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Chrysene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Dibenzofuran, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.6 | J | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Fluoranthene, Water | 2 | U | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Fluorene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | 2-Methylnaphthalene, Water | 0.04 | J | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Naphthalene, Water | 0.1 | J | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Nitrobenzene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | n-Nitrosodiphenylamine, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Phenanthrene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Pyrene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232425 Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Customer Sample ID: MW09-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 08:45
Sample Matrix.....: Water

Laboratory Sample ID: 232425-3
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 2 | U | | 0.1 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | 4-Nitrophenol, Water | 7 | U | | 1 | 7 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| | Phenol, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1220 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2007 | zfl |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2007 | zfl |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2007 | zfl |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2007 | zfl |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2007 | zfl |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2007 | zfl |
| 6 | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47613 | | 03/18/02 2007 | zfl |

* In Description = Dry Wgt.



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# LABORATORY TEST RESULTS

Job Number: 232425

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: P12-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 10:10
Sample Matrix.....: Water

Laboratory Sample ID: 232425-4
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47449 | | 03/15/02 1000 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 48062 | | 03/19/02 1520 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 48062 | | 03/19/02 1520 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1520 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1520 | lg1 |
| | Pentachlorophenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1520 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1520 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Acenaphthylene, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Anthracene, Water | 0.1 | J | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.5 | J | | 0.5 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | 2-Chloronaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Chrysene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Dibenzofuran, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.4 | J | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Fluoranthene, Water | 2 | U | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Fluorene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | 2-Methylnaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Naphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Nitrobenzene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | n-Nitrosodiphenylamine, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Phenanthrene, Water | 0.08 | J | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Pyrene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |

* In Description = Dry Wgt.



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STL Houston

# LABORATORY TEST RESULTS

Job Number: 232425

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: P12-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 10:10
Sample Matrix.....: Water

Laboratory Sample ID: 232425-4
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 2 | U | | 0.1 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | 4-Nitrophenol, Water | 7 | U | | 1 | 7 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| | Phenol, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1249 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2033 | zfl |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2033 | zfl |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2033 | zfl |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2033 | zfl |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2033 | zfl |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2033 | zfl |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47613 | | 03/18/02 2033 | zfl |

* In Description = Dry Wgt.



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SEVERN TRENT SERVICES

STL Houston

LABORATORY TEST RESULTS

Job Number: 232425

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: MW05-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 11:20
Sample Matrix.....: Water

Laboratory Sample ID: 232425-5
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47449 | | 03/15/02 1000 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 48062 | | 03/19/02 1548 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 48062 | | 03/19/02 1548 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1548 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1548 | lg1 |
| | Pentachlorophenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1548 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1548 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 0.7 | J | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Acenaphthylene, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Anthracene, Water | 0.5 | J | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.5 | J | | 0.5 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | 2-Chloronaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Chrysene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Dibenzofuran, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.4 | J | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Fluoranthene, Water | 2 | U | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Fluorene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | 2-Methylnaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Naphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Nitrobenzene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | n-Nitrosodiphenylamine, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Phenanthrene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Pyrene, Water | 0.1 | J | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |

12

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232425 Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Customer Sample ID: MW05-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 11:20
Sample Matrix.....: Water

Laboratory Sample ID: 232425-5
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 2 | U | | 0.1 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | 4-Nitrophenol, Water | 7 | U | | 1 | 7 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| | Phenol, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1319 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2059 | zfl |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2059 | zfl |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2059 | zfl |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2059 | zfl |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2059 | zfl |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/18/02 2059 | zfl |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47613 | | 03/18/02 2059 | zfl |

13

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232425 Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Customer Sample ID: P11-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 13:09
Sample Matrix.....: Water

Laboratory Sample ID: 232425-6
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47449 | | 03/15/02 1000 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 48062 | | 03/19/02 1615 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 48062 | | 03/19/02 1615 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1615 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1615 | lg1 |
| | Pentachlorophenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1615 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 48062 | | 03/19/02 1615 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 44 | | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Acenaphthylene, Water | 0.3 | J | | 0.2 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Anthracene, Water | 1 | J | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.2 | J | | 0.5 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | 2-Chloronaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Chrysene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Dibenzofuran, Water | 0.9 | J | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.3 | J | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Fluoranthene, Water | 5 | | | 0.4 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Fluorene, Water | 18 | | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | 2-Methylnaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Naphthalene, Water | 0.2 | J | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Nitrobenzene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | n-Nitrosodiphenylamine, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Phenanthrene, Water | 0.09 | J | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Pyrene, Water | 3 | | | 0.3 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |

14

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LABORATORY TEST RESULTS

Job Number: 232425

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: P11-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 13:09
Sample Matrix.....: Water

Laboratory Sample ID: 232425-6
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 2 | U | | 0.1 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | 4-Nitrophenol, Water | 7 | U | | 1 | 7 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| | Phenol, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 48064 | | 03/19/02 1348 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1601 | zfl |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1601 | zfl |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1601 | zfl |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1601 | zfl |
| | Methylene Chloride, Water | 1 | J | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1601 | zfl |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1601 | zfl |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47613 | | 03/19/02 1601 | zfl |

15

* In Description = Dry Wgt.



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# LABORATORY TEST RESULTS

Job Number: 232425

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: TB031402-1SA02
Date Sampled.....: 03/14/2002
Time Sampled.....: 00:01
Sample Matrix.....: Trip Blank

Laboratory Sample ID: 232425-7
Date Received.....: 03/15/2002
Time Received.....: 09:09

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1535 | zfl |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1535 | zfl |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1535 | zfl |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1535 | zfl |
| | Methylene Chloride, Water | 3 | J | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1535 | zfl |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47613 | | 03/19/02 1535 | zfl |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47613 | | 03/19/02 1535 | zfl |

16

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# QUALITY CONTROL RESULTS

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: lg1
Method Description.: Semivolatile Organics - SIM Analysis Batch(s)...: 47875 48062

| MB | Method Blank | SVS0304028 | 47797 | | 03/22/2002 | 1540 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Bis(2-chloroethoxy)methane, Water | 0 | | | | | | | |
| 2,4-Dinitrotoluene, Water | 0 | | | | | | | |
| 2,6-Dinitrotoluene, Water | 0 | | | | | | | |
| Pentachlorophenol, Water | 0 | | | | | | | |
| 1,2-Diphenylhydrazine, Water | 0 | | | | | | | |

| MB | Method Blank | SVS0304028 | 47449 | | 03/19/2002 | 0828 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Bis(2-chloroethoxy)methane, Water | 0 | | | | | | | |
| 2,4-Dinitrotoluene, Water | 0 | | | | | | | |
| 2,6-Dinitrotoluene, Water | 0 | | | | | | | |
| Pentachlorophenol, Water | 0 | | | | | | | |
| 1,2-Diphenylhydrazine, Water | 0 | | | | | | | |

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: lg1
Method Description.: Semivolatile Organics, Low Level Batch(s)...: 47867 48064

| LCS | Laboratory Control Sample | SVS020702X | 47797 | | 03/22/2002 | 1256 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 5.17830 | | 5.000000 | | 103.6 | | 32-165 | |
| Acenaphthylene, Water | 4.93701 | | 5.000000 | | 98.7 | | 10-150 | |
| Anthracene, Water | 5.41153 | | 5.000000 | | 108.2 | | 23-178 | |
| Benzo(a)anthracene, Water | 5.37606 | | 5.000000 | | 107.5 | | 25-180 | |
| Benzo(b)fluoranthene, Water | 5.42793 | | 5.000000 | | 108.6 | | 24-175 | |
| Benzo(k)fluoranthene, Water | 5.52039 | | 5.000000 | | 110.4 | | 15-185 | |
| Benzo(ghi)perylene, Water | 4.76099 | | 5.000000 | | 95.2 | | 15-182 | |
| Benzo(a)pyrene, Water | 4.76646 | | 5.000000 | | 95.3 | | 19-182 | |
| Bis(2-chloroethoxy)methane, Water | 5.14515 | | 5.000000 | | 102.9 | | 47-148 | |
| Bis(2-ethylhexyl)phthalate, Water | 5.33637 | | 5.000000 | | 106.7 | | 25-173 | |
| 2-Chloronaphthalene, Water | 4.85059 | | 5.000000 | | 97.0 | | 23-143 | |
| Chrysene, Water | 5.52714 | | 5.000000 | | 110.5 | | 23-180 | |
| Dibenzo(a,h)anthracene, Water | 5.07525 | | 5.000000 | | 101.5 | | 12-178 | |
| Dibenzofuran, Water | 5.13888 | | 5.000000 | | 102.8 | | 35-153 | |
| Di-n-butyl Phthalate, Water | 5.36700 | | 5.000000 | | 107.3 | | 28-185 | |
| 2,4-Dinitrotoluene, Water | 5.60368 | | 5.000000 | | 112.1 | | 13-175 | |
| 2,6-Dinitrotoluene, Water | 5.97906 | | 5.000000 | | 119.6 | | 17-180 | |
| Fluoranthene, Water | 5.63019 | | 5.000000 | | 112.6 | | 28-180 | |
| Fluorene, Water | 5.09191 | | 5.000000 | | 101.8 | | 30-189 | |
| Indeno(1,2,3-cd)pyrene, Water | 4.14595 | | 5.000000 | | 82.9 | | 16-180 | |
| 2-Methylnaphthalene, Water | 4.87080 | | 5.000000 | | 97.4 | | 26-168 | |
| Naphthalene, Water | 4.92574 | | 5.000000 | | 98.5 | | 36-139 | |



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# QUALITY CONTROL RESULTS

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| LCS | Laboratory Control Sample | SVS020702X | 47797 | | 03/22/2002 | 1256 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Nitrobenzene, Water | 5.32695 | | 5.000000 | | 106.5 | | 17-163 | |
| n-Nitrosodiphenylamine, Water | 5.52365 | | 5.000000 | | 110.5 | | 58-174 | |
| Phenanthrene, Water | 5.20500 | | 5.000000 | | 104.1 | | 26-166 | |
| Pyrene, Water | 5.44468 | | 5.000000 | | 108.9 | | 28-173 | |
| 2,4-Dimethylphenol, Water | 4.18424 | | 5.000000 | | 83.7 | | 23-157 | |
| 2-Methyl-4,6-dinitrophenol, Water | 4.66783 | | 5.000000 | | 93.4 | | 17-164 | |
| 4-Nitrophenol, Water | 3.04282 | | 5.000000 | | 60.9 | | 10-92 | |
| Pentachlorophenol, Water | 3.31344 | | 5.000000 | | 66.3 | | 10-130 | |
| Phenol, Water | 2.28406 | | 5.000000 | | 45.7 | | 20-83 | |

| MB | Method Blank | SVS030402B | 47797 | | 03/22/2002 | 1129 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 0 | | | | | | | |
| Acenaphthylene, Water | 0 | | | | | | | |
| Anthracene, Water | 0 | | | | | | | |
| Benzo(a)anthracene, Water | 0 | | | | | | | |
| Benzo(b)fluoranthene, Water | 0 | | | | | | | |
| Benzo(k)fluoranthene, Water | 0 | | | | | | | |
| Benzo(ghi)perylene, Water | 0 | | | | | | | |
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Bis(2-chloroethoxy)methane, Water | 0 | | | | | | | |
| Bis(2-ethylhexyl)phthalate, Water | 0.23316 | | | | | | | |
| 2-Chloronaphthalene, Water | 0 | | | | | | | |
| Chrysene, Water | 0 | | | | | | | |
| Dibenzo(a,h)anthracene, Water | 0 | | | | | | | |
| Dibenzofuran, Water | 0 | | | | | | | |
| Di-n-butyl Phthalate, Water | 0 | | | | | | | |
| 2,4-Dinitrotoluene, Water | 0 | | | | | | | |
| 2,6-Dinitrotoluene, Water | 0 | | | | | | | |
| Fluoranthene, Water | 0 | | | | | | | |
| Fluorene, Water | 0 | | | | | | | |
| Indeno(1,2,3-cd)pyrene, Water | 0 | | | | | | | |
| 2-Methylnaphthalene, Water | 0 | | | | | | | |
| Naphthalene, Water | 0 | | | | | | | |
| Nitrobenzene, Water | 0 | | | | | | | |
| n-Nitrosodiphenylamine, Water | 0 | | | | | | | |
| Phenanthrene, Water | 0 | | | | | | | |
| Pyrene, Water | 0 | | | | | | | |
| 2,4-Dimethylphenol, Water | 0 | | | | | | | |
| 2-Methyl-4,6-dinitrophenol, Water | 0 | | | | | | | |
| 4-Nitrophenol, Water | 0 | | | | | | | |
| Pentachlorophenol, Water | 0 | | | | | | | |
| Phenol, Water | 0 | | | | | | | |
| 1-Methylnaphthalene, Water | 0 | | | | | | | |
| 1,2-Diphenylhydrazine, Water | 0 | | | | | | | |



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# QUALITY CONTROL RESULTS

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| PB | Prep. Blank | SVS0304028 | 47797 | | 03/22/2002 | 1324 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 0 | | | | | | | |
| Acenaphthylene, Water | 0 | | | | | | | |
| Anthracene, Water | 0 | | | | | | | |
| Benzo(a)anthracene, Water | 0 | | | | | | | |
| Benzo(b)fluoranthene, Water | 0 | | | | | | | |
| Benzo(k)fluoranthene, Water | 0 | | | | | | | |
| Benzo(ghi)perylene, Water | 0 | | | | | | | |
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Chrysene, Water | 0 | | | | | | | |
| Dibenzo(a,h)anthracene, Water | 0 | | | | | | | |
| Fluoranthene, Water | 0 | | | | | | | |
| Fluorene, Water | 0 | | | | | | | |
| Indeno(1,2,3-cd)pyrene, Water | 0 | | | | | | | |
| 2-Methylnaphthalene, Water | 0 | | | | | | | |
| Naphthalene, Water | 0 | | | | | | | |
| Phenanthrene, Water | 0 | | | | | | | |
| Pyrene, Water | 0 | | | | | | | |
| 1-Methylnaphthalene, Water | 0 | | | | | | | |
| Carbazole, Water | 0 | | | | | | | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| SB | Spiked Blank | SVS012802C | 47797 | | 03/22/2002 | 1158 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 5.44992 | | 5.000000 | 0 | 109 | | 46-118 | |
| 2,4-Dinitrotoluene, Water | 6.20452 | | 5.000000 | 0 | 124 | | 24-96 | |
| Pyrene, Water | 5.95063 | | 5.000000 | 0 | 119 | | 26-127 | |
| 4-Nitrophenol, Water | 5.23631 | | 10.000000 | 0 | 52 | | 10-80 | |
| Pentachlorophenol, Water | 8.82794 | | 10.000000 | 0 | 88 | | 9-103 | |
| Phenol, Water | 4.22386 | | 10.000000 | 0 | 42 | | 10-112 | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| SBD | Spiked Blank Duplicate | SVS012802C | 47797 | | 03/22/2002 | 1227 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 5.20397 | 5.44992 | 5.000000 | 0 | 104.1 | | 46-118 | |
| | | | | | 4.6 | | 31 | |
| 2,4-Dinitrotoluene, Water | 5.89695 | 6.20452 | 5.000000 | 0 | 117.9 | | 24-96 | |
| | | | | | 5.1 | | 38 | |
| Pyrene, Water | 6.08728 | 5.95063 | 5.000000 | 0 | 121.7 | | 26-127 | |
| | | | | | 2.3 | | 31 | |
| 4-Nitrophenol, Water | 4.09426 | 5.23631 | 10.000000 | 0 | 40.9 | | 10-80 | |
| | | | | | 24.5 | | 50 | |
| Pentachlorophenol, Water | 7.44414 | 8.82794 | 10.000000 | 0 | 74.4 | | 9-103 | |
| | | | | | 17.0 | | 50 | |
| Phenol, Water | 4.26753 | 4.22386 | 10.000000 | 0 | 42.7 | | 10-112 | |
| | | | | | 1.0 | | 23 | |



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# QUALITY CONTROL RESULTS

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| LCS | Laboratory Control Sample | SVS020702X | 47449 | | 03/19/2002 | 1054 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 4.74146 | | 5.000000 | | 94.8 | | 32-165 | |
| Acenaphthylene, Water | 4.42120 | | 5.000000 | | 88.4 | | 10-150 | |
| Anthracene, Water | 4.79508 | | 5.000000 | | 95.9 | | 23-178 | |
| Benzo(a)anthracene, Water | 4.78359 | | 5.000000 | | 95.7 | | 25-180 | |
| Benzo(a)pyrene, Water | 4.67641 | | 5.000000 | | 93.5 | | 19-182 | |
| Bis(2-chloroethoxy)methane, Water | 4.45327 | | 5.000000 | | 89.1 | | 47-148 | |
| Bis(2-ethylhexyl)phthalate, Water | 4.51141 | | 5.000000 | | 90.2 | | 25-173 | |
| 2-Chloronaphthalene, Water | 4.32872 | | 5.000000 | | 86.6 | | 23-143 | |
| Chrysene, Water | 4.87523 | | 5.000000 | | 97.5 | | 23-180 | |
| Dibenzofuran, Water | 4.80170 | | 5.000000 | | 96.0 | | 35-153 | |
| Di-n-butyl Phthalate, Water | 4.86203 | | 5.000000 | | 97.2 | | 28-185 | |
| 2,4-Dinitrotoluene, Water | 5.23365 | | 5.000000 | | 104.7 | | 13-175 | |
| 2,6-Dinitrotoluene, Water | 5.15567 | | 5.000000 | | 103.1 | | 17-180 | |
| Fluoranthene, Water | 5.15693 | | 5.000000 | | 103.1 | | 28-180 | |
| Fluorene, Water | 4.87754 | | 5.000000 | | 97.6 | | 30-189 | |
| 2-Methylnaphthalene, Water | 4.72688 | | 5.000000 | | 94.5 | | 26-168 | |
| Naphthalene, Water | 4.60871 | | 5.000000 | | 92.2 | | 36-139 | |
| Nitrobenzene, Water | 4.59088 | | 5.000000 | | 91.8 | | 17-163 | |
| n-Nitrosodiphenylamine, Water | 4.38587 | | 5.000000 | | 87.7 | | 58-174 | |
| Phenanthrene, Water | 4.52427 | | 5.000000 | | 90.5 | | 26-166 | |
| Pyrene, Water | 4.83295 | | 5.000000 | | 96.7 | | 28-173 | |
| 2,4-Dimethylphenol, Water | 3.16455 | | 5.000000 | | 63.3 | | 23-157 | |
| 2-Methyl-4,6-dinitrophenol, Water | 4.51988 | | 5.000000 | | 90.4 | | 17-164 | |
| 4-Nitrophenol, Water | 2.85550 | | 5.000000 | | 57.1 | | 10-92 | |
| Pentachlorophenol, Water | 4.11626 | | 5.000000 | | 82.3 | | 10-130 | |
| Phenol, Water | 1.92976 | | 5.000000 | | 38.6 | | 20-83 | |

| MB | Method Blank | SVS030402B | 47449 | | 03/19/2002 | 0928 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 0 | | | | | | | |
| Acenaphthylene, Water | 0 | | | | | | | |
| Anthracene, Water | 0 | | | | | | | |
| Benzo(a)anthracene, Water | 0 | | | | | | | |
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Bis(2-chloroethoxy)methane, Water | 0 | | | | | | | |
| Bis(2-ethylhexyl)phthalate, Water | 0.30084 | | | | | | | |
| 2-Chloronaphthalene, Water | 0 | | | | | | | |
| Chrysene, Water | 0 | | | | | | | |
| Dibenzofuran, Water | 0 | | | | | | | |
| Di-n-butyl Phthalate, Water | 0.17222 | | | | | | | |
| 2,4-Dinitrotoluene, Water | 0 | | | | | | | |
| 2,6-Dinitrotoluene, Water | 0 | | | | | | | |
| Fluoranthene, Water | 0 | | | | | | | |
| Fluorene, Water | 0 | | | | | | | |
| 2-Methylnaphthalene, Water | 0 | | | | | | | |
| Naphthalene, Water | 0 | | | | | | | |
| Nitrobenzene, Water | 0 | | | | | | | |
| n-Nitrosodiphenylamine, Water | 0 | | | | | | | |
| Phenanthrene, Water | 0 | | | | | | | |
| Pyrene, Water | 0 | | | | | | | |
| 2,4-Dimethylphenol, Water | 0 | | | | | | | |



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

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# QUALITY CONTROL RESULTS

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | SVS030402B | 47449 | | 03/19/2002 | 0928 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| 2-Methyl-4,6-dinitrophenol, Water | 0 | | | | | | | |
| 4-Nitrophenol, Water | 0 | | | | | | | |
| Pentachlorophenol, Water | 0 | | | | | | | |
| Phenol, Water | 0 | | | | | | | |
| 1,2-Diphenylhydrazine, Water | 0 | | | | | | | |

| SB | Spiked Blank | SVS012802C | 47449 | | 03/19/2002 | 0957 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 4.39899 | | 5.000000 | 0 | 88 | | 46-118 | |
| 2,4-Dinitrotoluene, Water | 4.92770 | | 5.000000 | 0 | 99 | | 24-96 | |
| Pyrene, Water | 5.16624 | | 5.000000 | 0 | 103 | | 26-127 | |
| 4-Nitrophenol, Water | 3.78891 | | 10.000000 | 0 | 38 | | 10-80 | |
| Pentachlorophenol, Water | 8.10271 | | 10.000000 | 0 | 81 | | 9-103 | |
| Phenol, Water | 3.76948 | | 10.000000 | 0 | 38 | | 10-112 | |

| SBD | Spiked Blank Duplicate | SVS012802C | 47449 | | 03/19/2002 | 1025 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 4.48803 | 4.39899 | 5.000000 | 0 | 89.8 | | 46-118 | |
| | | | | | 2.0 | | 31 | |
| 2,4-Dinitrotoluene, Water | 4.99689 | 4.92770 | 5.000000 | 0 | 99.9 | | 24-96 | |
| | | | | | 1.4 | | 38 | |
| Pyrene, Water | 5.12500 | 5.16624 | 5.000000 | 0 | 102.5 | | 26-127 | |
| | | | | | 0.8 | | 31 | |
| 4-Nitrophenol, Water | 3.67538 | 3.78891 | 10.000000 | 0 | 36.8 | | 10-80 | |
| | | | | | 3.0 | | 50 | |
| Pentachlorophenol, Water | 7.77424 | 8.10271 | 10.000000 | 0 | 77.7 | | 9-103 | |
| | | | | | 4.1 | | 50 | |
| Phenol, Water | 3.42294 | 3.76948 | 10.000000 | 0 | 34.2 | | 10-112 | |
| | | | | | 9.6 | | 23 | |

Test Method.....: SW-846 8260B Units.....: ug/L Analyst...: zfl
Method Description.: Volatile Organics Batch(s)...: 47613

| LCS | Laboratory Control Sample | VS030602E | 47613-1 | | 03/18/2002 | 1059 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 51.7188 | | 50.00 | ND | 103.4 | | 68-127 | |
| Bromodichloromethane, Water | 53.0845 | | 50.00 | ND | 106.2 | | 64-129 | |
| Bromoform, Water | 44.1652 | | 50.00 | ND | 88.3 | | 45-147 | |
| Bromomethane, Water | 43.3949 | | 50.00 | ND | 86.8 | | 32-143 | |
| Carbon Tetrachloride, Water | 48.4201 | | 50.00 | ND | 96.8 | | 54-140 | |
| Chlorobenzene, Water | 51.2858 | | 50.00 | ND | 102.6 | | 65-129 | |
| Chloroethane, Water | 59.9471 | | 50.00 | ND | 119.9 | | 47-157 | |
| Chloroform, Water | 53.6614 | | 50.00 | ND | 107.3 | | 71-131 | |
| Chloromethane, Water | 54.8886 | | 50.00 | ND | 109.8 | | 22-160 | |



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# QUALITY CONTROL RESULTS

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date Time |
|---|---|---|---|---|---|
| LCS | Laboratory Control Sample | VS030602E | 47613-1 | | 03/18/2002 1059 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Dibromochloromethane, Water | 50.0799 | | 50.00 | ND | 100.2 | | 64-131 | |
| 1,2-Dichlorobenzene, Water | 47.9631 | | 50.00 | ND | 95.9 | | 59-133 | |
| 1,3-Dichlorobenzene, Water | 50.8372 | | 50.00 | ND | 101.7 | | 61-132 | |
| 1,4-Dichlorobenzene, Water | 50.3182 | | 50.00 | ND | 100.6 | | 46-142 | |
| 1,1-Dichloroethane, Water | 51.7606 | | 50.00 | ND | 103.5 | | 62-138 | |
| 1,2-Dichloroethane, Water | 51.2234 | | 50.00 | ND | 102.4 | | 65-133 | |
| 1,1-Dichloroethene, Water | 50.4440 | | 50.00 | ND | 100.9 | | 48-147 | |
| cis-1,2-Dichloroethene, Water | 48.1234 | | 50.00 | ND | 96.2 | | 61-129 | |
| trans-1,2-Dichloroethene, Water | 48.4323 | | 50.00 | ND | 96.9 | | 73-138 | |
| 1,2-Dichloropropane, Water | 53.6369 | | 50.00 | ND | 107.3 | | 60-124 | |
| Ethylbenzene, Water | 52.3126 | | 50.00 | ND | 104.6 | | 64-132 | |
| Methylene Chloride, Water | 52.0470 | | 50.00 | ND | 104.1 | | 54-133 | |
| Styrene, Water | 46.6702 | | 50.00 | ND | 93.3 | | 20-156 | |
| 1,1,2,2-Tetrachloroethane, Water | 46.0492 | | 50.00 | ND | 92.1 | | 70-130 | |
| Tetrachloroethene, Water | 48.5459 | | 50.00 | ND | 97.1 | | 59-134 | |
| Toluene, Water | 52.3324 | | 50.00 | ND | 104.7 | | 63-127 | |
| 1,1,1-Trichloroethane, Water | 49.7451 | | 50.00 | ND | 99.5 | | 70-130 | |
| 1,1,2-Trichloroethane, Water | 50.7641 | | 50.00 | ND | 101.5 | | 70-130 | |
| Trichloroethene, Water | 46.2419 | | 50.00 | ND | 92.5 | | 64-130 | |
| Vinyl Chloride, Water | 57.3843 | | 50.00 | ND | 114.8 | | 35-155 | |
| Xylenes (total), Water | 156.329 | | 150.00 | ND | 104.2 | | 37-161 | |
| m,p-Xylene, Water | 104.137 | | 100.00 | ND | 104.1 | | 37-160 | |
| o-Xylene, Water | 52.1918 | | 50.00 | ND | 104.4 | | 37-161 | |
| Acetone, Water | 43.2025 | | 50.00 | ND | 86.4 | | 38-190 | |
| Carbon Disulfide, Water | 62.6274 | | 50.00 | ND | 125.3 | | 68-158 | |
| Methyl Ethyl Ketone (2-Butanone), Water | 55.0253 | | 50.00 | ND | 110.1 | | 38-186 | |
| cis-1,3-Dichloropropene, Water | 55.9450 | | 50.00 | ND | 111.9 | | 66-130 | |
| trans-1,3-Dichloropropene, Water | 53.1086 | | 50.00 | ND | 106.2 | | 71-139 | |
| 2-Hexanone, Water | 58.5198 | | 50.00 | ND | 117.0 | | 29-173 | |
| 4-Methyl-2-pentanone (MIBK), Water | 55.2729 | | 50.00 | ND | 110.5 | | 40-144 | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date Time |
|---|---|---|---|---|---|
| LCS | Laboratory Control Sample | VS030602E | 47613-2 | | 03/19/2002 1231 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 47.0552 | | 50.00 | ND | 94.1 | | 68-127 | |
| Bromodichloromethane, Water | 49.2582 | | 50.00 | ND | 98.5 | | 64-129 | |
| Bromoform, Water | 42.6126 | | 50.00 | ND | 85.2 | | 45-147 | |
| Bromomethane, Water | 36.7453 | | 50.00 | ND | 73.5 | | 32-143 | |
| Carbon Tetrachloride, Water | 42.0715 | | 50.00 | ND | 84.1 | | 54-140 | |
| Chlorobenzene, Water | 47.7386 | | 50.00 | ND | 95.5 | | 65-129 | |
| Chloroethane, Water | 53.2229 | | 50.00 | ND | 106.4 | | 47-157 | |
| Chloroform, Water | 49.8934 | | 50.00 | ND | 99.8 | | 71-131 | |
| Chloromethane, Water | 50.0564 | | 50.00 | ND | 100.1 | | 22-160 | |
| Dibromochloromethane, Water | 52.6180 | | 50.00 | ND | 105.2 | | 64-131 | |
| 1,2-Dichlorobenzene, Water | 44.9406 | | 50.00 | ND | 89.9 | | 59-133 | |
| 1,3-Dichlorobenzene, Water | 47.9109 | | 50.00 | ND | 95.8 | | 61-132 | |
| 1,4-Dichlorobenzene, Water | 47.4459 | | 50.00 | ND | 94.9 | | 46-142 | |
| 1,1-Dichloroethane, Water | 47.3817 | | 50.00 | ND | 94.8 | | 62-138 | |
| 1,2-Dichloroethane, Water | 49.8907 | | 50.00 | ND | 99.8 | | 65-133 | |
| 1,1-Dichloroethene, Water | 44.7800 | | 50.00 | ND | 89.6 | | 48-147 | |
| cis-1,2-Dichloroethene, Water | 47.2137 | | 50.00 | ND | 94.4 | | 61-129 | |
| trans-1,2-Dichloroethene, Water | 45.3911 | | 50.00 | ND | 90.8 | | 73-138 | |



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

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# QUALITY CONTROL RESULTS

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| LCS | Laboratory Control Sample | VS030602E | 47613-2 | | 03/19/2002 | 1231 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloropropane, Water | 49.8474 | | 50.00 | ND | 99.7 | | 60-124 | |
| Ethylbenzene, Water | 46.4224 | | 50.00 | ND | 92.8 | | 64-132 | |
| Methylene Chloride, Water | 54.1394 | | 50.00 | 4.68035 | 108.3 | | 54-133 | |
| Styrene, Water | 44.8626 | | 50.00 | ND | 89.7 | | 20-156 | |
| 1,1,2,2-Tetrachloroethane, Water | 44.0968 | | 50.00 | ND | 88.2 | | 70-130 | |
| Tetrachloroethene, Water | 44.1119 | | 50.00 | ND | 88.2 | | 59-134 | |
| Toluene, Water | 47.2264 | | 50.00 | ND | 94.5 | | 63-127 | |
| 1,1,1-Trichloroethane, Water | 45.9257 | | 50.00 | ND | 91.9 | | 70-130 | |
| 1,1,2-Trichloroethane, Water | 52.5272 | | 50.00 | ND | 105.1 | | 70-130 | |
| Trichloroethene, Water | 43.2680 | | 50.00 | ND | 86.5 | | 64-130 | |
| Vinyl Chloride, Water | 49.5368 | | 50.00 | ND | 99.1 | | 35-155 | |
| Xylenes (total), Water | 140.389 | | 150.00 | ND | 93.6 | | 37-161 | |
| m,p-Xylene, Water | 92.5890 | | 100.00 | ND | 92.6 | | 37-160 | |
| o-Xylene, Water | 47.7999 | | 50.00 | ND | 95.6 | | 37-161 | |
| Acetone, Water | 49.8162 | | 50.00 | ND | 99.6 | | 38-190 | |
| Carbon Disulfide, Water | 56.2224 | | 50.00 | ND | 112.4 | | 68-158 | |
| Methyl Ethyl Ketone (2-Butanone), Water | 52.0491 | | 50.00 | ND | 104.1 | | 38-186 | |
| cis-1,3-Dichloropropene, Water | 60.2330 | | 50.00 | ND | 120.5 | | 66-130 | |
| trans-1,3-Dichloropropene, Water | 55.0910 | | 50.00 | ND | 110.2 | | 71-139 | |
| 2-Hexanone, Water | 57.2001 | | 50.00 | ND | 114.4 | | 29-173 | |
| 4-Methyl-2-pentanone (MIBK), Water | 56.5157 | | 50.00 | ND | 113.0 | | 40-144 | |

| MB | Method Blank | VS030602C | 47613-1 | | 03/18/2002 | 1217 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | ND | | | | | | | |
| Bromodichloromethane, Water | ND | | | | | | | |
| Bromoform, Water | ND | | | | | | | |
| Bromomethane, Water | ND | | | | | | | |
| Carbon Tetrachloride, Water | ND | | | | | | | |
| Chlorobenzene, Water | ND | | | | | | | |
| Chloroethane, Water | ND | | | | | | | |
| Chloroform, Water | ND | | | | | | | |
| Chloromethane, Water | ND | | | | | | | |
| Dibromochloromethane, Water | ND | | | | | | | |
| 1,2-Dichlorobenzene, Water | ND | | | | | | | |
| 1,3-Dichlorobenzene, Water | ND | | | | | | | |
| 1,4-Dichlorobenzene, Water | ND | | | | | | | |
| 1,1-Dichloroethane, Water | ND | | | | | | | |
| 1,2-Dichloroethane, Water | ND | | | | | | | |
| 1,1-Dichloroethene, Water | ND | | | | | | | |
| cis-1,2-Dichloroethene, Water | ND | | | | | | | |
| trans-1,2-Dichloroethene, Water | ND | | | | | | | |
| 1,2-Dichloropropane, Water | ND | | | | | | | |
| Ethylbenzene, Water | ND | | | | | | | |
| Methylene Chloride, Water | ND | | | | | | | |
| Styrene, Water | ND | | | | | | | |
| 1,1,2,2-Tetrachloroethane, Water | ND | | | | | | | |
| Tetrachloroethene, Water | ND | | | | | | | |
| Toluene, Water | ND | | | | | | | |
| 1,1,1-Trichloroethane, Water | ND | | | | | | | |
| 1,1,2-Trichloroethane, Water | ND | | | | | | | |



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

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QUALITY CONTROL RESULTS

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | VS030602C | 47613-1 | | 03/18/2002 | 1217 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Trichloroethene, Water | ND | | | | | | | |
| Vinyl Chloride, Water | ND | | | | | | | |
| Xylenes (total), Water | ND | | | | | | | |
| m,p-Xylene, Water | ND | | | | | | | |
| o-Xylene, Water | ND | | | | | | | |
| Acetone, Water | ND | | | | | | | |
| Carbon Disulfide, Water | ND | | | | | | | |
| Methyl Ethyl Ketone (2-Butanone), Water | ND | | | | | | | |
| cis-1,3-Dichloropropene, Water | ND | | | | | | | |
| trans-1,3-Dichloropropene, Water | ND | | | | | | | |
| 2-Hexanone, Water | ND | | | | | | | |
| 4-Methyl-2-pentanone (MIBK), Water | ND | | | | | | | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | VS030602C | 47613-2 | | 03/19/2002 | 1416 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | ND | | | | | | | |
| Bromodichloromethane, Water | ND | | | | | | | |
| Bromoform, Water | ND | | | | | | | |
| Bromomethane, Water | ND | | | | | | | |
| Carbon Tetrachloride, Water | ND | | | | | | | |
| Chlorobenzene, Water | ND | | | | | | | |
| Chloroethane, Water | ND | | | | | | | |
| Chloroform, Water | ND | | | | | | | |
| Chloromethane, Water | ND | | | | | | | |
| Dibromochloromethane, Water | ND | | | | | | | |
| 1,2-Dichlorobenzene, Water | ND | | | | | | | |
| 1,3-Dichlorobenzene, Water | ND | | | | | | | |
| 1,4-Dichlorobenzene, Water | ND | | | | | | | |
| 1,1-Dichloroethane, Water | ND | | | | | | | |
| 1,2-Dichloroethane, Water | ND | | | | | | | |
| 1,1-Dichloroethene, Water | ND | | | | | | | |
| cis-1,2-Dichloroethene, Water | ND | | | | | | | |
| trans-1,2-Dichloroethene, Water | ND | | | | | | | |
| 1,2-Dichloropropane, Water | ND | | | | | | | |
| Ethylbenzene, Water | ND | | | | | | | |
| Methylene Chloride, Water | 4.68035 | | | | | | | |
| Styrene, Water | ND | | | | | | | |
| 1,1,2,2-Tetrachloroethane, Water | ND | | | | | | | |
| Tetrachloroethene, Water | ND | | | | | | | |
| Toluene, Water | ND | | | | | | | |
| 1,1,1-Trichloroethane, Water | ND | | | | | | | |
| 1,1,2-Trichloroethane, Water | ND | | | | | | | |
| Trichloroethene, Water | ND | | | | | | | |
| Vinyl Chloride, Water | ND | | | | | | | |
| Xylenes (total), Water | ND | | | | | | | |
| m,p-Xylene, Water | ND | | | | | | | |
| o-Xylene, Water | ND | | | | | | | |
| Acetone, Water | ND | | | | | | | |
| Carbon Disulfide, Water | ND | | | | | | | |
| Methyl Ethyl Ketone (2-Butanone), Water | ND | | | | | | | |
| cis-1,3-Dichloropropene, Water | ND | | | | | | | |



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

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# QUALITY CONTROL RESULTS

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | VS030602C | 47613-2 | | 03/19/2002 | 1416 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| trans-1,3-Dichloropropene, Water | ND | | | | | | | |
| 2-Hexanone, Water | ND | | | | | | | |
| 4-Methyl-2-pentanone (MIBK), Water | ND | | | | | | | |

| MS | Matrix Spike | VS030602F | 232487-5 | | 03/18/2002 | 1520 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 41.9925 | | 50.00 | ND | 84 | | 65-125 | |
| Chlorobenzene, Water | 45.6786 | | 50.00 | ND | 91 | | 74-122 | |
| 1,1-Dichloroethene, Water | 31.5402 | | 50.00 | ND | 63 | | 22-123 | |
| Toluene, Water | 44.5013 | | 50.00 | ND | 89 | | 76-125 | |
| Trichloroethene, Water | 37.8521 | | 50.00 | ND | 76 | | 56-118 | |

| MS | Matrix Spike | VS030602F | 232425-6 | | 03/19/2002 | 1627 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 43.5771 | | 50.00 | ND | 87 | | 65-125 | |
| Chlorobenzene, Water | 47.3365 | | 50.00 | ND | 95 | | 74-122 | |
| 1,1-Dichloroethene, Water | 33.5312 | | 50.00 | ND | 67 | | 22-123 | |
| Toluene, Water | 46.6666 | | 50.00 | ND | 93 | | 76-125 | |
| Trichloroethene, Water | 39.8017 | | 50.00 | ND | 80 | | 56-118 | |

| MSD | Matrix Spike Duplicate | VS030602F | 232487-5 | | 03/18/2002 | 1546 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 40.7438 | 41.9925 | 50.00 | ND | 81 | | 65-125 | |
| | | | | | 3.0 | | 30.0 | |
| Chlorobenzene, Water | 44.4939 | 45.6786 | 50.00 | ND | 89 | | 74-122 | |
| | | | | | 2.6 | | 30.0 | |
| 1,1-Dichloroethene, Water | 32.4002 | 31.5402 | 50.00 | ND | 65 | | 22-123 | |
| | | | | | 2.7 | | 30.0 | |
| Toluene, Water | 44.5519 | 44.5013 | 50.00 | ND | 89 | | 76-125 | |
| | | | | | 0.1 | | 30.0 | |
| Trichloroethene, Water | 37.3498 | 37.8521 | 50.00 | ND | 75 | | 56-118 | |
| | | | | | 1.3 | | 30.0 | |

| MSD | Matrix Spike Duplicate | VS030602F | 232425-6 | | 03/19/2002 | 1653 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 45.1138 | 43.5771 | 50.00 | ND | 90 | | 65-125 | |
| | | | | | 3.5 | | 30.0 | |
| Chlorobenzene, Water | 47.7831 | 47.3365 | 50.00 | ND | 96 | | 74-122 | |
| | | | | | 0.9 | | 30.0 | |
| 1,1-Dichloroethene, Water | 36.2414 | 33.5312 | 50.00 | ND | 72 | | 22-123 | |
| | | | | | 7.8 | | 30.0 | |
| Toluene, Water | 47.8885 | 46.6666 | 50.00 | ND | 96 | | 76-125 | |
| | | | | | 2.6 | | 30.0 | |



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



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QUALITY CONTROL RESULTS

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MSD | Matrix Spike Duplicate | VS030602F | 232425-6 | | 03/19/2002 | 1653 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Trichloroethene, Water | 42.3013 | 39.8017 | 50.00 | ND | 85 | | 56-118 | |
| | | | | | 6.1 | | 30.0 | |



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

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# SURROGATE RECOVERIES REPORT

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Method.....: Volatile Organics Method Code...: 8260 Prep Batch....:
Batch(s).....: 47613 Test Matrix...: Water Equipment Code: GCMSVOA04

| Lab ID | DT | Sample ID | Date | 12DCED | BRFLBE | DBRFLM | TOLD8 |
|---|---|---|---|---|---|---|---|
| 47613- 1 | LCS | | 03/18/2002 | 103.9 | 104.2 | 97.1 | 94.8 |
| 47613- 1 | MB | | 03/18/2002 | 107.2 | 103.9 | 102.4 | 104.8 |
| 47613- 2 | LCS | | 03/19/2002 | 104.4 | 94.8 | 104.2 | 104.0 |
| 47613- 2 | MB | | 03/19/2002 | 103.3 | 97.4 | 98.6 | 94.1 |
| 232425- 1 | | MW11B-1SA02 | 03/19/2002 | 107.4 | 102.0 | 101.9 | 101.0 |
| 232425- 2 | | FB031402-1SA02 | 03/19/2002 | 101.8 | 99.4 | 98.5 | 101.7 |
| 232425- 3 | | MW09-1SA02 | 03/18/2002 | 110.5 | 125.7 | 104.0 | 107.8 |
| 232425- 4 | | P12-1SA02 | 03/18/2002 | 104.0 | 116.3 | 98.8 | 105.6 |
| 232425- 5 | | MW05-1SA02 | 03/18/2002 | 108.2 | 127.2 | 107.7 | 107.8 |
| 232425- 6 | | P11-1SA02 | 03/19/2002 | 108.0 | 106.6 | 105.4 | 104.2 |
| 232425- 6 | MS | P11-1SA02 | 03/19/2002 | 108.4 | 104.0 | 103.9 | 101.1 |
| 232425- 6 | MSD | P11-1SA02 | 03/19/2002 | 105.7 | 102.2 | 102.4 | 102.4 |
| 232425- 7 | | TB031402-1SA02 | 03/19/2002 | 104.6 | 99.0 | 97.1 | 96.5 |
| 232487- 5 | MS | STREAM-5C | 03/18/2002 | 106.4 | 101.6 | 102.9 | 101.1 |
| 232487- 5 | MSD | STREAM-5C | 03/18/2002 | 100.6 | 93.1 | 97.4 | 98.5 |

| Test | Test Description | Limits |
|---|---|---|
| 12DCED | 1,2-Dichloroethane-d4 | 70 - 130 |
| BRFLBE | 4-Bromofluorobenzene | 70 - 130 |
| DBRFLM | Dibromofluoromethane | 70 - 130 |
| TOLD8 | Toluene-d8 | 70 - 130 |

27



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SURROGATE RECOVERIES REPORT

Job Number.: 232425 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Method.....: Semivolatile Organics, Low Level Method Code...: 8270LL Prep Batch....: 47449
Batch(s).....: 48064 Test Matrix...: Water Equipment Code: EGCMS07

| Lab ID | DT | Sample ID | Date | 246TBP | 2FLUBP | 2FLUPH | NITRD5 | PHEND6 | TERD14 |
|---|---|---|---|---|---|---|---|---|---|
| LCS | | | 03/19/2002 | 93 | 87 | 62 | 89 | 36 | 82 |
| MB | | | 03/19/2002 | 91 | 84 | 57 | 91 | 35 | 81 |
| SB | | | 03/19/2002 | 95 | 89 | 64 | 93 | 39 | 85 |
| SBD | | | 03/19/2002 | 88 | 83 | 59 | 86 | 35 | 80 |
| 232425- 1 | | MW11B-1SA02 | 03/19/2002 | 97 | 86 | 53 | 84 | 32 | 50 |
| 232425- 1 | | MW11B-1SA02 | 03/20/2002 | 135D | 117D | 44 | 101 | 36 | 74 |
| 232425- 3 | | MW09-1SA02 | 03/19/2002 | 96 | 85 | 48 | 87 | 32 | 59 |
| 232425- 4 | | P12-1SA02 | 03/19/2002 | 89 | 81 | 46 | 80 | 30 | 68 |
| 232425- 5 | | MW05-1SA02 | 03/19/2002 | 90 | 83 | 47 | 88 | 31 | 48 |
| 232425- 6 | | P11-1SA02 | 03/19/2002 | 88 | 74 | 47 | 74 | 30 | 55 |

| Test | Test Description | Limits |
|---|---|---|
| 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 |

Method.....: Semivolatile Organics, Low Level Method Code...: 8270LL Prep Batch....: 47797
Batch(s).....: 47867 48064 Test Matrix...: Water Equipment Code: EGCMS07

| Lab ID | DT | Sample ID | Date | 246TBP | 2FLUBP | 2FLUPH | NITRD5 | PHEND6 | TERD14 |
|---|---|---|---|---|---|---|---|---|---|
| LCS | | | 03/22/2002 | 92 | 95 | 59 | 102 | 40 | 88 |
| MB | | | 03/22/2002 | 100 | 95 | 53 | 95 | 36 | 89 |
| PB | | | 03/22/2002 | 92 | 91 | 59 | 99 | 36 | 82 |
| SB | | | 03/22/2002 | 91 | 86 | 59 | 92 | 36 | 78 |
| SBD | | | 03/22/2002 | 90 | 88 | 62 | 93 | 38 | 86 |
| 232425- 2 | | FB031402-1SA02 | 03/22/2002 | 97 | 90 | 45 | 92 | 32 | 80 |

| Test | Test Description | Limits |
|---|---|---|
| 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 |



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# QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 04/10/2002

### 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.

General Information:

- Cresylic Acid is the combination of o,m and p-Cresol. The combination is reportesd 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, maybe detected as diphenylamine.

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.
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.
O - Sample required dilution due to matrix interference.
D - Sample reported from a dilution.
d - Spike and/or surrogate diluted out.
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.
CC - Continuing Calibration Verification (CCV) standard is not associated with the samples reported.
M1 - 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.
K1 - See case narrative.



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# QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 04/10/2002

Explanation of Organic QC Outliers:

E - Method blank analysis yielded methylene chloride and/or acetone concentrations above the RL. 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.
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.
N1 - Gaseous compound. In-house QC limits are advisory.
P1 - Ketone compounds have poor purge efficiency. In-house QC limits are advisory.
S1 - Surrogate not associated with reported analytes.

Explanation of Inorganic QC Outliers:

b - Target analyte was found in the method blank. This analyte was not detected above the RL in the sample.
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.
3a - 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.
S - 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 - 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.

Abbreviations:

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



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# QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 04/10/2002

ND - Not Detected
PB - Preparation Blank
PREPF - Preparation factor
RPD - Relative Percent Difference
RRF - Relative Response Factor
RT - Retention Time

Method References:

(1) EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.
(2) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1193; Update IIB, January 1995; Update III, December 1996.
(3) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989),
(4) HACH Water Analysis Handbook 3rd Edition (1997).
(5) Federal Register, July 1, 1990 (40 CFR Part 136).
(6) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.
(7) ASTM Annual Book of Methods (Various Years)
(8) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.



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# LABORATORY CHRONICLE

Job Number: 232425 Date: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Lab ID: 232425-1 Client ID: MW11B-1SA02 Date Recvd: 03/15/2002 Sample Date: 03/14/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| | Data Package Validataion | 1 | 48877 | | 04/10/2002 | 0000 | |
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47449 | | 03/15/2002 | 1000 | |
| | GC/MS Semi-Volatile Package Production | 1 | 48821 | | | | |
| | GC/MS Volatiles Data Package Production | 1 | 47846 | | 03/22/2002 | 1700 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 48062 | 47449 | 03/19/2002 | 1358 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 48064 | 47449 | 03/19/2002 | 1123 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 48064 | 47449 | 03/20/2002 | 1704 | 5.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47613 | | 03/19/2002 | 1720 | 1.00000 |

Lab ID: 232425-2 Client ID: FB031402-1SA02 Date Recvd: 03/15/2002 Sample Date: 03/14/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47797 | | 03/21/2002 | 1000 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 48062 | 47797 | 03/22/2002 | 1635 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 48064 | 47797 | 03/22/2002 | 1451 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47613 | | 03/19/2002 | 1509 | 1.00000 |

Lab ID: 232425-3 Client ID: MW09-1SA02 Date Recvd: 03/15/2002 Sample Date: 03/14/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47449 | | 03/15/2002 | 1000 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 48062 | 47449 | 03/19/2002 | 1452 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 48064 | 47449 | 03/19/2002 | 1220 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47613 | | 03/18/2002 | 2007 | 1.00000 |

Lab ID: 232425-4 Client ID: P12-1SA02 Date Recvd: 03/15/2002 Sample Date: 03/14/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47449 | | 03/15/2002 | 1000 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 48062 | 47449 | 03/19/2002 | 1520 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 48064 | 47449 | 03/19/2002 | 1249 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47613 | | 03/18/2002 | 2033 | 1.00000 |

Lab ID: 232425-5 Client ID: MW05-1SA02 Date Recvd: 03/15/2002 Sample Date: 03/14/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47449 | | 03/15/2002 | 1000 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 48062 | 47449 | 03/19/2002 | 1548 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 48064 | 47449 | 03/19/2002 | 1319 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47613 | | 03/18/2002 | 2059 | 1.00000 |

Lab ID: 232425-6 Client ID: P11-1SA02 Date Recvd: 03/15/2002 Sample Date: 03/14/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47449 | | 03/15/2002 | 1000 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 48062 | 47449 | 03/19/2002 | 1615 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 48064 | 47449 | 03/19/2002 | 1348 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47613 | | 03/19/2002 | 1601 | 1.00000 |

Lab ID: 232425-7 Client ID: TB031402-1SA02 Date Recvd: 03/15/2002 Sample Date: 03/14/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 8260B | Volatile Organics | 1 | 47613 | | 03/19/2002 | 1535 | 1.00000 |



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**Request for Analysis**

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| Reports Sent To: CHRIS YOUNG | P O #: | Project #: 422-102-60 |
| Project Name: UPRR: FIRST SEMIANNUAL | Project Location: HWPW IMPOUNDMENT | |
| Sampler(s) Name: (Signature) TRISTRAM DODDS | | |
| Courier: | | |

| ❷ Field Sample ID | ❸ Sampling Date | Time | ❹ Matrix Water | Soil | Sludge | Oil | Other | # of Containers | Haz. Sample (Y/N) | 8260 B - VOCs | 8270 C - Low Level | 8270 C - SIM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW11B-1SA02 | 03/14/02 | 0829 | X | | | | | 5 | 2 | X | X | X |
| 2. FB031402-1SA02 | 03/14/02 | 0827 | X | | | | | 5 | 2 | X | X | X |
| 3. MW09-1SA02 | 03/14/02 | 0845 | X | | | | | 15 | 2 | X | X | X |
| 4. PIZA-1SA02 | 03/14/02 | 1010 | X | | | | | 5 | 2 | X | X | X |
| 5. MW05-1SA02 | 03/14/02 | 1120 | X | | | | | 5 | 2 | X | X | X |
| 6. P11-1SA02 | 03/14/02 | 1309 | X | | | | | 5 | 2 | X | X | X |
| 7. TB031402-1SA02 | 03/14/02 | | X | | | | | 2 | 2 | X | | |
| 8. ~~MW10-0FF~~ T.D. | ~~03/14/02~~ | 1449 | X | | | | | ~~5~~ 4 | 2 | ~~X~~ | ~~X~~ | ~~X~~ |
| 9. | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | |
| 11. | | | | | | | | | | | | |
| 12. | | | | | | | | | | | | |
| 13. | | | | | | | | | | | | |

| Relinquished by: (Signature) | Relinquished by: (Signature) | ❼ Relinquished by Sampler: (Signature) |
|---|---|---|
| Date: 03/14/02 | Date: | Date: |
| Time: 1830 | Time: | Time: |
| Received by Laboratory: (Signature) | Received by: (Signature) | Received by: (Signature) |
| Date: 3/15/02 | Date: | Date: |
| Time: 0830 | Time: | Time: |

❻ Remarks: 33

Requested Turnaround: STANDARD

GSAI Group: 232425

Special Detection Limits: SEE PROJECT REQUIREMENTS

QC Package: (check one)
☐ CLP ☐ Site Specific
☐ Tier 1 ☐ Tier 2 ☐ QC Summary

White Copy to Accompany Samples to Lab — Yellow Copy Retained by Client — Pink Copy Retained by Sampler

rpjsckl | Job Sample Receipt Checklist Report | V2

Job Number.: 232425 Location.: 57216 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: 03/15/2002 Date of the Report..: 03/15/2002
Project Number.: 99000484 Project Description.: UPRR-HWPW Project Manager.....: sgk
Customer.....: ERM Southwest, Inc.- Houston Contact.: Peter Gagnon

| Questions ? | (Y/N) | Comments |
|---|---|---|
| Chain of Custody Received? | Y | |
| ...If "yes", completed properly? | Y | |
| Custody seal on shipping container? | Y | |
| ...If "yes", custody seal intact? | Y | |
| Custody seals on sample containers? | N | |
| ...If "yes", custody seal intact? | N | |
| Samples chilled? | Y | |
| Temperature of cooler acceptable? (4 deg C +/- 2). | Y | 2.2,1.8,1.3,2.1,1.7 c |
| Thermometer ID | Y | 337 |
| Samples received intact (good condition)? | Y | |
| Volatile samples acceptable? (no headspace) | Y | |
| Correct containers used? | Y | |
| Adequate sample volume provided? | Y | |
| Samples preserved correctly? | Y | |
| Samples received within holding-time? | Y | |
| Agreement between COC and sample labels? | Y | |
| Radioactivity at or below background levels? | Y | |
| Additional | | |
| Comments | | |
| Sample Custodian Signature/Date | Y | lan |

3-15-02

STL HOUSTON
SAMPLE RECEIPT CHECKLIST

CLIENT ERMSW CONTACT Chris Young
PROJECT UPRR First Semi. CARRIER STL
DATE SHIPPED 3-14-02 UNPACKED BY JB
DATE RECEIVED 2002 MAR 15 AM 9:09 UNPACKED STAMP 2002 MAR 15 AM 9:56
NUMBER OF KITS RECEIVED 5 JOB# 282425

KIT CHECKLIST

| KIT ID | COC PRESENT | CUSTODY TAPE | | COOLER TEMP Thermometer # 337 | # OF SAMPLE CONTAINERS |
|---|---|---|---|---|---|
| | | PRESENT? | INTACT? | | |
| R/W 484 | Y | C Y<br>B NO | Y<br>NO | 2.2 | 27 |
| R/W 612 | Y | C Y<br>B NO | Y<br>NO | 1.8 | 37 |
| White 284 | Y | C Y<br>B NO | Y<br>NO | 1.3 | 10 |

C = COOLER B = BOTTLES

SAMPLE CHECKS

pH OF WATER SAMPLES CHECKED? Yes ✓ No ___ SAMPLE(S) SCREENED FOR RADIATION? Yes ✓ No ___

VOLATILE HEAD SPACE CHECKED? Yes ✓ No ___

SHORT HOLD / RUSH SAMPLES (include department delivered to and time delivered)

INCONSISTENCIES

ACTION TAKEN

PERSON CONTACTED: ___ DATE: ___
RESOLUTION ___

EMPLOYEE ___ DATE: ___

☐ $HNO_3$ ☐ HCl ☐ $H_2SO_4$ ☐ NaOH ☐ $Na_2S_2O_3$ ☐ NEAT ☐ $NaHSO_4$ ☐ OT/PRE
(Water Only)
20 VOA ___ VOA
___ Other ___ Other
20 12

| # Cont. | Matrix |
|---|---|
| 32 | WA |
| | |
| | |
| Total 32 | WA |

NOTES ___

Project Manager ___



SA 152, Rev 3 8/00

STL HOUSTON
SAMPLE RECEIPT CHECKLIST

CLIENT: ERM SW | CONTACT:
PROJECT: | CARRIER: STL
DATE SHIPPED: | UNPACKED BY: JB
DATE RECEIVED: 2002 MAR 15 AM 9:09 | UNPACKED STAMP: 2002 MAR 15 AM 9:56
NUMBER OF KITS RECEIVED: 5 | JOB#: | SDG#:

KIT CHECKLIST

| FED EX | COC PRESENT | CUSTODY TAPE | | COOLER TEMP Thermometer # 337 | # OF SAMPLE CONTAINERS |
|---|---|---|---|---|---|
| | | PRESENT? | INTACT? | | |
| R/L 456 | Y | C Y | Y | 2.1 | 10 |
| | | B NO | NO | | |
| B/L 331 | Y | C Y | Y | 1.7 | 10 |
| | | B NO | NO | | |
| | | C | | | |
| | | B | | | |

C = COOLER B = BOTTLES

SAMPLE CHECKS

pH OF WATER SAMPLES CHECKED? Yes Y No ___ SAMPLE(S) SCREENED FOR RADIATION? Yes Y No ___

VOLATILE HEAD SPACE CHECKED? Yes Y No ___

SHORT HOLD / RUSH SAMPLES (include department delivered to and time delivered)

INCONSISTENCIES

ACTION TAKEN

PERSON CONTACTED: DATE:
RESOLUTION

EMPLOYEE: DATE:

☐ HNO$_3$ ☐ HCL ☐ H$_2$SO$_4$ ☐ NaOH ☐ Na$_2$S$_2$O$_3$ ☐ NEAT ☐ NaHSO$_4$ ☐ OT/PRE.
(Water Only)

___VOA
___Other

___VOA
___Other

| # Cont. | Matrix |
|---|---|
| | |
| | |
| | |
| Total___ | |

NOTES

Project Manager

SEVERN TRENT SERVICES
STL Houston

# ANALYTICAL REPORT

JOB NUMBER: 232600

Prepared For:

ERM Southwest, Inc.- Houston
16300 Katy Freeway
Suite 300
Houston, TX 77094-1611

Attention: Chris Young

Date: 04/16/2002


Signature

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail: [redacted]

04/16/02
Date

Severn Trent Laboratories
6310 Rothway Drive
Houston, TX 77040

PHONE: (713) 690-4444


TOTAL NO. OF PAGES 20

SEVERN TRENT SERVICES
STL Houston

04/16/2002

Chris Young
ERM Southwest, Inc.- Houston
16300 Katy Freeway
Suite 300
Houston, TX 77094-1611

Reference:
Project : UPRR-HWPW
Project No. : 232600
Date Received : 03/19/2002
STL Job : 232600

Dear Chris Young:

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

1. MW01A-1SA02
2. TRIP BLANK

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 are noted in the case narrative. The case narrative is an integral 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



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STL Houston

## SAMPLE INFORMATION

Date: 04/16/2002

Job Number.: 232600
Customer...: ERM Southwest, Inc.- Houston
Attn.....: Chris Young

Project Number.....: 99000484
Customer Project ID....: UPRR-HWPW
Project Description....: UPRR-HWPW

| Laboratory Sample ID | Customer Sample ID | Sample Matrix | Date Sampled | Time Sampled | Date Received | Time Received |
|---|---|---|---|---|---|---|
| 232600-1 | MW01A-1SA02 | Water | 03/19/2002 | 09:35 | 03/19/2002 | 10:40 |
| 232600-2 | TRIP BLANK | Trip Blank | 03/19/2002 | 00:01 | 03/19/2002 | 10:40 |



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# LABORATORY TEST RESULTS

Job Number: 232600

Date:04/16/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW

ATTN: Chris Young

Customer Sample ID: MW01A-1SA02
Date Sampled.....: 03/19/2002
Time Sampled.....: 09:35
Sample Matrix.....: Water

Laboratory Sample ID: 232600-1
Date Received.....: 03/19/2002
Time Received.....: 10:40

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Data Package Validataion | | | | | | | | | | | |
| | GC/MS VOA Validation, Water | Complete | | | | | 1 | | 49249 | | 04/16/02 0000 | hms |
| | GC/MS SVOA Validation, Water | Complete | | | | | 1 | | 49249 | | 04/16/02 0000 | hms |
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47797 | | 03/21/02 1000 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47875 | | 03/22/02 1608 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47875 | | 03/22/02 1608 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 47875 | | 03/22/02 1608 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 47875 | | 03/22/02 1608 | lg1 |
| | Pentachlorophenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47875 | | 03/22/02 1608 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 47875 | | 03/22/02 1608 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 120 | | | 1 | 6 | 4.00000 | ug/L | 47867 | | 03/22/02 1648 | lg1 |
| | Acenaphthylene, Water | 3 | | | 0.2 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Anthracene, Water | 4 | | | 0.4 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.6 | J | | 0.5 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | 2-Chloronaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Chrysene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Dibenzofuran, Water | 65 | | | 1 | 6 | 4.00000 | ug/L | 47867 | | 03/22/02 1648 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.3 | J | | 0.4 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Fluoranthene, Water | 6 | | | 0.4 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Fluorene, Water | 70 | | | 1 | 6 | 4.00000 | ug/L | 47867 | | 03/22/02 1648 | lg1 |
| | 2-Methylnaphthalene, Water | 33 | | | 0.3 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Naphthalene, Water | 110 | | | 1 | 8 | 4.00000 | ug/L | 47867 | | 03/22/02 1648 | lg1 |

* In Description = Dry Wgt.



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# LABORATORY TEST RESULTS

Job Number: 232600

Date:04/16/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW

ATTN: Chris Young

Customer Sample ID: MW01A-1SA02
Date Sampled.....: 03/19/2002
Time Sampled.....: 09:35
Sample Matrix.....: Water

Laboratory Sample ID: 232600-1
Date Received.....: 03/19/2002
Time Received.....: 10:40

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nitrobenzene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | n-Nitrosodiphenylamine, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Phenanthrene, Water | 28 | | | 0.3 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Pyrene, Water | 3 | | | 0.3 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | 2,4-Dimethylphenol, Water | 2 | U | | 0.1 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | 4-Nitrophenol, Water | 7 | U | | 1 | 7 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| | Phenol, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 47867 | | 03/22/02 1353 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47655 | | 03/19/02 2241 | zfl |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47655 | | 03/19/02 2241 | zfl |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47655 | | 03/19/02 2241 | zfl |
| | Ethylbenzene, Water | 1 | J | | 2 | 5 | 1.00000 | ug/L | 47655 | | 03/19/02 2241 | zfl |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47655 | | 03/19/02 2241 | zfl |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47655 | | 03/19/02 2241 | zfl |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47655 | | 03/19/02 2241 | zfl |

* In Description = Dry Wgt.



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# QUALITY CONTROL RESULTS

Job Number.: 232600 Report Date.: 04/16/2002

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

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | SVS030402B | 47797 | | 03/22/2002 | 1540 |

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: lg1
Method Description.: Semivolatile Organics - SIM Analysis Batch(s)...: 47875

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Bis(2-chloroethoxy)methane, Water | 0 | | | | | | | |
| 2,4-Dinitrotoluene, Water | 0 | | | | | | | |
| 2,6-Dinitrotoluene, Water | 0 | | | | | | | |
| Pentachlorophenol, Water | 0 | | | | | | | |
| 1,2-Diphenylhydrazine, Water | 0 | | | | | | | |

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: lg1
Method Description.: Semivolatile Organics, Low Level Batch(s)...: 47867

| LCS | Laboratory Control Sample | SVS020702X | 47797 | | 03/22/2002 | 1256 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 5.17830 | | 5.000000 | | 103.6 | | 32-165 | |
| Acenaphthylene, Water | 4.93701 | | 5.000000 | | 98.7 | | 10-150 | |
| Anthracene, Water | 5.41153 | | 5.000000 | | 108.2 | | 23-178 | |
| Benzo(a)anthracene, Water | 5.37606 | | 5.000000 | | 107.5 | | 25-180 | |
| Benzo(b)fluoranthene, Water | 5.42793 | | 5.000000 | | 108.6 | | 24-175 | |
| Benzo(k)fluoranthene, Water | 5.52039 | | 5.000000 | | 110.4 | | 15-185 | |
| Benzo(ghi)perylene, Water | 4.76099 | | 5.000000 | | 95.2 | | 15-182 | |
| Benzo(a)pyrene, Water | 4.76646 | | 5.000000 | | 95.3 | | 19-182 | |
| Bis(2-chloroethoxy)methane, Water | 5.14515 | | 5.000000 | | 102.9 | | 47-148 | |
| Bis(2-ethylhexyl)phthalate, Water | 5.33637 | | 5.000000 | | 106.7 | | 25-173 | |
| 2-Chloronaphthalene, Water | 4.85059 | | 5.000000 | | 97.0 | | 23-143 | |
| Chrysene, Water | 5.52714 | | 5.000000 | | 110.5 | | 23-180 | |
| Dibenzo(a,h)anthracene, Water | 5.07525 | | 5.000000 | | 101.5 | | 12-178 | |
| Dibenzofuran, Water | 5.13888 | | 5.000000 | | 102.8 | | 35-153 | |
| Di-n-butyl Phthalate, Water | 5.36700 | | 5.000000 | | 107.3 | | 28-185 | |
| 2,4-Dinitrotoluene, Water | 5.60368 | | 5.000000 | | 112.1 | | 13-175 | |
| 2,6-Dinitrotoluene, Water | 5.97906 | | 5.000000 | | 119.6 | | 17-180 | |
| Fluoranthene, Water | 5.63019 | | 5.000000 | | 112.6 | | 28-180 | |
| Fluorene, Water | 5.09191 | | 5.000000 | | 101.8 | | 30-189 | |
| Indeno(1,2,3-cd)pyrene, Water | 4.14595 | | 5.000000 | | 82.9 | | 16-180 | |
| 2-Methylnaphthalene, Water | 4.87080 | | 5.000000 | | 97.4 | | 26-168 | |
| Naphthalene, Water | 4.92574 | | 5.000000 | | 98.5 | | 36-139 | |
| Nitrobenzene, Water | 5.32695 | | 5.000000 | | 106.5 | | 17-163 | |
| n-Nitrosodiphenylamine, Water | 5.52365 | | 5.000000 | | 110.5 | | 58-174 | |
| Phenanthrene, Water | 5.20500 | | 5.000000 | | 104.1 | | 26-166 | |
| Pyrene, Water | 5.44468 | | 5.000000 | | 108.9 | | 28-173 | |
| 2,4-Dimethylphenol, Water | 4.18424 | | 5.000000 | | 83.7 | | 23-157 | |
| 2-Methyl-4,6-dinitrophenol, Water | 4.66783 | | 5.000000 | | 93.4 | | 17-164 | |
| 4-Nitrophenol, Water | 3.04282 | | 5.000000 | | 60.9 | | 10-92 | |
| Pentachlorophenol, Water | 3.31344 | | 5.000000 | | 66.3 | | 10-130 | |
| Phenol, Water | 2.28406 | | 5.000000 | | 45.7 | | 20-83 | |



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# QUALITY CONTROL RESULTS

Job Number.: 232600 Report Date.: 04/16/2002

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

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | SVS030402B | 47797 | | 03/22/2002 | 1129 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 0 | | | | | | | |
| Acenaphthylene, Water | 0 | | | | | | | |
| Anthracene, Water | 0 | | | | | | | |
| Benzo(a)anthracene, Water | 0 | | | | | | | |
| Benzo(b)fluoranthene, Water | 0 | | | | | | | |
| Benzo(k)fluoranthene, Water | 0 | | | | | | | |
| Benzo(ghi)perylene, Water | 0 | | | | | | | |
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Bis(2-chloroethoxy)methane, Water | 0 | | | | | | | |
| Bis(2-ethylhexyl)phthalate, Water | 0.23316 | | | | | | | |
| 2-Chloronaphthalene, Water | 0 | | | | | | | |
| Chrysene, Water | 0 | | | | | | | |
| Dibenzo(a,h)anthracene, Water | 0 | | | | | | | |
| Dibenzofuran, Water | 0 | | | | | | | |
| Di-n-butyl Phthalate, Water | 0 | | | | | | | |
| 2,4-Dinitrotoluene, Water | 0 | | | | | | | |
| 2,6-Dinitrotoluene, Water | 0 | | | | | | | |
| Fluoranthene, Water | 0 | | | | | | | |
| Fluorene, Water | 0 | | | | | | | |
| Indeno(1,2,3-cd)pyrene, Water | 0 | | | | | | | |
| 2-Methylnaphthalene, Water | 0 | | | | | | | |
| Naphthalene, Water | 0 | | | | | | | |
| Nitrobenzene, Water | 0 | | | | | | | |
| n-Nitrosodiphenylamine, Water | 0 | | | | | | | |
| Phenanthrene, Water | 0 | | | | | | | |
| Pyrene, Water | 0 | | | | | | | |
| 2,4-Dimethylphenol, Water | 0 | | | | | | | |
| 2-Methyl-4,6-dinitrophenol, Water | 0 | | | | | | | |
| 4-Nitrophenol, Water | 0 | | | | | | | |
| Pentachlorophenol, Water | 0 | | | | | | | |
| Phenol, Water | 0 | | | | | | | |
| 1-Methylnaphthalene, Water | 0 | | | | | | | |
| 1,2-Diphenylhydrazine, Water | 0 | | | | | | | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| PB | Prep. Blank | SVS030402B | 47797 | | 03/22/2002 | 1324 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 0 | | | | | | | |
| Acenaphthylene, Water | 0 | | | | | | | |
| Anthracene, Water | 0 | | | | | | | |
| Benzo(a)anthracene, Water | 0 | | | | | | | |
| Benzo(b)fluoranthene, Water | 0 | | | | | | | |
| Benzo(k)fluoranthene, Water | 0 | | | | | | | |
| Benzo(ghi)perylene, Water | 0 | | | | | | | |
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Chrysene, Water | 0 | | | | | | | |
| Dibenzo(a,h)anthracene, Water | 0 | | | | | | | |
| Fluoranthene, Water | 0 | | | | | | | |
| Fluorene, Water | 0 | | | | | | | |
| Indeno(1,2,3-cd)pyrene, Water | 0 | | | | | | | |
| 2-Methylnaphthalene, Water | 0 | | | | | | | |
| Naphthalene, Water | 0 | | | | | | | |



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# QUALITY CONTROL RESULTS

Job Number.: 232600 Report Date.: 04/16/2002

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

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| PB | Prep. Blank | SVS030402B | 47797 | | 03/22/2002 | 1324 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Phenanthrene, Water | 0 | | | | | | | |
| Pyrene, Water | 0 | | | | | | | |
| 1-Methylnaphthalene, Water | 0 | | | | | | | |
| Carbazole, Water | 0 | | | | | | | |

| SB | Spiked Blank | SVS012802C | 47797 | | 03/22/2002 | 1158 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 5.44992 | | 5.000000 | 0 | 109 | | 46-118 | |
| 2,4-Dinitrotoluene, Water | 6.20452 | | 5.000000 | 0 | 124 | | 24-96 | |
| Pyrene, Water | 5.95063 | | 5.000000 | 0 | 119 | | 52-115 | |
| 4-Nitrophenol, Water | 5.23631 | | 10.000000 | 0 | 52 | | 10-80 | |
| Pentachlorophenol, Water | 8.82794 | | 10.000000 | 0 | 88 | | 9-103 | |
| Phenol, Water | 4.22386 | | 10.000000 | 0 | 42 | | 10-112 | |

| SBD | Spiked Blank Duplicate | SVS012802C | 47797 | | 03/22/2002 | 1227 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 5.20397 | 5.44992 | 5.000000 | 0 | 104.1 | | 46-118 | |
| | | | | | 4.6 | | 31 | |
| 2,4-Dinitrotoluene, Water | 5.89695 | 6.20452 | 5.000000 | 0 | 117.9 | | 24-96 | |
| | | | | | 5.1 | | 38 | |
| Pyrene, Water | 6.08728 | 5.95063 | 5.000000 | 0 | 121.7 | | 52-115 | |
| | | | | | 2.3 | | 31 | |
| 4-Nitrophenol, Water | 4.09426 | 5.23631 | 10.000000 | 0 | 40.9 | | 10-80 | |
| | | | | | 24.5 | | 50 | |
| Pentachlorophenol, Water | 7.44414 | 8.82794 | 10.000000 | 0 | 74.4 | | 9-103 | |
| | | | | | 17.0 | | 50 | |
| Phenol, Water | 4.26753 | 4.22386 | 10.000000 | 0 | 42.7 | | 10-112 | |
| | | | | | 1.0 | | 23 | |

Test Method.....: SW-846 8260B Units.....: ug/L Analyst...: zfl
Method Description.: Volatile Organics Batch(s)...: 47655

| LCS | Laboratory Control Sample | VS030602E | 47655-1 | | 03/19/2002 | 1331 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 46.8405 | | 50.00 | ND | 93.7 | | 68-127 | |
| Bromodichloromethane, Water | 50.9698 | | 50.00 | ND | 101.9 | | 64-129 | |
| Bromoform, Water | 55.5506 | | 50.00 | ND | 111.1 | | 45-147 | |
| Bromomethane, Water | 38.3064 | | 50.00 | ND | 76.6 | | 32-143 | |
| Carbon Tetrachloride, Water | 54.0861 | | 50.00 | ND | 108.2 | | 54-140 | |
| Chlorobenzene, Water | 54.9234 | | 50.00 | ND | 109.8 | | 65-129 | |
| Chloroethane, Water | 34.0189 | | 50.00 | ND | 68.0 | | 47-157 | |
| Chloroform, Water | 50.5204 | | 50.00 | ND | 101.0 | | 71-131 | |
| Chloromethane, Water | 45.4796 | | 50.00 | ND | 91.0 | | 22-160 | |
| Dibromochloromethane, Water | 58.5055 | | 50.00 | ND | 117.0 | | 64-131 | |



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# QUALITY CONTROL RESULTS

Job Number.: 232600 Report Date.: 04/16/2002

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

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| LCS | Laboratory Control Sample | VS030602E | 47655-1 | | 03/19/2002 | 1331 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene, Water | 52.4340 | | 50.00 | ND | 104.9 | | 59-133 | |
| 1,3-Dichlorobenzene, Water | 53.3811 | | 50.00 | ND | 106.8 | | 61-132 | |
| 1,4-Dichlorobenzene, Water | 50.6585 | | 50.00 | ND | 101.3 | | 46-142 | |
| 1,1-Dichloroethane, Water | 47.6012 | | 50.00 | ND | 95.2 | | 62-138 | |
| 1,2-Dichloroethane, Water | 57.5960 | | 50.00 | ND | 115.2 | | 65-133 | |
| 1,1-Dichloroethene, Water | 53.7520 | | 50.00 | ND | 107.5 | | 48-147 | |
| cis-1,2-Dichloroethene, Water | 43.4346 | | 50.00 | ND | 86.9 | | 61-129 | |
| trans-1,2-Dichloroethene, Water | 45.2758 | | 50.00 | ND | 90.6 | | 73-138 | |
| 1,2-Dichloropropane, Water | 48.4793 | | 50.00 | ND | 97.0 | | 60-124 | |
| Ethylbenzene, Water | 55.7165 | | 50.00 | ND | 111.4 | | 64-132 | |
| Methylene Chloride, Water | 53.2395 | | 50.00 | ND | 106.5 | | 54-133 | |
| Styrene, Water | 46.5461 | | 50.00 | ND | 93.1 | | 20-156 | |
| 1,1,2,2-Tetrachloroethane, Water | 46.5415 | | 50.00 | ND | 93.1 | | 70-130 | |
| Tetrachloroethene, Water | 55.1982 | | 50.00 | ND | 110.4 | | 59-134 | |
| Toluene, Water | 48.5376 | | 50.00 | ND | 97.1 | | 63-127 | |
| 1,1,1-Trichloroethane, Water | 49.3193 | | 50.00 | ND | 98.6 | | 70-130 | |
| 1,1,2-Trichloroethane, Water | 52.8166 | | 50.00 | ND | 105.6 | | 70-130 | |
| Trichloroethene, Water | 55.8064 | | 50.00 | ND | 111.6 | | 64-130 | |
| Vinyl Chloride, Water | 46.6320 | | 50.00 | ND | 93.3 | | 35-155 | |
| Xylenes (total), Water | 165.570 | | 150.00 | ND | 110.4 | | 37-161 | |
| m,p-Xylene, Water | 108.713 | | 100.00 | ND | 108.7 | | 37-160 | |
| o-Xylene, Water | 56.8563 | | 50.00 | ND | 113.7 | | 37-161 | |
| Acetone, Water | 92.2804 | | 50.00 | ND | 184.6 | | 38-190 | |
| Carbon Disulfide, Water | 60.6664 | | 50.00 | ND | 121.3 | | 68-158 | |
| Methyl Ethyl Ketone (2-Butanone), Water | 67.2934 | | 50.00 | ND | 134.6 | | 38-186 | |
| cis-1,3-Dichloropropene, Water | 54.2305 | | 50.00 | ND | 108.5 | | 66-130 | |
| trans-1,3-Dichloropropene, Water | 60.7152 | | 50.00 | ND | 121.4 | | 71-139 | |
| 2-Hexanone, Water | 66.2387 | | 50.00 | ND | 132.5 | | 29-173 | |
| 4-Methyl-2-pentanone (MIBK), Water | 62.7559 | | 50.00 | ND | 125.5 | | 40-144 | |

| MB | Method Blank | VS030602C | 47655-1 | | 03/19/2002 | 1438 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | ND | | | | | | | |
| Bromobenzene, Water | ND | | | | | | | |
| Bromochloromethane, Water | ND | | | | | | | |
| Bromodichloromethane, Water | ND | | | | | | | |
| Bromoform, Water | ND | | | | | | | |
| Bromomethane, Water | ND | | | | | | | |
| n-Butylbenzene, Water | ND | | | | | | | |
| sec-Butylbenzene, Water | ND | | | | | | | |
| tert-Butylbenzene, Water | ND | | | | | | | |
| Carbon Tetrachloride, Water | ND | | | | | | | |
| Chlorobenzene, Water | ND | | | | | | | |
| Chloroethane, Water | ND | | | | | | | |
| Chloroform, Water | ND | | | | | | | |
| Chloromethane, Water | ND | | | | | | | |
| o-Chlorotoluene, Water | ND | | | | | | | |
| p-Chlorotoluene, Water | ND | | | | | | | |
| Dibromochloromethane, Water | ND | | | | | | | |
| 1,2-Dibromo-3-chloropropane, Water | ND | | | | | | | |
| 1,2-Dibromoethane (EDB), Water | ND | | | | | | | |



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

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QUALITY CONTROL RESULTS

Job Number.: 232600 Report Date.: 04/16/2002

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

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | VS030602C | 47655-1 | | 03/19/2002 | 1438 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Dibromomethane, Water | ND | | | | | | | |
| 1,2-Dichlorobenzene, Water | ND | | | | | | | |
| 1,3-Dichlorobenzene, Water | ND | | | | | | | |
| 1,4-Dichlorobenzene, Water | ND | | | | | | | |
| Dichlorodifluoromethane, Water | ND | | | | | | | |
| 1,1-Dichloroethane, Water | ND | | | | | | | |
| 1,2-Dichloroethane, Water | ND | | | | | | | |
| 1,1-Dichloroethene, Water | ND | | | | | | | |
| 1,2-Dichloroethene (total), Water | ND | | | | | | | |
| cis-1,2-Dichloroethene, Water | ND | | | | | | | |
| trans-1,2-Dichloroethene, Water | ND | | | | | | | |
| 1,2-Dichloropropane, Water | ND | | | | | | | |
| 1,3-Dichloropropane, Water | ND | | | | | | | |
| 2,2-Dichloropropane, Water | ND | | | | | | | |
| 1,1-Dichloropropene, Water | ND | | | | | | | |
| Ethylbenzene, Water | ND | | | | | | | |
| Hexachlorobutadiene, Water | ND | | | | | | | |
| Isopropylbenzene, Water | ND | | | | | | | |
| p-Isopropyltoluene, Water | ND | | | | | | | |
| Methylene Chloride, Water | ND | | | | | | | |
| Naphthalene, Water | ND | | | | | | | |
| n-Propylbenzene, Water | ND | | | | | | | |
| Styrene, Water | ND | | | | | | | |
| 1,1,1,2-Tetrachloroethane, Water | ND | | | | | | | |
| 1,1,2,2-Tetrachloroethane, Water | ND | | | | | | | |
| Tetrachloroethene, Water | ND | | | | | | | |
| Toluene, Water | ND | | | | | | | |
| 1,2,3-Trichlorobenzene, Water | ND | | | | | | | |
| 1,2,4-Trichlorobenzene, Water | ND | | | | | | | |
| 1,1,1-Trichloroethane, Water | ND | | | | | | | |
| 1,1,2-Trichloroethane, Water | ND | | | | | | | |
| Trichloroethene, Water | ND | | | | | | | |
| Trichlorofluoromethane, Water | ND | | | | | | | |
| 1,2,4-Trimethylbenzene, Water | ND | | | | | | | |
| 1,3,5-Trimethylbenzene, Water | ND | | | | | | | |
| 1,2,3-Trichloropropane, Water | ND | | | | | | | |
| Vinyl Chloride, Water | ND | | | | | | | |
| Xylenes (total), Water | ND | | | | | | | |
| m,p-Xylene, Water | ND | | | | | | | |
| o-Xylene, Water | ND | | | | | | | |
| Acrolein, Water | ND | | | | | | | |
| Acetone, Water | ND | | | | | | | |
| Carbon Disulfide, Water | ND | | | | | | | |
| Acrylonitrile, Water | ND | | | | | | | |
| Methyl tert-Butyl ether, Water | ND | | | | | | | |
| Vinyl Acetate, Water | ND | | | | | | | |
| Methyl Ethyl Ketone (2-Butanone), Water | ND | | | | | | | |
| Methyl Methacrylate, Water | ND | | | | | | | |
| 2-Chloroethylvinyl Ether, Water | ND | | | | | | | |
| cis-1,3-Dichloropropene, Water | ND | | | | | | | |
| trans-1,3-Dichloropropene, Water | ND | | | | | | | |
| 2-Hexanone, Water | ND | | | | | | | |
| tert-Butyl Alcohol, Water | ND | | | | | | | |
| 4-Methyl-2-pentanone (MIBK), Water | ND | | | | | | | |



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

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# QUALITY CONTROL RESULTS

Job Number.: 232600 Report Date.: 04/16/2002

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

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | VS030602C | 47655-1 | | 03/19/2002 | 1438 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Ethyl Acetate, Water | ND | | | | | | | |
| Iodomethane, Water | ND | | | | | | | |
| Tetrahydrofuran, Water | ND | | | | | | | |
| 1,3-Butadiene, Water | ND | | | | | | | |
| Cyclohexane, Water | ND | | | | | | | |
| Hexane, Water | ND | | | | | | | |
| trans-1,4-Dichloro-2-butene, Water | ND | | | | | | | |
| Allyl chloride, Water | ND | | | | | | | |
| Ethyl Methacrylate, Water | ND | | | | | | | |
| 2-Chloro-1,3-butadiene (chloroprene), Wa | ND | | | | | | | |
| Acetonitrile, Water | ND | | | | | | | |
| 1,4-Dioxane, Water | ND | | | | | | | |
| Propionitrile, Water | ND | | | | | | | |
| Isobutyl Alcohol, Water | ND | | | | | | | |
| Methacrylonitrile, Water | ND | | | | | | | |
| Isopropyl Alcohol, Water | ND | | | | | | | |
| Epichlorohydrin, Water | ND | | | | | | | |
| n-Pentane, Water | ND | | | | | | | |
| Propionaldehyde, Water | ND | | | | | | | |
| n-Butyl alcohol (1-Butanol), Water | ND | | | | | | | |
| Acetaldehyde, Water | ND | | | | | | | |
| Cumene (1-Methylethyl Benzene), Water | ND | | | | | | | |
| Cyclohexanone, Water | ND | | | | | | | |
| Propylene oxide, Water | ND | | | | | | | |
| 2,2,4-Trimethylpentane, Water | ND | | | | | | | |
| Butyl acrylate, Water | ND | | | | | | | |
| 1-Chlorohexane, Water | ND | | | | | | | |

| MS | Matrix Spike | VS030602F | 232424-8 | 20.00000 | 03/19/2002 | 1729 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 38.7777 | | 50.00 | ND | 78 | | 65-125 | |
| Chlorobenzene, Water | 47.3884 | | 50.00 | ND | 95 | | 74-122 | |
| 1,1-Dichloroethene, Water | 37.6257 | | 50.00 | ND | 75 | | 22-123 | |
| Toluene, Water | 41.2661 | | 50.00 | ND | 83 | | 76-125 | |
| Trichloroethene, Water | 40.5018 | | 50.00 | ND | 81 | | 56-118 | |

| MSD | Matrix Spike Duplicate | VS030602F | 232424-8 | 20.00000 | 03/19/2002 | 1757 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 42.1734 | 38.7777 | 50.00 | ND | 84 | | 65-125 | |
| | | | | | 8.4 | | 30.0 | |
| Chlorobenzene, Water | 49.4778 | 47.3884 | 50.00 | ND | 99 | | 74-122 | |
| | | | | | 4.3 | | 30.0 | |
| 1,1-Dichloroethene, Water | 42.4615 | 37.6257 | 50.00 | ND | 85 | | 22-123 | |
| | | | | | 12.1 | | 30.0 | |
| Toluene, Water | 44.5756 | 41.2661 | 50.00 | ND | 89 | | 76-125 | |
| | | | | | 7.7 | | 30.0 | |
| Trichloroethene, Water | 46.1003 | 40.5018 | 50.00 | ND | 92 | | 56-118 | |
| | | | | | 12.9 | | 30.0 | |



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# SURROGATE RECOVERIES REPORT

Job Number.: 232600 Report Date.: 04/16/2002

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

Method.....: Volatile Organics Method Code...: 8260 Prep Batch....:
Batch(s).....: 47655 Test Matrix...: Water Equipment Code: GCMSVOA01

| Lab ID | DT | Sample ID | Date | 12DCED | BRFLBE | DBRFLM | TOLD8 |
|---|---|---|---|---|---|---|---|
| 47655- 1 | LCS | | 03/19/2002 | 104.9 | 103.0 | 108.1 | 97.2 |
| 47655- 1 | MB | | 03/19/2002 | 102.2 | 99.0 | 110.8 | 87.7 |
| 232424- 8 | MS | MW15A-RFI | 03/19/2002 | 94.7 | 83.6 | 99.7 | 80.2 |
| 232424- 8 | MSD | MW15A-RFI | 03/19/2002 | 109.9 | 90.9 | 115.7 | 87.6 |
| 232600- 1 | | MW01A-1SA02 | 03/19/2002 | 107.9 | 98.3 | 122.5 | 101.1 |

| Test | Test Description | Limits |
|---|---|---|
| 12DCED | 1,2-Dichloroethane-d4 | 70 - 130 |
| BRFLBE | 4-Bromofluorobenzene | 70 - 130 |
| DBRFLM | Dibromofluoromethane | 70 - 130 |
| TOLD8 | Toluene-d8 | 70 - 130 |



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# SURROGATE RECOVERIES REPORT

Job Number.: 232600 Report Date.: 04/16/2002

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

Method.....: Semivolatile Organics, Low Level Method Code...: 8270LL Prep Batch....: 47797
Batch(s).....: 47867 Test Matrix...: Water Equipment Code: EGCMS07

| Lab ID | DT | Sample ID | Date | 246TBP | 2FLUBP | 2FLUPH | NITRD5 | PHEND6 | TERD14 |
|---|---|---|---|---|---|---|---|---|---|
| LCS | | | 03/22/2002 | 92 | 95 | 59 | 102 | 40 | 88 |
| MB | | | 03/22/2002 | 50 | 48 | 27 | 48 | 18 | 45 |
| PB | | | 03/22/2002 | 92 | 91 | 59 | 99 | 36 | 82 |
| SB | | | 03/22/2002 | 91 | 86 | 59 | 92 | 36 | 78 |
| SBD | | | 03/22/2002 | 90 | 88 | 62 | 93 | 38 | 86 |
| 232600- 1 | | MW01A-1SA02 | 03/22/2002 | 105 | 95 | 56 | 98 | 34 | 43 |
| 232600- 1 | | MW01A-1SA02 | 03/22/2002 | 121 | 108 | 57 | 102 | 35 | 51 |

| Test | Test Description | Limits |
|---|---|---|
| 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 |



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# QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 04/16/2002

### 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.

General Information:

- Cresylic Acid is the combination of o,m and p-Cresol. The combination is reportesd 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, maybe detected as diphenylamine.

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.
O - Sample required dilution due to matrix interference.
D - Sample reported from a dilution.
d - Spike and/or surrogate diluted out.
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.
CC - Continuing Calibration Verification (CCV) standard is not associated with the samples reported.
M1 - 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.
K1 - See case narrative.



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# QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 04/16/2002

Explanation of Organic QC Outliers:

E - Method blank analysis yielded methylene chloride and/or acetone concentrations above the RL. 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.
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.
N1 - Gaseous compound. In-house QC limits are advisory.
P1 - Ketone compounds have poor purge efficiency. In-house QC limits are advisory.
S1 - 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.
3a - 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.
S - 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 - 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.

Abbreviations:

Batch - Designation given to identify a specific extraction, digestion, preparation, or analysis set.
CCV - Continuing Calibration Verification
CRA - Low level standard check - GFAA, Mercury
CRI - Low level standard check - ICP
Dil Fac - Dilution Factor - Secondary dilution analysis
DLFac - Detection Limit Factor
EB - Extraction Blank (TCLP, SPLP, etc.)
ICAL - Initial Calibration
ICB - Initial Calibration Blank
ICV - Initial Calibration Verification
ISA - Interference Check Sample A - ICP
ISB - Interference Check Sample B - ICP
LCD - Laboratory Control Duplicate
LCS - Laboratory Control Sample
MB - Method Blank
MD - Method Duplicate
MDL - Method Detection Limit
MS - Matrix Spike
MSD - Matrix Spike Duplicate
ND - Not Detected



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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 04/16/2002

PB - Preparation Blank
PREPF - Preparation factor
RPD - Relative Percent Difference
RRF - Relative Response Factor
RT - Retention Time

Method References:

(1) EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.
(2) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1193; Update IIB, January 1995; Update III, December 1996.
(3) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989),
(4) HACH Water Analysis Handbook 3rd Edition (1997).
(5) Federal Register, July 1, 1990 (40 CFR Part 136).
(6) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.
(7) ASTM Annual Book of Methods (Various Years)
(8) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.



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# LABORATORY CHRONICLE

Job Number: 232600

Date: 04/16/2002

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

Lab ID: 232600-1 Client ID: MW01A-1SA02 Date Recvd: 03/19/2002 Sample Date: 03/19/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| | Data Package Validataion | 1 | 49249 | | 04/16/2002 | 0000 | |
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47797 | | 03/21/2002 | 1000 | |
| | GC/MS Semi-Volatile Package Production | 1 | 48864 | | 04/10/2002 | 0800 | |
| | GC/MS Volatiles Data Package Production | 1 | 48888 | | 04/09/2002 | 1730 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47875 | 47797 | 03/22/2002 | 1608 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47867 | 47797 | 03/22/2002 | 1353 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47867 | 47797 | 03/22/2002 | 1648 | 4.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47655 | | 03/19/2002 | 2241 | 1.00000 |



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Houston, TX 77040
(713) 690-4444, Fax (713) 690-5646

| | |
|---|---|
| ❶ Company: ERM - SOUTHWEST | Address: 16300 KATY FWY SUITE 300 HOUSTON, TX |
| Phone #: (281) 600-1000 | Fax #: (281) 600-1001 |
| Reports Sent To: CHRISTOPHER YOUNG | P O #: |
| Project #: 422-102-60 | |
| Project Name: UPPR - FIRST SEMIANNUAL | Project Location: HWPW - IMPOUNDMENT |
| Sampler(s) Name: (Signature) CHERRY SMITH | |
| Courier: | |

❺ Requested Analysis

| ❷ Field Sample ID | ❸ Sampling Date | ❸ Sampling Time | ❹ Matrix: Water | Soil | Sludge | Oil | Other | # of Containers | Haz. Sample (Y/N) | 8260B - VOC's | 8270C - LOW LEVEL | 8270C - SIM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW01A-1SA02 | 3/19/02 | 0935 | X | | | | | 5 | N | X | X | X |
| 2. | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | |
| 11. | | | | | | | | | | | | |
| 12. | | | | | | | | | | | | |
| 13. | | | | | | | | | | | | |

| | | | |
|---|---|---|---|
| Relinquished by: (Signature) | Relinquished by: (Signature) | ❼ Relinquished by Sampler: (Signature) | |
| Date: | Date: 3/19/02 | Date: 3/19/02 | |
| Time: | Time: 0954 | Time: 0954 | |
| Received by Laboratory: (Signature) | Received by: (Signature) | Received by: (Signature) | |
| Date: 3-19-02 | Date: | Date: 03/19/02 | |
| Time: 1048 | Time: | Time: 0954 | |

❻ Remarks:

Requested Turnaround: STANDARD

GSAI Group: 232600

Special Detection Limits: SEE PROJECT REQUIREMENTS

QC Package: (check one)
☒ CLP ☐ Site Specific ☐ Tier 1 ☐ Tier 2 ☐ QC Summary

White Copy to Accompany Samples to Lab — Yellow Copy Retained by Client — Pink Copy Retained by Sampler

rpjsckl | Job Sample Receipt Checklist Report | V2

Job Number.: 232600 Location.: 57216 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: 03/19/2002 Date of the Report..: 03/19/2002
Project Number.: 99000484 Project Description.: UPRR-HWPW Project Manager.....: sgk
Customer.....: ERM Southwest, Inc.- Houston Contact.: Peter Gagnon

| Questions ? | (Y/N) | Comments |
|---|---|---|
| Chain of Custody Received? | Y | |
| ...If "yes", completed properly? | Y | |
| Custody seal on shipping container? | | |
| ...If "yes", custody seal intact? | | |
| Custody seals on sample containers? | | |
| ...If "yes", custody seal intact? | | |
| Samples chilled? | Y | |
| Temperature of cooler acceptable? (4 deg C +/- 2). | Y | 2.5C |
| Thermometer ID | Y | 340 |
| Samples received intact (good condition)? | Y | |
| Volatile samples acceptable? (no headspace) | Y | |
| Correct containers used? | Y | |
| Adequate sample volume provided? | Y | |
| Samples preserved correctly? | Y | |
| Samples received within holding-time? | Y | |
| Agreement between COC and sample labels? | Y | |
| Radioactivity at or below background levels? | Y | |
| Additional | Y | |
| Comments | Y | |
| Sample Custodian Signature/Date | Y | TTH |

TTH 3.19.02

STL HOUSTON
SAMPLE RECEIPT CHECKLIST

CLIENT: ERM-SOUTHWEST | CONTACT: ~~Christopher Young~~ Client
PROJECT: UPRR - First semiannual | CARRIER:
DATE SHIPPED: 3.19.02 | UNPACKED BY: TTH
DATE RECEIVED: 2002 MAR 19 AM 10:40 | UNPACKED STAMP: 2002 MAR 19 PM 3:42
NUMBER OF KITS RECEIVED: 1 | JOB#: 232600 | SDG #:

KIT CHECKLIST

| KIT ID | COC PRESENT | CUSTODY TAPE | | COOLER TEMP Thermometer # 40 | # OF SAMPLE CONTAINERS |
|---|---|---|---|---|---|
| | | PRESENT? | INTACT? | | |
| 248 | Yes | C NO | NO | 2.5°C | 7 |
| | | B | | | |
| | | C | | | |
| | | B | | | |
| | | C | | | |
| | | B | | | |

C = COOLER B = BOTTLES

SAMPLE CHECKS

pH OF WATER SAMPLES CHECKED? Yes ✓ No ___ SAMPLE(S) SCREENED FOR RADIATION? Yes ✓ No ___

VOLATILE HEAD SPACE CHECKED? Yes ✓ No ___

SHORT HOLD / RUSH SAMPLES (include department delivered to and time delivered)

INCONSISTENCIES

TRIP BLANK NOT ON COC

ACTION TAKEN

PERSON CONTACTED: ___ DATE: ___
RESOLUTION ___

EMPLOYEE ___ DATE: ___

☐ $HNO_3$ ☐ HCL ☐ $H_2SO_4$ ☐ NaOH ☐ $Na_2S_2O_3$ ☐ NEAT ☐ $NaHSO_4$ ☐ OT/PRE.
(Water Only)

7 VOA
Other

___ VOA
___ Other

| # Cont. | Matrix |
|---|---|
| 7 | WQ |
| | |
| | |
| Total 7 | WQ |

NOTES ___

Project Manager ___

56

2-A-1-$Na_2$
VOA-3-HCL
TB-2-HCL

SA 132 Rev 3 3/00

SEVERN TRENT SERVICES

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# ANALYTICAL REPORT

JOB NUMBER: 232359

Prepared For:

ERM Southwest, Inc.- Houston
16300 Katy Freeway
Suite 300
Houston, TX 77094-1611

Attention: Chris Young

Date: 04/10/2002


Signature

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail: [redacted]

04/10/02
Date

Severn Trent Laboratories
6310 Rothway Drive
Houston, TX 77040

PHONE: (713) 690-4444


TOTAL NO. OF PAGES 36

SEVERN TRENT SERVICES

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04/10/2002

Chris Young
ERM Southwest, Inc.- Houston
16300 Katy Freeway
Suite 300
Houston, TX 77094-1611

Project : UPRR-HWPW
Project No. : 232359
Date Received : 03/13/2002
STL Job : 232359

Dear Chris Young:

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

1. MW-4-1SA02
2. MW-11A-1SA02
3. MW-10A-1SA02
4. MW-10A-1SA02 MS
5. MW-10A-1SA02 MSD
6. MW08-1SA02
7. TB031202-1SA02
8. MW-07-1SA02

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 are noted in the case narrative. The case narrative is an integral 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



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## SAMPLE INFORMATION

Date: 04/10/2002

Job Number.: 232359
Customer...: ERM Southwest, Inc.- Houston
Attn.....: Chris Young

Project Number.....: 99000484
Customer Project ID....: UPRR-HWPW-SA
Project Description....: UPRR-HWPW

| Laboratory Sample ID | Customer Sample ID | Sample Matrix | Date Sampled | Time Sampled | Date Received | Time Received |
|---|---|---|---|---|---|---|
| 232359-1 | MW-4-1SA02 | Water | 03/11/2002 | 14:45 | 03/13/2002 | 12:31 |
| 232359-2 | MW-11A-1SA02 | Water | 03/11/2002 | 15:55 | 03/13/2002 | 12:31 |
| 232359-3 | MW-10A-1SA02 | Water | 03/12/2002 | 15:05 | 03/13/2002 | 12:31 |
| 232359-4 | MW-10A-1SA02 MS | Water | 03/12/2002 | 15:05 | 03/13/2002 | 12:31 |
| 232359-5 | MW-10A-1SA02 MSD | Water | 03/12/2002 | 15:05 | 03/13/2002 | 12:31 |
| 232359-6 | MW08-1SA02 | Water | 03/12/2002 | 00:00 | 03/13/2002 | 12:31 |
| 232359-7 | TB031202-1SA02 | Trip Blank | 03/12/2002 | 00:00 | 03/13/2002 | 12:31 |
| 232359-8 | MW-07-1SA02 | Water | 03/11/2002 | 16:25 | 03/13/2002 | 12:31 |



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# LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW-4-1SA02
Date Sampled.....: 03/11/2002
Time Sampled.....: 14:45
Sample Matrix.....: Water

Laboratory Sample ID: 232359-1
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Data Package Validataion | | | | | | | | | | | |
| | GC/MS VOA Validation, Water | Complete | | | | | 1 | | 48877 | | 04/10/02 0000 | srh |
| | GC/MS SVOA Validation, Water | Complete | | | | | 1 | | 48877 | | 04/10/02 0000 | srh |
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47365 | | 03/14/02 0800 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47791 | | 03/15/02 1545 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47791 | | 03/15/02 1545 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1545 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1545 | lg1 |
| 09 | Pentachlorophenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1545 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1545 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Acenaphthylene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Anthracene, Water | 0.9 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.6 | J | | 0.5 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | 2-Chloronaphthalene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Chrysene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Dibenzofuran, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.3 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Fluoranthene, Water | 2 | U | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Fluorene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | 2-Methylnaphthalene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Naphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

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

Customer Sample ID: MW-4-1SA02
Date Sampled.....: 03/11/2002
Time Sampled.....: 14:45
Sample Matrix.....: Water

Laboratory Sample ID: 232359-1
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nitrobenzene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | n-Nitrosodiphenylamine, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Phenanthrene, Water | 0.1 | J | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Pyrene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | 2,4-Dimethylphenol, Water | 1 | U | | 0.1 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | 4-Nitrophenol, Water | 6 | U | | 1 | 6 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| | Phenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1346 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2146 | ydy |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2146 | ydy |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2146 | ydy |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2146 | ydy |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2146 | ydy |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2146 | ydy |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47550 | | 03/18/02 2146 | ydy |

61

* In Description = Dry Wgt.



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# LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW-11A-1SA02
Date Sampled.....: 03/11/2002
Time Sampled.....: 15:55
Sample Matrix.....: Water

Laboratory Sample ID: 232359-2
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47365 | | 03/14/02 0800 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47791 | | 03/15/02 1613 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47791 | | 03/15/02 1613 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1613 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1613 | lg1 |
| | Pentachlorophenol, Water | 0.4 | J | | 0.2 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1613 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1613 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 400 | | | 5 | 30 | 20.00000 | ug/L | 47812 | | 03/20/02 1149 | lg1 |
| | Acenaphthylene, Water | 5 | | | 0.2 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | Anthracene, Water | 13 | | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.4 | J | | 0.5 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | 2-Chloronaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | Chrysene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | Dibenzofuran, Water | 190 | | | 1 | 8 | 5.00000 | ug/L | 47812 | | 03/20/02 1052 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.3 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | Fluoranthene, Water | 15 | | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | Fluorene, Water | 230 | | | 1 | 8 | 5.00000 | ug/L | 47812 | | 03/20/02 1052 | lg1 |
| | 2-Methylnaphthalene, Water | 27 | | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | Naphthalene, Water | 680 | | | 7 | 40 | 20.00000 | ug/L | 47812 | | 03/20/02 1149 | lg1 |
| | Nitrobenzene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | n-Nitrosodiphenylamine, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | Phenanthrene, Water | 110 | | | 1 | 8 | 5.00000 | ug/L | 47812 | | 03/20/02 1052 | lg1 |
| | Pyrene, Water | 7 | | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |

29

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232359 Date:04/15/2002

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

Customer Sample ID: MW-11A-1SA02
Date Sampled.....: 03/11/2002
Time Sampled.....: 15:55
Sample Matrix.....: Water

Laboratory Sample ID: 232359-2
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 4 | | | 0.1 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | 4-Nitrophenol, Water | 7 | U | | 1 | 7 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| | Phenol, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1414 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 2 | J | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2213 | ydy |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2213 | ydy |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2213 | ydy |
| | Ethylbenzene, Water | 2 | J | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2213 | ydy |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2213 | ydy |
| | Toluene, Water | 1 | J | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2213 | ydy |
| | Xylenes (total), Water | 6 | J | | 5 | 15 | 1.00000 | ug/L | 47550 | | 03/18/02 2213 | ydy |

* In Description = Dry Wgt.



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# LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW-10A-1SA02
Date Sampled.....: 03/12/2002
Time Sampled.....: 15:05
Sample Matrix.....: Water

Laboratory Sample ID: 232359-3
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47365 | | 03/14/02 0800 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47791 | | 03/15/02 1641 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47791 | | 03/15/02 1641 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1641 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1641 | lg1 |
| | Pentachlorophenol, Water | 0.2 | J | | 0.2 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1641 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1641 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 1 | J | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Acenaphthylene, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Anthracene, Water | 0.5 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.4 | J | | 0.5 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | 2-Chloronaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Chrysene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Dibenzofuran, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.2 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Fluoranthene, Water | 2 | U | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Fluorene, Water | 0.1 | J | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | 2-Methylnaphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Naphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Nitrobenzene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | n-Nitrosodiphenylamine, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Phenanthrene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Pyrene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |

* In Description = Dry Wgt.



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# LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW-10A-1SA02
Date Sampled.....: 03/12/2002
Time Sampled.....: 15:05
Sample Matrix.....: Water

Laboratory Sample ID: 232359-3
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 2 | U | | 0.1 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | 4-Nitrophenol, Water | 7 | U | | 1 | 7 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| | Phenol, Water | 2 | U | | 0.2 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1443 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2027 | ydy |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2027 | ydy |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2027 | ydy |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2027 | ydy |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2027 | ydy |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2027 | ydy |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47550 | | 03/18/02 2027 | ydy |

* In Description = Dry Wgt.



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# LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW-10A-1SA02 MS
Date Sampled.....: 03/12/2002
Time Sampled.....: 15:05
Sample Matrix.....: Water

Laboratory Sample ID: 232359-4
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47365 | | 03/14/02 0800 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47791 | | 03/15/02 1708 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47791 | | 03/15/02 1708 | lg1 |
| | 2,4-Dinitrotoluene, Water | 12 | | | 0.02 | 1 | 1.00000 | ug/L | 47791 | | 03/18/02 1512 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1708 | lg1 |
| | Pentachlorophenol, Water | 23 | | | 0.2 | 1 | 1.00000 | ug/L | 47791 | | 03/18/02 1512 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1708 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 11 | | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Acenaphthylene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Anthracene, Water | 0.5 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.4 | J | | 0.5 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | 2-Chloronaphthalene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Chrysene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Dibenzofuran, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.3 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Fluoranthene, Water | 2 | U | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Fluorene, Water | 0.06 | J | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | 2-Methylnaphthalene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Naphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Nitrobenzene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | n-Nitrosodiphenylamine, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Phenanthrene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Pyrene, Water | 14 | | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW-10A-1SA02 MS
Date Sampled.....: 03/12/2002
Time Sampled.....: 15:05
Sample Matrix.....: Water

Laboratory Sample ID: 232359-4
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 1 | U | | 0.1 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | 4-Nitrophenol, Water | 9 | | | 1 | 6 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| | Phenol, Water | 7 | | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1512 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 49 | | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2053 | ydy |
| | Chlorobenzene, Water | 53 | | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2053 | ydy |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2053 | ydy |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2053 | ydy |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2053 | ydy |
| | Toluene, Water | 53 | | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2053 | ydy |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47550 | | 03/18/02 2053 | ydy |

29

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW-10A-1SA02 MSD
Date Sampled.....: 03/12/2002
Time Sampled.....: 15:05
Sample Matrix.....: Water

Laboratory Sample ID: 232359-5
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47365 | | 03/14/02 0800 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47791 | | 03/15/02 1736 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47791 | | 03/15/02 1736 | lg1 |
| | 2,4-Dinitrotoluene, Water | 12 | | | 0.02 | 1 | 1.00000 | ug/L | 47791 | | 03/18/02 1541 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1736 | lg1 |
| | Pentachlorophenol, Water | 22 | | | 0.2 | 1 | 1.00000 | ug/L | 47791 | | 03/18/02 1541 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1736 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 12 | | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Acenaphthylene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Anthracene, Water | 0.5 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.5 | J | | 0.5 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | 2-Chloronaphthalene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Chrysene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Dibenzofuran, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.3 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Fluoranthene, Water | 2 | U | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Fluorene, Water | 0.1 | J | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | 2-Methylnaphthalene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Naphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Nitrobenzene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | n-Nitrosodiphenylamine, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Phenanthrene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Pyrene, Water | 13 | | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |

* In Description = Dry Wgt.



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# LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW-10A-1SA02 MSD
Date Sampled.....: 03/12/2002
Time Sampled.....: 15:05
Sample Matrix.....: Water

Laboratory Sample ID: 232359-5
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 1 | U | | 0.1 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | 4-Nitrophenol, Water | 9 | | | 1 | 6 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| | Phenol, Water | 7 | | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1541 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 51 | | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2119 | ydy |
| | Chlorobenzene, Water | 54 | | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2119 | ydy |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2119 | ydy |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2119 | ydy |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2119 | ydy |
| | Toluene, Water | 55 | | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2119 | ydy |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47550 | | 03/18/02 2119 | ydy |

69

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW08-1SA02
Date Sampled.....: 03/12/2002
Time Sampled.....: 00:00
Sample Matrix.....: Water

Laboratory Sample ID: 232359-6
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47365 | | 03/14/02 0800 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47791 | | 03/15/02 1804 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47791 | | 03/15/02 1804 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1804 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1804 | lg1 |
| | Pentachlorophenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1804 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 1.00000 | ug/L | 47791 | | 03/15/02 1804 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 0.3 | J | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Acenaphthylene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Anthracene, Water | 0.5 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.3 | J | | 0.5 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | 2-Chloronaphthalene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Chrysene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Dibenzofuran, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.3 | J | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Fluoranthene, Water | 2 | U | | 0.4 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Fluorene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | 2-Methylnaphthalene, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Naphthalene, Water | 2 | U | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Nitrobenzene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | n-Nitrosodiphenylamine, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Phenanthrene, Water | 1 | U | | 0.3 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Pyrene, Water | 0.09 | J | | 0.3 | 2 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW08-1SA02
Date Sampled.....: 03/12/2002
Time Sampled.....: 00:00
Sample Matrix.....: Water

Laboratory Sample ID: 232359-6
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 1 | U | | 0.1 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | 4-Nitrophenol, Water | 6 | U | | 1 | 6 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| | Phenol, Water | 1 | U | | 0.2 | 1 | 1.00000 | ug/L | 47812 | | 03/18/02 1610 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2239 | ydy |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2239 | ydy |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2239 | ydy |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2239 | ydy |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2239 | ydy |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2239 | ydy |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47550 | | 03/18/02 2239 | ydy |

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# LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: TB031202-1SA02
Date Sampled.....: 03/12/2002
Time Sampled.....: 00:00
Sample Matrix.....: Trip Blank

Laboratory Sample ID: 232359-7
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 1908 | ydy |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 1908 | ydy |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 1908 | ydy |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 1908 | ydy |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 1908 | ydy |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 1908 | ydy |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47550 | | 03/18/02 1908 | ydy |

72

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# LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-HWPW-SA

ATTN: Chris Young

Customer Sample ID: MW-07-1SA02
Date Sampled.....: 03/11/2002
Time Sampled.....: 16:25
Sample Matrix.....: Water

Laboratory Sample ID: 232359-8
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47365 | | 03/14/02 0800 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.2 | U | | 0.03 | 0.2 | 0.50000 | ug/L | 47791 | | 03/15/02 1832 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 0.50000 | ug/L | 47791 | | 03/15/02 1832 | lg1 |
| | 2,4-Dinitrotoluene, Water | 1 | U | | 0.02 | 1 | 0.50000 | ug/L | 47791 | | 03/15/02 1832 | lg1 |
| | 2,6-Dinitrotoluene, Water | 1 | U | | 0.03 | 1 | 0.50000 | ug/L | 47791 | | 03/15/02 1832 | lg1 |
| | Pentachlorophenol, Water | 1 | U | | 0.2 | 1 | 0.50000 | ug/L | 47791 | | 03/15/02 1832 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 1 | U | | 0.05 | 1 | 0.50000 | ug/L | 47791 | | 03/15/02 1832 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 0.5 | J | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Acenaphthylene, Water | 2 | U | | 0.2 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Anthracene, Water | 0.8 | J | | 0.4 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Benzo(a)anthracene, Water | 1 | U | | 0.4 | 1 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 1 | J | | 0.5 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | 2-Chloronaphthalene, Water | 2 | U | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Chrysene, Water | 2 | U | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Dibenzofuran, Water | 2 | U | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.9 | J | | 0.4 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Fluoranthene, Water | 0.1 | J | | 0.4 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Fluorene, Water | 2 | U | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | 2-Methylnaphthalene, Water | 2 | U | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Naphthalene, Water | 2 | U | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Nitrobenzene, Water | 2 | U | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | n-Nitrosodiphenylamine, Water | 2 | U | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Phenanthrene, Water | 2 | U | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Pyrene, Water | 0.1 | J | | 0.3 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |

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# LABORATORY TEST RESULTS

Job Number: 232359

Date:04/15/2002

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

Customer Sample ID: MW-07-1SA02
Date Sampled.....: 03/11/2002
Time Sampled.....: 16:25
Sample Matrix.....: Water

Laboratory Sample ID: 232359-8
Date Received.....: 03/13/2002
Time Received.....: 12:31

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 2 | U | | 0.1 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 10 | U | | 2 | 10 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | 4-Nitrophenol, Water | 7 | U | | 1 | 7 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| | Phenol, Water | 2 | U | | 0.2 | 2 | 0.50000 | ug/L | 47812 | | 03/18/02 1639 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2305 | ydy |
| | Chlorobenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2305 | ydy |
| | 1,2-Dichloroethane, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2305 | ydy |
| | Ethylbenzene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2305 | ydy |
| | Methylene Chloride, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2305 | ydy |
| | Toluene, Water | 5 | U | | 2 | 5 | 1.00000 | ug/L | 47550 | | 03/18/02 2305 | ydy |
| | Xylenes (total), Water | 15 | U | | 5 | 15 | 1.00000 | ug/L | 47550 | | 03/18/02 2305 | ydy |

74

* In Description = Dry Wgt.



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# QUALITY CONTROL RESULTS

Job Number.: 232359 Report Date.: 04/10/2002

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

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: lg1
Method Description.: Semivolatile Organics - SIM Analysis Batch(s)...: 47791

| MB | Method Blank | SVS030402B | 47365 | | 03/15/2002 | 1517 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Bis(2-chloroethoxy)methane, Water | 0 | | | | | | | |
| 2,4-Dinitrotoluene, Water | 0 | | | | | | | |
| 2,6-Dinitrotoluene, Water | 0 | | | | | | | |
| Pentachlorophenol, Water | 0 | | | | | | | |
| 1,2-Diphenylhydrazine, Water | 0 | | | | | | | |

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: lg1
Method Description.: Semivolatile Organics, Low Level Batch(s)...: 47812

| LCS | Laboratory Control Sample | SVS020702X | 47365 | | 03/15/2002 | 0909 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 5.35456 | | 5.000000 | | 107.1 | | 32-165 | |
| Acenaphthylene, Water | 5.04943 | | 5.000000 | | 101.0 | | 10-150 | |
| Anthracene, Water | 5.45644 | | 5.000000 | | 109.1 | | 23-178 | |
| Benzo(a)anthracene, Water | 5.79975 | | 5.000000 | | 116.0 | | 25-180 | |
| Benzo(a)pyrene, Water | 5.06972 | | 5.000000 | | 101.4 | | 19-182 | |
| Bis(2-chloroethoxy)methane, Water | 5.04273 | | 5.000000 | | 100.9 | | 47-148 | |
| Bis(2-ethylhexyl)phthalate, Water | 6.23480 | | 5.000000 | | 124.7 | | 25-173 | |
| 2-Chloronaphthalene, Water | 4.94651 | | 5.000000 | | 98.9 | | 23-143 | |
| Chrysene, Water | 5.83780 | | 5.000000 | | 116.8 | | 23-180 | |
| Dibenzofuran, Water | 5.47294 | | 5.000000 | | 109.5 | | 35-153 | |
| Di-n-butyl Phthalate, Water | 5.63292 | | 5.000000 | | 112.7 | | 28-185 | |
| 2,4-Dinitrotoluene, Water | 5.77935 | | 5.000000 | | 115.6 | | 13-175 | |
| 2,6-Dinitrotoluene, Water | 5.74185 | | 5.000000 | | 114.8 | | 17-180 | |
| Fluoranthene, Water | 5.72716 | | 5.000000 | | 114.5 | | 28-180 | |
| Fluorene, Water | 5.57805 | | 5.000000 | | 111.6 | | 30-189 | |
| 2-Methylnaphthalene, Water | 5.23700 | | 5.000000 | | 104.7 | | 26-168 | |
| Naphthalene, Water | 4.98386 | | 5.000000 | | 99.7 | | 36-139 | |
| Nitrobenzene, Water | 4.85838 | | 5.000000 | | 97.2 | | 17-163 | |
| n-Nitrosodiphenylamine, Water | 5.25339 | | 5.000000 | | 105.1 | | 58-174 | |
| Phenanthrene, Water | 5.67058 | | 5.000000 | | 113.4 | | 26-166 | |
| Pyrene, Water | 6.08069 | | 5.000000 | | 121.6 | | 28-173 | |
| 2,4-Dimethylphenol, Water | 4.12979 | | 5.000000 | | 82.6 | | 23-157 | |
| 2-Methyl-4,6-dinitrophenol, Water | 5.08764 | | 5.000000 | | 101.8 | | 17-164 | |
| 4-Nitrophenol, Water | 3.20389 | | 5.000000 | | 64.1 | | 10-92 | |
| Pentachlorophenol, Water | 5.67171 | | 5.000000 | | 113.4 | | 10-130 | |
| Phenol, Water | 2.06260 | | 5.000000 | | 41.3 | | 20-83 | |
| 1,2-Diphenylhydrazine, Water | 5.39458 | | 0.000000 | | | | | |



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QUALITY CONTROL RESULTS

Job Number.: 232359 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-SA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | SVS0304028 | 47365 | | 03/15/2002 | 0840 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 0 | | | | | | | |
| Acenaphthylene, Water | 0 | | | | | | | |
| Anthracene, Water | 0 | | | | | | | |
| Benzo(a)anthracene, Water | 0 | | | | | | | |
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Bis(2-chloroethoxy)methane, Water | 0 | | | | | | | |
| Bis(2-ethylhexyl)phthalate, Water | 0.27018 | | | | | | | |
| 2-Chloronaphthalene, Water | 0 | | | | | | | |
| Chrysene, Water | 0 | | | | | | | |
| Dibenzofuran, Water | 0 | | | | | | | |
| Di-n-butyl Phthalate, Water | 0.19281 | | | | | | | |
| 2,4-Dinitrotoluene, Water | 0 | | | | | | | |
| 2,6-Dinitrotoluene, Water | 0 | | | | | | | |
| Fluoranthene, Water | 0 | | | | | | | |
| Fluorene, Water | 0 | | | | | | | |
| 2-Methylnaphthalene, Water | 0 | | | | | | | |
| Naphthalene, Water | 0 | | | | | | | |
| Nitrobenzene, Water | 0 | | | | | | | |
| n-Nitrosodiphenylamine, Water | 0 | | | | | | | |
| Phenanthrene, Water | 0 | | | | | | | |
| Pyrene, Water | 0 | | | | | | | |
| 2,4-Dimethylphenol, Water | 0 | | | | | | | |
| 2-Methyl-4,6-dinitrophenol, Water | 0 | | | | | | | |
| 4-Nitrophenol, Water | 0 | | | | | | | |
| Pentachlorophenol, Water | 0 | | | | | | | |
| Phenol, Water | 0 | | | | | | | |
| 1,2-Diphenylhydrazine, Water | 0 | | | | | | | |

| MS | Matrix Spike | SVS012802C | 232358-7 | | 03/15/2002 | 1233 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 5.97540 | | 5.000000 | 0 | 120 | | 46-118 | A |
| 2,4-Dinitrotoluene, Water | 6.42342 | | 5.000000 | 0 | 128 | | 24-96 | A |
| Pyrene, Water | 6.67160 | | 5.000000 | 0 | 133 | | 52-127 | A |
| 4-Nitrophenol, Water | 5.22738 | | 10.000000 | 0 | 52 | | 10-80 | |
| Pentachlorophenol, Water | 12.3295 | | 10.000000 | 0 | 123 | | 9-103 | A |
| Phenol, Water | 4.17534 | | 10.000000 | 0 | 42 | | 10-112 | |

| MS | Matrix Spike | SVS012802C | 232358-15 | | 03/15/2002 | 1629 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 5.57405 | | 5.000000 | 0 | 111 | | 46-118 | |
| 2,4-Dinitrotoluene, Water | 6.28663 | | 5.000000 | 0 | 126 | | 24-96 | A |
| Pyrene, Water | 6.25961 | | 5.000000 | 0 | 125 | | 52-127 | |
| 4-Nitrophenol, Water | 4.43602 | | 10.000000 | 0 | 44 | | 10-80 | |
| Pentachlorophenol, Water | 11.4044 | | 10.000000 | 0 | 114 | | 9-103 | A |
| Phenol, Water | 3.40316 | | 10.000000 | 0 | 34 | | 10-112 | |



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

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# QUALITY CONTROL RESULTS

Job Number.: 232359 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-SA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MS | Matrix Spike | SVS012802C | 232359-4 | | 03/18/2002 | 1512 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 5.96736 | | 5.000000 | 0.51219 | 109 | | 46-118 | |
| 2,4-Dinitrotoluene, Water | 6.38382 | | 5.000000 | 0 | 128 | | 24-96 | A |
| Pyrene, Water | 7.35839 | | 5.000000 | 0 | 147 | | 52-127 | A |
| 4-Nitrophenol, Water | 4.96048 | | 10.000000 | 0 | 50 | | 10-80 | |
| Pentachlorophenol, Water | 12.0509 | | 10.000000 | 0 | 121 | | 9-103 | A |
| Phenol, Water | 3.62186 | | 10.000000 | 0 | 36 | | 10-112 | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MSD | Matrix Spike Duplicate | SVS012802C | 232358-8 | | 03/15/2002 | 1302 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 2.17032 | 5.97540 | 5.000000 | 0 | 43 | | 46-118 | A |
| | | | | | 93.4 | | 31.0 | r |
| 2,4-Dinitrotoluene, Water | 2.13152 | 6.42342 | 5.000000 | 0 | 43 | | 24-96 | |
| | | | | | 100.3 | | 38.0 | r |
| Pyrene, Water | 2.64480 | 6.67160 | 5.000000 | 0 | 53 | | 52-127 | |
| | | | | | 86.4 | | 31.0 | r |
| 4-Nitrophenol, Water | 2.24140 | 5.22738 | 10.000000 | 0 | 22 | | 10-80 | |
| | | | | | 80.0 | | 50.0 | r |
| Pentachlorophenol, Water | 4.41106 | 12.3295 | 10.000000 | 0 | 44 | | 9-103 | |
| | | | | | 94.6 | | 50.0 | r |
| Phenol, Water | 1.45921 | 4.17534 | 10.000000 | 0 | 15 | | 10-112 | |
| | | | | | 96.4 | | 23.0 | r |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MSD | Matrix Spike Duplicate | SVS012802C | 232358-16 | | 03/15/2002 | 1658 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 4.90250 | 5.57405 | 5.000000 | 0 | 98 | | 46-118 | |
| | | | | | 12.8 | | 31.0 | |
| 2,4-Dinitrotoluene, Water | 5.38786 | 6.28663 | 5.000000 | 0 | 108 | | 24-96 | A |
| | | | | | 15.4 | | 38.0 | |
| Pyrene, Water | 5.90694 | 6.25961 | 5.000000 | 0 | 118 | | 52-127 | |
| | | | | | 5.8 | | 31.0 | |
| 4-Nitrophenol, Water | 4.05315 | 4.43602 | 10.000000 | 0 | 41 | | 10-80 | |
| | | | | | 9.0 | | 50.0 | |
| Pentachlorophenol, Water | 10.0167 | 11.4044 | 10.000000 | 0 | 100 | | 9-103 | |
| | | | | | 13.0 | | 50.0 | |
| Phenol, Water | 3.12822 | 3.40316 | 10.000000 | 0 | 31 | | 10-112 | |
| | | | | | 8.4 | | 23.0 | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MSD | Matrix Spike Duplicate | SVS012802C | 232359-5 | | 03/18/2002 | 1541 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 6.11988 | 5.96736 | 5.000000 | 0.51219 | 112 | | 46-118 | |
| | | | | | 2.5 | | 31.0 | |
| 2,4-Dinitrotoluene, Water | 6.11595 | 6.38382 | 5.000000 | 0 | 122 | | 24-96 | A |
| | | | | | 4.3 | | 38.0 | |
| Pyrene, Water | 6.73456 | 7.35839 | 5.000000 | 0 | 135 | | 52-127 | A |
| | | | | | 8.9 | | 31.0 | |



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



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QUALITY CONTROL RESULTS

Job Number.: 232359 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-SA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MSD | Matrix Spike Duplicate | SVS012802C | 232359-5 | | 03/18/2002 | 1541 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| 4-Nitrophenol, Water | 4.74794 | 4.96048 | 10.000000 | 0 | 47 | | 10-80 | |
| | | | | | 4.4 | | 50.0 | |
| Pentachlorophenol, Water | 11.3426 | 12.0509 | 10.000000 | 0 | 113 | | 9-103 | A |
| | | | | | 6.1 | | 50.0 | |
| Phenol, Water | 3.90740 | 3.62186 | 10.000000 | 0 | 39 | | 10-112 | |
| | | | | | 7.6 | | 23.0 | |

Test Method.....: SW-846 8260B Units.....: ug/L Analyst...: ydy
Method Description.: Volatile Organics Batch(s)...: 47550

| LCS | Laboratory Control Sample | VS030602E | 47550-1 | | 03/18/2002 | 1654 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 46.4173 | | 50.00 | ND | 92.8 | | 68-127 | |
| Bromodichloromethane, Water | 46.5357 | | 50.00 | ND | 93.1 | | 64-129 | |
| Bromoform, Water | 45.8269 | | 50.00 | ND | 91.7 | | 45-147 | |
| Bromomethane, Water | 46.4964 | | 50.00 | ND | 93.0 | | 32-143 | |
| Carbon Tetrachloride, Water | 41.9823 | | 50.00 | ND | 84.0 | | 54-140 | |
| Chlorobenzene, Water | 47.2411 | | 50.00 | ND | 94.5 | | 65-129 | |
| Chloroethane, Water | 59.2607 | | 50.00 | ND | 118.5 | | 47-157 | |
| Chloroform, Water | 48.2740 | | 50.00 | ND | 96.5 | | 71-131 | |
| Chloromethane, Water | 45.1342 | | 50.00 | ND | 90.3 | | 22-160 | |
| Dibromochloromethane, Water | 45.4029 | | 50.00 | ND | 90.8 | | 64-131 | |
| 1,2-Dichlorobenzene, Water | 45.8978 | | 50.00 | ND | 91.8 | | 59-133 | |
| 1,3-Dichlorobenzene, Water | 46.1155 | | 50.00 | ND | 92.2 | | 61-132 | |
| 1,4-Dichlorobenzene, Water | 46.3777 | | 50.00 | ND | 92.8 | | 46-142 | |
| 1,1-Dichloroethane, Water | 45.6762 | | 50.00 | ND | 91.4 | | 62-138 | |
| 1,2-Dichloroethane, Water | 47.5804 | | 50.00 | ND | 95.2 | | 65-133 | |
| 1,1-Dichloroethene, Water | 38.2453 | | 50.00 | ND | 76.5 | | 48-147 | |
| cis-1,2-Dichloroethene, Water | 44.5340 | | 50.00 | ND | 89.1 | | 61-129 | |
| trans-1,2-Dichloroethene, Water | 42.4631 | | 50.00 | ND | 84.9 | | 73-138 | |
| 1,2-Dichloropropane, Water | 46.8967 | | 50.00 | ND | 93.8 | | 60-124 | |
| Ethylbenzene, Water | 47.4806 | | 50.00 | ND | 95.0 | | 64-132 | |
| Methylene Chloride, Water | 41.4975 | | 50.00 | 2.47327 | 83.0 | | 54-133 | |
| Styrene, Water | 42.8171 | | 50.00 | ND | 85.6 | | 20-156 | |
| 1,1,2,2-Tetrachloroethane, Water | 47.4477 | | 50.00 | ND | 94.9 | | 70-130 | |
| Tetrachloroethene, Water | 43.0347 | | 50.00 | ND | 86.1 | | 59-134 | |
| Toluene, Water | 46.7301 | | 50.00 | ND | 93.5 | | 63-127 | |
| 1,1,1-Trichloroethane, Water | 43.2046 | | 50.00 | ND | 86.4 | | 70-130 | |
| 1,1,2-Trichloroethane, Water | 46.8116 | | 50.00 | ND | 93.6 | | 70-130 | |
| Trichloroethene, Water | 45.0520 | | 50.00 | ND | 90.1 | | 64-130 | |
| Vinyl Chloride, Water | 39.6447 | | 50.00 | ND | 79.3 | | 35-155 | |
| Xylenes (total), Water | 145.623 | | 150.00 | ND | 97.1 | | 37-161 | |
| m,p-Xylene, Water | 97.0041 | | 100.00 | ND | 97.0 | | 37-160 | |
| o-Xylene, Water | 48.6192 | | 50.00 | ND | 97.2 | | 37-161 | |
| Acetone, Water | 40.3375 | | 50.00 | ND | 80.7 | | 38-190 | |
| Carbon Disulfide, Water | 48.1103 | | 50.00 | ND | 96.2 | | 68-158 | |
| Methyl Ethyl Ketone (2-Butanone), Water | 44.6806 | | 50.00 | ND | 89.4 | | 38-186 | |
| cis-1,3-Dichloropropene, Water | 52.4732 | | 50.00 | ND | 104.9 | | 66-130 | |
| trans-1,3-Dichloropropene, Water | 49.0964 | | 50.00 | ND | 98.2 | | 71-139 | |
| 2-Hexanone, Water | 45.7509 | | 50.00 | ND | 91.5 | | 29-173 | |



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



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# QUALITY CONTROL RESULTS

Job Number.: 232359 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-SA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| LCS | Laboratory Control Sample | VS030602E | 47550-1 | | 03/18/2002 | 1654 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| 4-Methyl-2-pentanone (MIBK), Water | 47.1186 | | 50.00 | ND | 94.2 | | 40-144 | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | VS030602C | 47550-1 | | 03/18/2002 | 1720 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | ND | | | | | | | |
| Bromodichloromethane, Water | ND | | | | | | | |
| Bromoform, Water | ND | | | | | | | |
| Bromomethane, Water | ND | | | | | | | |
| Carbon Tetrachloride, Water | ND | | | | | | | |
| Chlorobenzene, Water | ND | | | | | | | |
| Chloroethane, Water | ND | | | | | | | |
| Chloroform, Water | ND | | | | | | | |
| Chloromethane, Water | ND | | | | | | | |
| Dibromochloromethane, Water | ND | | | | | | | |
| 1,2-Dibromo-3-chloropropane, Water | ND | | | | | | | |
| 1,2-Dibromoethane (EDB), Water | ND | | | | | | | |
| Dibromomethane, Water | ND | | | | | | | |
| 1,2-Dichlorobenzene, Water | ND | | | | | | | |
| 1,3-Dichlorobenzene, Water | ND | | | | | | | |
| 1,4-Dichlorobenzene, Water | ND | | | | | | | |
| Dichlorodifluoromethane, Water | ND | | | | | | | |
| 1,1-Dichloroethane, Water | ND | | | | | | | |
| 1,2-Dichloroethane, Water | ND | | | | | | | |
| 1,1-Dichloroethene, Water | ND | | | | | | | |
| 1,2-Dichloroethene (total), Water | ND | | | | | | | |
| cis-1,2-Dichloroethene, Water | ND | | | | | | | |
| trans-1,2-Dichloroethene, Water | ND | | | | | | | |
| 1,2-Dichloropropane, Water | ND | | | | | | | |
| Ethylbenzene, Water | ND | | | | | | | |
| Methylene Chloride, Water | 2.47327 | | | | | | | |
| Styrene, Water | ND | | | | | | | |
| 1,1,1,2-Tetrachloroethane, Water | ND | | | | | | | |
| 1,1,2,2-Tetrachloroethane, Water | ND | | | | | | | |
| Tetrachloroethene, Water | ND | | | | | | | |
| Toluene, Water | ND | | | | | | | |
| 1,1,1-Trichloroethane, Water | ND | | | | | | | |
| 1,1,2-Trichloroethane, Water | ND | | | | | | | |
| Trichloroethene, Water | ND | | | | | | | |
| Trichlorofluoromethane, Water | ND | | | | | | | |
| 1,2,3-Trichloropropane, Water | ND | | | | | | | |
| Vinyl Chloride, Water | ND | | | | | | | |
| Xylenes (total), Water | ND | | | | | | | |
| m,p-Xylene, Water | ND | | | | | | | |
| o-Xylene, Water | ND | | | | | | | |
| Acrolein, Water | ND | | | | | | | |
| Acetone, Water | ND | | | | | | | |
| Carbon Disulfide, Water | ND | | | | | | | |
| Acrylonitrile, Water | ND | | | | | | | |
| Vinyl Acetate, Water | ND | | | | | | | |
| Methyl Ethyl Ketone (2-Butanone), Water | ND | | | | | | | |
| Methyl Methacrylate, Water | ND | | | | | | | |



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QUALITY CONTROL RESULTS

Job Number.: 232359 Report Date.: 04/10/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-HWPW-SA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date Time |
|---|---|---|---|---|---|
| MB | Method Blank | VS030602C | 47550-1 | | 03/18/2002 1720 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene, Water | ND | | | | | | | |
| trans-1,3-Dichloropropene, Water | ND | | | | | | | |
| 2-Hexanone, Water | ND | | | | | | | |
| 4-Methyl-2-pentanone (MIBK), Water | ND | | | | | | | |
| Iodomethane, Water | ND | | | | | | | |
| trans-1,4-Dichloro-2-butene, Water | ND | | | | | | | |
| Allyl chloride, Water | ND | | | | | | | |
| Ethyl Methacrylate, Water | ND | | | | | | | |
| 2-Chloro-1,3-butadiene (chloroprene), Wa | ND | | | | | | | |
| Acetonitrile, Water | ND | | | | | | | |
| 1,4-Dioxane, Water | ND | | | | | | | |
| Propionitrile, Water | ND | | | | | | | |
| Isobutyl Alcohol, Water | ND | | | | | | | |
| Methacrylonitrile, Water | ND | | | | | | | |

| MS | Matrix Spike | VS030602F | 232359-4 | | 03/18/2002 2053 |
|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 49.3546 | | 50.00 | ND | 99 | | 65-125 | |
| Chlorobenzene, Water | 52.5930 | | 50.00 | ND | 105 | | 74-122 | |
| 1,1-Dichloroethene, Water | 47.6901 | | 50.00 | ND | 95 | | 22-123 | |
| Toluene, Water | 53.2204 | | 50.00 | ND | 106 | | 76-125 | |
| Trichloroethene, Water | 48.2304 | | 50.00 | ND | 96 | | 56-118 | |

| MSD | Matrix Spike Duplicate | VS030602F | 232359-5 | | 03/18/2002 2119 |
|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 50.5389 | 49.3546 | 50.00 | ND | 101 | | 65-125 | |
| | | | | | 2.4 | | 30.0 | |
| Chlorobenzene, Water | 53.6513 | 52.5930 | 50.00 | ND | 107 | | 74-122 | |
| | | | | | 2.0 | | 30.0 | |
| 1,1-Dichloroethene, Water | 46.9608 | 47.6901 | 50.00 | ND | 94 | | 22-123 | |
| | | | | | 1.5 | | 30.0 | |
| Toluene, Water | 54.7007 | 53.2204 | 50.00 | ND | 109 | | 76-125 | |
| | | | | | 2.7 | | 30.0 | |
| Trichloroethene, Water | 49.0037 | 48.2304 | 50.00 | ND | 98 | | 56-118 | |
| | | | | | 1.6 | | 30.0 | |



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# SURROGATE RECOVERIES REPORT

Job Number.: 232359 Report Date.: 04/10/2002

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

Method.....: Volatile Organics Method Code...: 8260 Prep Batch....:
Batch(s).....: 47550 Test Matrix...: Water Equipment Code: GCMSVOA06

| Lab ID | DT | Sample ID | Date | 12DCED | BRFLBE | DBRFLM | TOLD8 |
|---|---|---|---|---|---|---|---|
| 47550- 1 | LCS | | 03/18/2002 | 85.2 | 93.9 | 88.3 | 95.3 |
| 47550- 1 | MB | | 03/18/2002 | 88.6 | 90.8 | 94.4 | 87.6 |
| 232359- 1 | | MW-4-1SA02 | 03/18/2002 | 103.8 | 92.1 | 112.9 | 96.6 |
| 232359- 2 | | MW-11A-1SA02 | 03/18/2002 | 113.6 | 89.3 | 104.7 | 92.4 |
| 232359- 3 | | MW-10A-1SA02 | 03/18/2002 | 88.6 | 91.4 | 89.7 | 92.7 |
| 232359- 4 | | MW-10A-1SA02 MS | 03/18/2002 | 112.2 | 91.4 | 103.9 | 90.7 |
| 232359- 4 | MS | MW-10A-1SA02 MS | 03/18/2002 | 112.2 | 91.4 | 103.9 | 90.7 |
| 232359- 5 | | MW-10A-1SA02 MSD | 03/18/2002 | 114.4 | 92.4 | 103.9 | 92.3 |
| 232359- 5 | MSD | MW-10A-1SA02 MSD | 03/18/2002 | 114.4 | 92.4 | 103.9 | 92.3 |
| 232359- 6 | | MW08-1SA02 | 03/18/2002 | 119.6 | 107.0 | 110.7 | 100.4 |
| 232359- 7 | | TB031202-1SA02 | 03/18/2002 | 118.1 | 102.1 | 108.3 | 105.2 |
| 232359- 8 | | MW-07-1SA02 | 03/18/2002 | 102.6 | 92.2 | 98.7 | 91.8 |

| Test | Test Description | Limits |
|---|---|---|
| 12DCED | 1,2-Dichloroethane-d4 | 70 - 130 |
| BRFLBE | 4-Bromofluorobenzene | 70 - 130 |
| DBRFLM | Dibromofluoromethane | 70 - 130 |
| TOLD8 | Toluene-d8 | 70 - 130 |



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# SURROGATE RECOVERIES REPORT

Job Number.: 232359 Report Date.: 04/10/2002

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

Method.....: Semivolatile Organics, Low Level Method Code...: 8270LL Prep Batch....: 47365
Batch(s).....: 47812 Test Matrix...: Water Equipment Code: EGCMS07

| Lab ID | DT | Sample ID | Date | 246TBP | 2FLUBP | 2FLUPH | NITRD5 | PHEND6 | TERD14 |
|---|---|---|---|---|---|---|---|---|---|
| LCS | | | 03/15/2002 | 105 | 98 | 63 | 97 | 39 | 100 |
| MB | | | 03/15/2002 | 100 | 96 | 61 | 98 | 34 | 103 |
| 232358- 7 | MS | MW-29C-RFI MS | 03/15/2002 | 110 | 107 | 67 | 106 | 40 | 92 |
| 232358- 8 | MSD | MW-29C-RFI MSD | 03/15/2002 | 45 | 43 | 27 | 40 | 15 | 41 |
| 232358- 15 | MS | MW-28A-RFI MS | 03/15/2002 | 104 | 93 | 49 | 88 | 33 | 86 |
| 232358- 16 | MSD | MW-28A-RFI MSD | 03/15/2002 | 93 | 83 | 50 | 77 | 27 | 82 |
| 232359- 1 | | MW-4-1SA02 | 03/18/2002 | 114 | 98 | 58 | 87 | 35 | 103 |
| 232359- 2 | | MW-11A-1SA02 | 03/18/2002 | 125G | 115 | 73 | 113 | 41 | 82 |
| 232359- 2 | | MW-11A-1SA02 | 03/20/2002 | 161D | 145D | 62 | 124D | 46 | 113 |
| 232359- 2 | | MW-11A-1SA02 | 03/20/2002 | 171D | 163D | 56 | 133D | 49 | 131 |
| 232359- 3 | | MW-10A-1SA02 | 03/18/2002 | 106 | 94 | 62 | 88 | 34 | 93 |
| 232359- 4 | | MW-10A-1SA02 MS | 03/18/2002 | 112 | 94 | 58 | 84 | 32 | 98 |
| 232359- 4 | MS | MW-10A-1SA02 MS | 03/18/2002 | 112 | 94 | 58 | 84 | 32 | 98 |
| 232359- 5 | | MW-10A-1SA02 MSD | 03/18/2002 | 103 | 97 | 65 | 92 | 35 | 91 |
| 232359- 5 | MSD | MW-10A-1SA02 MSD | 03/18/2002 | 103 | 97 | 65 | 92 | 35 | 91 |
| 232359- 6 | | MW08-1SA02 | 03/18/2002 | 108 | 99 | 65 | 96 | 37 | 95 |
| 232359- 8 | | MW-07-1SA02 | 03/18/2002 | 94 | 85 | 59 | 84 | 35 | 85 |

| Test | Test Description | Limits |
|---|---|---|
| 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 |



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# SURROGATE RECOVERIES REPORT

Job Number.: 232359 Report Date.: 04/10/2002

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

Method.....: Semivolatile Organics - SIM Analysis Method Code...: 8270SI Prep Batch....: 47365
Batch(s).....: 47791 Test Matrix...: Water Equipment Code: EGCMS06

| Lab ID | DT | Sample ID | Date | 246TBP | 2FLUBP | 2FLUPH | NITRD5 | PHEND6 | TERD14 |
|---|---|---|---|---|---|---|---|---|---|
| 232359- 4 | | MW-10A-1SA02 MS | 03/18/2002 | 112 | 94 | 58 | 84 | 32 | 98 |
| 232359- 5 | | MW-10A-1SA02 MSD | 03/18/2002 | 103 | 97 | 65 | 92 | 35 | 91 |

| Test | Test Description | Limits |
|---|---|---|
| 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 |



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# QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 04/10/2002

### 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.

General Information:

- Cresylic Acid is the combination of o,m and p-Cresol. The combination is reportesd 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, maybe detected as diphenylamine.

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.
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.
O - Sample required dilution due to matrix interference.
D - Sample reported from a dilution.
d - Spike and/or surrogate diluted out.
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.
CC - Continuing Calibration Verification (CCV) standard is not associated with the samples reported.
M1 - 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.
K1 - See case narrative.



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# QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 04/10/2002

Explanation of Organic QC Outliers:

E - Method blank analysis yielded methylene chloride and/or acetone concentrations above the RL. 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.
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.
N1 - Gaseous compound. In-house QC limits are advisory.
P1 - Ketone compounds have poor purge efficiency. In-house QC limits are advisory.
S1 - Surrogate not associated with reported analytes.

Explanation of Inorganic QC Outliers:

b - Target analyte was found in the method blank. This analyte was not detected above the RL in the sample.
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.
3a - 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.
S - 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 - 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.

Abbreviations:

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



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# QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 04/10/2002

ND - Not Detected
PB - Preparation Blank
PREPF - Preparation factor
RPD - Relative Percent Difference
RRF - Relative Response Factor
RT - Retention Time

Method References:

(1) EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.
(2) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1193; Update IIB, January 1995; Update III, December 1996.
(3) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989),
(4) HACH Water Analysis Handbook 3rd Edition (1997).
(5) Federal Register, July 1, 1990 (40 CFR Part 136).
(6) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.
(7) ASTM Annual Book of Methods (Various Years)
(8) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.



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SEVERN TRENT SERVICES

STL Houston

# LABORATORY CHRONICLE

Job Number: 232359 Date: 04/10/2002

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

Lab ID: 232359-1 Client ID: MW-4-1SA02 Date Recvd: 03/13/2002 Sample Date: 03/11/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| | Data Package Validataion | 1 | 48877 | | 04/10/2002 | 0000 | |
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47365 | | 03/14/2002 | 0800 | |
| | GC/MS Semi-Volatile Package Production | 1 | 48821 | | | | |
| | GC/MS Volatiles Data Package Production | 1 | 47846 | | 03/22/2002 | 1700 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47791 | 47365 | 03/15/2002 | 1545 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47812 | 47365 | 03/18/2002 | 1346 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47550 | | 03/18/2002 | 2146 | 1.00000 |

Lab ID: 232359-2 Client ID: MW-11A-1SA02 Date Recvd: 03/13/2002 Sample Date: 03/11/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47365 | | 03/14/2002 | 0800 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47791 | 47365 | 03/15/2002 | 1613 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47812 | 47365 | 03/18/2002 | 1414 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47812 | 47365 | 03/20/2002 | 1052 | 5.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47812 | 47365 | 03/20/2002 | 1149 | 20.0000 |
| SW-846 8260B | Volatile Organics | 1 | 47550 | | 03/18/2002 | 2213 | 1.00000 |

Lab ID: 232359-3 Client ID: MW-10A-1SA02 Date Recvd: 03/13/2002 Sample Date: 03/12/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47365 | | 03/14/2002 | 0800 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47791 | 47365 | 03/15/2002 | 1641 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47812 | 47365 | 03/18/2002 | 1443 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47550 | | 03/18/2002 | 2027 | 1.00000 |

Lab ID: 232359-4 Client ID: MW-10A-1SA02 MS Date Recvd: 03/13/2002 Sample Date: 03/12/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47365 | | 03/14/2002 | 0800 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47791 | 47365 | 03/15/2002 | 1708 | 1.00000 |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47791 | 47365 | 03/18/2002 | 1512 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47812 | 47365 | 03/18/2002 | 1512 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47550 | | 03/18/2002 | 2053 | 1.00000 |

Lab ID: 232359-5 Client ID: MW-10A-1SA02 MSD Date Recvd: 03/13/2002 Sample Date: 03/12/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47365 | | 03/14/2002 | 0800 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47791 | 47365 | 03/15/2002 | 1736 | 1.00000 |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47791 | 47365 | 03/18/2002 | 1541 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47812 | 47365 | 03/18/2002 | 1541 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47550 | | 03/18/2002 | 2119 | 1.00000 |

Lab ID: 232359-6 Client ID: MW08-1SA02 Date Recvd: 03/13/2002 Sample Date: 03/12/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47365 | | 03/14/2002 | 0800 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47791 | 47365 | 03/15/2002 | 1804 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47812 | 47365 | 03/18/2002 | 1610 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47550 | | 03/18/2002 | 2239 | 1.00000 |

Lab ID: 232359-7 Client ID: TB031202-1SA02 Date Recvd: 03/13/2002 Sample Date: 03/12/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 8260B | Volatile Organics | 1 | 47550 | | 03/18/2002 | 1908 | 1.00000 |

Lab ID: 232359-8 Client ID: MW-07-1SA02 Date Recvd: 03/13/2002 Sample Date: 03/11/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47365 | | 03/14/2002 | 0800 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47791 | 47365 | 03/15/2002 | 1832 | 0.50000 |



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LABORATORY CHRONICLE

Job Number: 232359 Date: 04/10/2002

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

Lab ID: 232359-8 Client ID: MW-07-1SA02 Date Recvd: 03/13/2002 Sample Date: 03/11/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47812 | 47365 | 03/18/2002 | 1639 | 0.50000 |
| SW-846 8260B | Volatile Organics | 1 | 47550 | | 03/18/2002 | 2305 | 1.00000 |



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6310 Rothway Center
Houston, TX 77040
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❶ Company: ERM - SOUTHWEST

Address: 16300 KATY FRWY. STE. 300 HOU. TX

Tele #: 281.600.1000

Fax #: 281.600.1001

Reports Sent To: CHRISTOPHER YOUNG

P O #:

Project #: 422-102-60

Project Name: UPRR - FIRST SEMIANNUAL

Project Location: HWPN - IMPOUNDMENT

Sampler(s) Name: (Signature) TRISTRAM DODDS

Courier:

❺ Request for Analysis

| ❷ Field Sample ID | ❸ Sampling Date | ❸ Sampling Time | ❹ Matrix: Water | Soil | Sludge | Oil | Other | # of Containers | Haz. Sample (Y/N) | VOCs 8260B | TCL VOCs 8260B | TCL SVOCs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW-4-1SA02 | 03/11/02 | 1445 | X | | | | | 5 | N | X | X | X |
| 2. MW-11A-1SA02 | 03/11/02 | 1655 | X | | | | | 5 | N | X | X | X |
| 3. MW-10A-1SA02 | 03/12/02 | 1505 | X | | | | | 5 | N | X | X | X |
| 4. MW-10A MS1SA02 | 03/12/02 | 1505 | X | | | | | 5 | N | X | X | X |
| 5. MW-10A MSD1SA02 | 03/12/02 | 1505 | X | | | | | 5 | N | X | X | X |
| 6. MW08-1SA02 | 3/12/02 | | X | | | | | 5 | N | X | X | X |
| 7. TB031202-1SA02 | 3/12/02 | | X | | | | | 2 | N | X | | |
| 8. MW07-1SA02 | 03/11/02 | 1625 | X | | | | | 5 | N | X | X | X |
| 9. | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | |
| 11. | | | | | | | | | | | | |
| 12. | | | | | | | | | | | | |
| 13. | | | | | | | | | | | | |

❼ Relinquished by Sampler: (Signature) — Date: — Time:

Relinquished by: (Signature) — Date: 3/13/02 — Time: 12:31

Received by: (Signature)

Relinquished by: (Signature) — Date: 3/13/02 — Time: 1815

Received by: (Signature) — Date: 3/13/02 — Time: 9:30

Received by Laboratory: (Signature) 89 — Date: 3/13/02 — Time: 1031

❻ Remarks:

Requested Turnaround: STANDARD

GSAI Group: 232359

Special Detection Limits: SEE PROJECT REQUIREMENTS

QC Package: (check one)
☒ CLP ☐ Site Specific
☐ Tier 1 ☐ Tier 2 ☐ QC Summary

White Copy to Accompany Samples to Lab — Yellow Copy Retained by Client — Pink Copy Retained by Sampler

rpjsckl | Job Sample Receipt Checklist Report | V2

Job Number.: 232359 Location.: 57216 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: 03/13/2002 Date of the Report..: 03/13/2002
Project Number.: 99000485 Project Description.: UPRR-HWPW-SA Project Manager.....: sgk
Customer.....: ERM Southwest, Inc.- Houston Contact.: Chris Young

| Questions ? | (Y/N) | Comments |
|---|---|---|
| Chain of Custody Received? | Y | |
| ...If "yes", completed properly? | Y | |
| Custody seal on shipping container? | Y | |
| ...If "yes", custody seal intact? | Y | |
| Custody seals on sample containers? | N | |
| ...If "yes", custody seal intact? | | |
| Samples chilled? | Y | |
| Temperature of cooler acceptable? (4 deg C +/- 2). | Y | 2.7, 2.1, 2.6, 2.5, 2.3, 3.1 |
| Thermometer ID | | 255 |
| Samples received intact (good condition)? | Y | |
| Volatile samples acceptable? (no headspace) | Y | |
| Correct containers used? | Y | |
| Adequate sample volume provided? | Y | |
| Samples preserved correctly? | Y | |
| Samples received within holding-time? | Y | |
| Agreement between COC and sample labels? | Y | |
| Radioactivity at or below background levels? | Y | |
| Additional | | |
| Comments | | |
| Sample Custodian Signature/Date | | 3-13-02 |

STL HOUSTON
SAMPLE RECEIPT CHECKLIST

CLIENT ERMSW | CONTACT CY
PROJECT UPRR 1tWPW | CARRIER STL
DATE SHIPPED 3-13-02 | UNPACKED BY
DATE RECEIVED 2002 MAR 13 PM 12:30 | UNPACKED STL 2002 MAR 13 PM 6:53
NUMBER OF KITS RECEIVED: 6 | JOB# 232359

KIT CHECKLIST

| KIT ID | COC PRESENT | CUSTODY TAPE | | COOLER TEMP Thermometer # 258 | # OF SAMPLE CONTAINERS |
|---|---|---|---|---|---|
| | | PRESENT? | INTACT? | | |
| RW 1573 | Yes | C Yes | Yes | 2.7°C | 42 |
| | | B No | No | | |
| RW 363 | Yes | C Yes | Yes | 2.1°C | 12 |
| | | B No | No | | |
| BW 1088 | Yes | C Yes | Yes | 2.6°C | 10 |
| | | B No | No | | |

C = COOLER S = BOTTLES

SAMPLE CHECKS

pH OF WATER SAMPLES CHECKED? Yes ✓ No ___ SAMPLE(S) SCREENED FOR RADIATION? Yes ✓ No ___

VOLATILE HEAD SPACE CHECKED? Yes ✓ No ___

SHORT HOLD / RUSH SAMPLES (include department delivered to and time delivered)

INCONSISTENCIES

ACTION TAKEN

PERSON CONTACTED: ___ DATE: ___
RESOLUTION ___

EMPLOYEE ___ DATE: ___

☐ $HNO_3$ ☐ HCl 79 ☐ $H_2SO_4$ ☐ NaOH 58 ☐ $Na_2S_2O_3$ ☐ NEAT ☐ $NaHSO_4$ ☐ OT/PRE:
(Water Only)

79 VOA
0 Other

___ VOA
___ Other

| # Cont. | Matrix |
|---|---|
| 37 | WA |
| | |
| | |
| Total 37 | |

NOTES ___

Project Manager ___



SA 132, Rev 3, 3/00

STL [illegible]
SAMPLE RE[illegible] CHECKLIST

CLIE _____ CONTACT _____

PRC _____ CARRIER ST[illegible]

DAT[illegible] PED _____ UNPACKED BY _____

DAT[illegible] EIVED 2002 MAR 13 PM 12:31 UNPACKED STAMP 2002 MAR 13 PM 6:33

NUM[illegible] F KITS RECEIVED: _____ JOB# _____ S.O.# _____

KIT CHECKLIST

| | COC PRESENT | CUSTODY TAPE | | COOLER TEMP Thermometer 255 | # OF SAMPLE CONTAINERS |
|---|---|---|---|---|---|
| | | PRESENT? | INTACT? | | |
| R1 | Yes | C Yes | Yes | 2.5°C | 10 |
| | | B | | | |
| B | Yes | C Yes | Yes | 2.2°C | 10 |
| | | B | | | |
| B | Yes | C Yes | Yes | 3.1°C | 27 |
| | | B | | | |

C = C[illegible]ER B = BOTTLES

SAMPLE CHECKS

pH O[illegible]TER SAMPLES CHECKED? Yes___ No___ SAMPLE(S) SCREENED FOR RADIATION? Yes___ No___

VOLA[illegible] HEAD SPACE CHECKED? Yes___ No___

SHORT HOLD / RUSH SAMPLES (include department delivered to and time delivered)

___ _____

___ _____

INCONSISTENCIES

___ _____

___ _____

___ _____

ACTION TAKEN

PERS[illegible] CONTACTED: _____ DATE: _____

RESO[illegible]TION _____

___ _____

EMPL[illegible]EE _____ DATE: _____

☐ H[illegible] ☐ HCL ☐ $H_2SO_4$ ☐ NaOH ☐ $Na_2S_2O_3$ ☐ NEAT ☐ $NaHSO_4$ ☐ OT/PRE.

(Water Only)

___VOA ___[illegible]OA

___Other ___[illegible]ther

| # Cont. | Matrix |
|---|---|
| | |
| | |
| | |
| Total__ | |

NOT _____ _____

___ _____ _____

Proj[illegible]nager _____

SEVERN TRENT SERVICES

STL Houston

REVISED

# ANALYTICAL REPORT

JOB NUMBER: 232390

Prepared For:

ERM Southwest, Inc.- Houston
16300 Katy Freeway
Suite 300
Houston, TX 77094-1611

Attention: Chris Young

Date: 07/01/2002


Signature

07/01/02
Date

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail: [redacted]

Severn Trent Laboratories
6310 Rothway Drive
Houston, TX 77040

PHONE: (713) 690-4444


TOTAL NO. OF PAGES 35

SEVERN TRENT SERVICES
STL Houston

# REVISED

07/01/2002

Chris Young
ERM Southwest, Inc.- Houston
16300 Katy Freeway
Suite 300
Houston, TX 77094-1611

Project : UPRR-HWPW
Project No. : 232390
Date Received : 03/14/2002
STL Job : 232390

Dear Chris Young:

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

1. MW10B-15A02
2. MW03-15A02
3. MW03 MS-15A02
4. MW03 MSD-15A02
5. P10-15A02
6. P10D-15A02
7. MW02-15A02
8. MW02D-15A02
9. TB03102-15A02

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 are noted in the case narrative. The case narrative is an integral 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



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SEVERN TRENT SERVICES
STL Houston

REVISED

SAMPLE INFORMATION
Date: 07/01/2002

Job Number.: 232390
Customer...: ERM Southwest, Inc.- Houston
Attn.....: Chris Young

Project Number.....: 99000484
Customer Project ID....: UPRR-FIRST SEMIANNUA
Project Description....: UPRR-HWPW

| Laboratory Sample ID | Customer Sample ID | Sample Matrix | Date Sampled | Time Sampled | Date Received | Time Received |
|---|---|---|---|---|---|---|
| 232390-1 | MW10B-1SA02<br>10B | Water | 03/13/2002 | 11:45 | 03/14/2002 | 11:34 |
| 232390-2 | MW03-1SA02<br>03 | Water | 03/13/2002 | 14:57 | 03/14/2002 | 11:34 |
| 232390-3 | MW03 MS-1SA02<br>03 MS | Water | 03/13/2002 | 14:52 | 03/14/2002 | 11:34 |
| 232390-4 | MW03 MSD-1SA02<br>03 MSD | Water | 03/13/2002 | 14:47 | 03/14/2002 | 11:34 |
| 232390-5 | P10-1SA02<br>P10 | Water | 03/13/2002 | 15:00 | 03/14/2002 | 11:34 |
| 232390-6 | P10D-1SA02<br>P10D | Water | 03/13/2002 | 14:55 | 03/14/2002 | 11:34 |
| 232390-7 | MW02-1SA02<br>02 | Water | 03/13/2002 | 16:57 | 03/14/2002 | 11:34 |
| 232390-8 | MW02D-1SA02<br>02D | Water | 03/13/2002 | 17:02 | 03/14/2002 | 11:34 |
| 232390-9 | TB03102-1SA02<br>TB031 | Trip Blank | 03/13/2002 | 00:01 | 03/14/2002 | 11:34 |



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# LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: MW10B-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 11:45
Sample Matrix.....: Water

Laboratory Sample ID: 232390-1
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47448 | | 03/15/02 0700 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.03 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47816 | | 03/18/02 1315 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47816 | | 03/18/02 1315 | lg1 |
| | 2,4-Dinitrotoluene, Water | 0.02 | U | | 0.02 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1315 | lg1 |
| | 2,6-Dinitrotoluene, Water | 0.03 | U | | 0.03 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1315 | lg1 |
| | Pentachlorophenol, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1315 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 0.05 | U | | 0.05 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1315 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 73 | | | 0.5 | 3 | 2.00000 | ug/L | 47817 | | 03/20/02 1217 | lg1 |
| | Acenaphthylene, Water | 1 | J | | 0.2 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Anthracene, Water | 4 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Benzo(a)anthracene, Water | 0.4 | U | | 0.4 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.6 | J | | 0.5 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | 2-Chloronaphthalene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Chrysene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Dibenzofuran, Water | 32 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.4 | U | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Fluoranthene, Water | 3 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Fluorene, Water | 44 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | 2-Methylnaphthalene, Water | 1 | J | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Naphthalene, Water | 75 | | | 0.7 | 4 | 2.00000 | ug/L | 47817 | | 03/20/02 1217 | lg1 |
| | Nitrobenzene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | n-Nitrosodiphenylamine, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Phenanthrene, Water | 23 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Pyrene, Water | 2 | J | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |

96

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232390 Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Customer Sample ID: MW10B-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 11:45
Sample Matrix.....: Water

Laboratory Sample ID: 232390-1
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 0.7 | J | | 0.1 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 2 | U | | 2 | 10 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | 4-Nitrophenol, Water | 1 | U | | 1 | 7 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| | Phenol, Water | 0.2 | U | | 0.2 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 0955 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2332 | ydy |
| | Chlorobenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2332 | ydy |
| | 1,2-Dichloroethane, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2332 | ydy |
| | Ethylbenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2332 | ydy |
| | Methylene Chloride, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2332 | ydy |
| | Toluene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2332 | ydy |
| | Xylenes (total), Water | 5 | U | | 5 | 15 | 1.00000 | ug/L | 47642 | | 03/18/02 2332 | ydy |

97

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REVISED

LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: MW03-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 14:57
Sample Matrix.....: Water

Laboratory Sample ID: 232390-2
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47448 | | 03/15/02 0700 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.03 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47816 | | 03/18/02 1343 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47816 | | 03/18/02 1343 | lg1 |
| | 2,4-Dinitrotoluene, Water | 0.02 | U | | 0.02 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1343 | lg1 |
| | 2,6-Dinitrotoluene, Water | 0.03 | U | | 0.03 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1343 | lg1 |
| | Pentachlorophenol, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1343 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 0.05 | U | | 0.05 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1343 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 160 | | | 1 | 6 | 4.00000 | ug/L | 47817 | | 03/20/02 1246 | lg1 |
| | Acenaphthylene, Water | 2 | | | 0.2 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Anthracene, Water | 3 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Benzo(a)anthracene, Water | 0.4 | U | | 0.4 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.8 | J | | 0.5 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | 2-Chloronaphthalene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Chrysene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Dibenzofuran, Water | 42 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.4 | U | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Fluoranthene, Water | 12 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Fluorene, Water | 80 | | | 1 | 6 | 4.00000 | ug/L | 47817 | | 03/20/02 1246 | lg1 |
| | 2-Methylnaphthalene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Naphthalene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Nitrobenzene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | n-Nitrosodiphenylamine, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Phenanthrene, Water | 0.5 | J | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Pyrene, Water | 6 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |

96
98

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LABORATORY TEST RESULTS

Job Number: 232390 Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Customer Sample ID: MW03-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 14:57
Sample Matrix.....: Water

Laboratory Sample ID: 232390-2
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 0.1 | U | | 0.1 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 2 | U | | 2 | 10 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | 4-Nitrophenol, Water | 1 | U | | 1 | 7 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| | Phenol, Water | 0.2 | U | | 0.2 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1023 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1400 | ydy |
| | Chlorobenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1400 | ydy |
| | 1,2-Dichloroethane, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1400 | ydy |
| | Ethylbenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1400 | ydy |
| | Methylene Chloride, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1400 | ydy |
| | Toluene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1400 | ydy |
| | Xylenes (total), Water | 5 | U | | 5 | 15 | 1.00000 | ug/L | 47642 | | 03/19/02 1400 | ydy |

99

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LABORATORY TEST RESULTS

Job Number: 232390 Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Customer Sample ID: MW03 MS-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 14:52
Sample Matrix.....: Water

Laboratory Sample ID: 232390-3
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47448 | | 03/15/02 0700 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.03 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47816 | | 03/18/02 1410 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47816 | | 03/18/02 1410 | lg1 |
| | 2,4-Dinitrotoluene, Water | 12 | | | 0.02 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1052 | lg1 |
| | 2,6-Dinitrotoluene, Water | 0.03 | U | | 0.03 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1410 | lg1 |
| | Pentachlorophenol, Water | 22 | | | 0.2 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1052 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 0.05 | U | | 0.05 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1410 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 160 | | | 1 | 6 | 4.00000 | ug/L | 47817 | | 03/20/02 1315 | lg1 |
| | Acenaphthylene, Water | 2 | | | 0.2 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Anthracene, Water | 3 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Benzo(a)anthracene, Water | 0.4 | U | | 0.4 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.9 | J | | 0.5 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | 2-Chloronaphthalene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Chrysene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Dibenzofuran, Water | 40 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.4 | U | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Fluoranthene, Water | 11 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Fluorene, Water | 76 | | | 1 | 6 | 4.00000 | ug/L | 47817 | | 03/20/02 1315 | lg1 |
| | 2-Methylnaphthalene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Naphthalene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Nitrobenzene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | n-Nitrosodiphenylamine, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Phenanthrene, Water | 0.4 | J | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Pyrene, Water | 17 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |

100

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LABORATORY TEST RESULTS

Job Number: 232390 Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Customer Sample ID: MW03 MS-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 14:52
Sample Matrix.....: Water

Laboratory Sample ID: 232390-3
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 0.1 | U | | 0.1 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 2 | U | | 2 | 10 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | 4-Nitrophenol, Water | 10 | | | 1 | 7 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| | Phenol, Water | 8 | | | 0.2 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1052 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 49 | | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1426 | ydy |
| | Chlorobenzene, Water | 52 | | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1426 | ydy |
| | 1,2-Dichloroethane, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1426 | ydy |
| | Ethylbenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1426 | ydy |
| | Methylene Chloride, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1426 | ydy |
| | Toluene, Water | 50 | | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1426 | ydy |
| | Xylenes (total), Water | 5 | U | | 5 | 15 | 1.00000 | ug/L | 47642 | | 03/19/02 1426 | ydy |

101

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REVISED

LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: MW03 MSD-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 14:47
Sample Matrix.....: Water

Laboratory Sample ID: 232390-4
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47448 | | 03/15/02 0700 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.03 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47816 | | 03/18/02 1438 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47816 | | 03/18/02 1438 | lg1 |
| | 2,4-Dinitrotoluene, Water | 11 | | | 0.02 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1121 | lg1 |
| | 2,6-Dinitrotoluene, Water | 0.03 | U | | 0.03 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1438 | lg1 |
| | Pentachlorophenol, Water | 22 | | | 0.2 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1121 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 0.05 | U | | 0.05 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1438 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 170 | | | 1 | 6 | 4.00000 | ug/L | 47817 | | 03/20/02 1343 | lg1 |
| | Acenaphthylene, Water | 2 | | | 0.2 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Anthracene, Water | 3 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Benzo(a)anthracene, Water | 0.4 | U | | 0.4 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.6 | J | | 0.5 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | 2-Chloronaphthalene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Chrysene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Dibenzofuran, Water | 44 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.4 | U | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Fluoranthene, Water | 11 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Fluorene, Water | 82 | | | 1 | 6 | 4.00000 | ug/L | 47817 | | 03/20/02 1343 | lg1 |
| | 2-Methylnaphthalene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Naphthalene, Water | 0.6 | J | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Nitrobenzene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | n-Nitrosodiphenylamine, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Phenanthrene, Water | 0.3 | J | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Pyrene, Water | 18 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |

102

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: MW03 MSD-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 14:47
Sample Matrix.....: Water

Laboratory Sample ID: 232390-4
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 0.1 | U | | 0.1 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 2 | U | | 2 | 10 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | 4-Nitrophenol, Water | 12 | | | 1 | 7 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| | Phenol, Water | 8 | | | 0.2 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1121 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 44 | | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1453 | ydy |
| | Chlorobenzene, Water | 46 | | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1453 | ydy |
| | 1,2-Dichloroethane, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1453 | ydy |
| | Ethylbenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1453 | ydy |
| | Methylene Chloride, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1453 | ydy |
| | Toluene, Water | 46 | | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 1453 | ydy |
| | Xylenes (total), Water | 5 | U | | 5 | 15 | 1.00000 | ug/L | 47642 | | 03/19/02 1453 | ydy |

103

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LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: P10-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 15:00
Sample Matrix.....: Water

Laboratory Sample ID: 232390-5
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47448 | | 03/15/02 0700 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.03 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47816 | | 03/18/02 1506 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47816 | | 03/18/02 1506 | lg1 |
| | 2,4-Dinitrotoluene, Water | 0.02 | U | | 0.02 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1506 | lg1 |
| | 2,6-Dinitrotoluene, Water | 0.03 | U | | 0.03 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1506 | lg1 |
| | Pentachlorophenol, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1506 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 0.05 | U | | 0.05 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1506 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 360 | | | 5 | 30 | 20.00000 | ug/L | 47817 | | 03/20/02 1509 | lg1 |
| | Acenaphthylene, Water | 2 | | | 0.2 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | Anthracene, Water | 12 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | Benzo(a)anthracene, Water | 0.4 | U | | 0.4 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 1 | J | | 0.5 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | 2-Chloronaphthalene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | Chrysene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | Dibenzofuran, Water | 140 | | | 1 | 6 | 4.00000 | ug/L | 47817 | | 03/20/02 1412 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.4 | U | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | Fluoranthene, Water | 8 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | Fluorene, Water | 170 | | | 1 | 6 | 4.00000 | ug/L | 47817 | | 03/20/02 1412 | lg1 |
| | 2-Methylnaphthalene, Water | 99 | | | 1 | 6 | 4.00000 | ug/L | 47817 | | 03/20/02 1412 | lg1 |
| | Naphthalene, Water | 2300 | | | 34 | 200 | 100.0000 | ug/L | 47817 | | 03/20/02 1636 | lg1 |
| | Nitrobenzene, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | n-Nitrosodiphenylamine, Water | 0.3 | U | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | Phenanthrene, Water | 96 | | | 1 | 6 | 4.00000 | ug/L | 47817 | | 03/20/02 1412 | lg1 |
| | Pyrene, Water | 3 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |

104

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LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: P10-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 15:00
Sample Matrix.....: Water

Laboratory Sample ID: 232390-5
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 0.1 | U | | 0.1 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 2 | U | | 2 | 10 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | 4-Nitrophenol, Water | 1 | U | | 1 | 7 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| | Phenol, Water | 0.2 | U | | 0.2 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1150 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2358 | ydy |
| | Chlorobenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2358 | ydy |
| | 1,2-Dichloroethane, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2358 | ydy |
| | Ethylbenzene, Water | 9 | | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2358 | ydy |
| | Methylene Chloride, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2358 | ydy |
| | Toluene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/18/02 2358 | ydy |
| | Xylenes (total), Water | 5 | J | | 5 | 15 | 1.00000 | ug/L | 47642 | | 03/18/02 2358 | ydy |

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LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: P10D-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 14:55
Sample Matrix.....: Water

Laboratory Sample ID: 232390-6
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47448 | | 03/15/02 0700 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.03 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47816 | | 03/18/02 1533 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47816 | | 03/18/02 1533 | lg1 |
| | 2,4-Dinitrotoluene, Water | 0.02 | U | | 0.02 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1533 | lg1 |
| | 2,6-Dinitrotoluene, Water | 0.03 | U | | 0.03 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1533 | lg1 |
| | Pentachlorophenol, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1533 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 0.05 | U | | 0.05 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1533 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 310 | | | 3 | 14 | 10.00000 | ug/L | 47817 | | 03/20/02 1538 | lg1 |
| | Acenaphthylene, Water | 1 | | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | Anthracene, Water | 13 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | Benzo(a)anthracene, Water | 0.4 | U | | 0.4 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.5 | U | | 0.5 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | 2-Chloronaphthalene, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | Chrysene, Water | 0.3 | U | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | Dibenzofuran, Water | 120 | | | 1 | 7 | 5.00000 | ug/L | 47817 | | 03/20/02 1441 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.4 | U | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | Fluoranthene, Water | 10 | | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | Fluorene, Water | 180 | | | 1 | 7 | 5.00000 | ug/L | 47817 | | 03/20/02 1441 | lg1 |
| | 2-Methylnaphthalene, Water | 90 | | | 1 | 7 | 5.00000 | ug/L | 47817 | | 03/20/02 1441 | lg1 |
| | Naphthalene, Water | 2200 | | | 32 | 190 | 100.0000 | ug/L | 47817 | | 03/20/02 1607 | lg1 |
| | Nitrobenzene, Water | 0.3 | U | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | n-Nitrosodiphenylamine, Water | 0.3 | U | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | Phenanthrene, Water | 120 | | | 1 | 7 | 5.00000 | ug/L | 47817 | | 03/20/02 1441 | lg1 |
| | Pyrene, Water | 4 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |

109

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REVISED

LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: P10D-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 14:55
Sample Matrix.....: Water

Laboratory Sample ID: 232390-6
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 0.1 | U | | 0.1 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 2 | U | | 2 | 10 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | 4-Nitrophenol, Water | 1 | U | | 1 | 6 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| | Phenol, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1219 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0024 | ydy |
| | Chlorobenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0024 | ydy |
| | 1,2-Dichloroethane, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0024 | ydy |
| | Ethylbenzene, Water | 12 | | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0024 | ydy |
| | Methylene Chloride, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0024 | ydy |
| | Toluene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0024 | ydy |
| | Xylenes (total), Water | 6 | J | | 5 | 15 | 1.00000 | ug/L | 47642 | | 03/19/02 0024 | ydy |

107

* In Description = Dry Wgt.



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LABORATORY TEST RESULTS

Job Number: 232390 Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Customer Sample ID: MW02-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 16:57
Sample Matrix.....: Water

Laboratory Sample ID: 232390-7
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47448 | | 03/15/02 0700 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.03 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47816 | | 03/18/02 1601 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47816 | | 03/18/02 1601 | lg1 |
| | 2,4-Dinitrotoluene, Water | 0.02 | U | | 0.02 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1601 | lg1 |
| | 2,6-Dinitrotoluene, Water | 0.03 | U | | 0.03 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1601 | lg1 |
| | Pentachlorophenol, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1601 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 0.05 | U | | 0.05 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1601 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 15 | | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Acenaphthylene, Water | 0.4 | J | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Anthracene, Water | 1 | J | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Benzo(a)anthracene, Water | 0.4 | U | | 0.4 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.5 | U | | 0.5 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | 2-Chloronaphthalene, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Chrysene, Water | 0.3 | U | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Dibenzofuran, Water | 12 | | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.4 | U | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Fluoranthene, Water | 1 | J | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Fluorene, Water | 13 | | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | 2-Methylnaphthalene, Water | 0.6 | J | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Naphthalene, Water | 6 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Nitrobenzene, Water | 0.3 | U | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | n-Nitrosodiphenylamine, Water | 0.3 | U | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Phenanthrene, Water | 1 | J | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Pyrene, Water | 0.7 | J | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |

108

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LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: MW02-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 16:57
Sample Matrix.....: Water

Laboratory Sample ID: 232390-7
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 0.1 | U | | 0.1 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 2 | U | | 2 | 10 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | 4-Nitrophenol, Water | 1 | U | | 1 | 6 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| | Phenol, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1248 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0051 | ydy |
| | Chlorobenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0051 | ydy |
| | 1,2-Dichloroethane, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0051 | ydy |
| | Ethylbenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0051 | ydy |
| | Methylene Chloride, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0051 | ydy |
| | Toluene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0051 | ydy |
| | Xylenes (total), Water | 5 | U | | 5 | 15 | 1.00000 | ug/L | 47642 | | 03/19/02 0051 | ydy |

109

* In Description = Dry Wgt.



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REVISED

LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: MW02D-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 17:02
Sample Matrix.....: Water

Laboratory Sample ID: 232390-8
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | | | | | | | | | | | |
| | Separatory Funnel Liq/Liq Extraction, Water | Complete | | | | | 1 | | 47448 | | 03/15/02 0700 | mra |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | | | | | | | | | | | |
| | Benzo(a)pyrene, Water | 0.03 | U | | 0.03 | 0.2 | 1.00000 | ug/L | 47816 | | 03/18/02 1628 | lg1 |
| | Bis(2-chloroethoxy)methane, Water | 0.1 | U | | 0.1 | 0.1 | 1.00000 | ug/L | 47816 | | 03/18/02 1628 | lg1 |
| | 2,4-Dinitrotoluene, Water | 0.02 | U | | 0.02 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1628 | lg1 |
| | 2,6-Dinitrotoluene, Water | 0.03 | U | | 0.03 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1628 | lg1 |
| | Pentachlorophenol, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1628 | lg1 |
| | 1,2-Diphenylhydrazine, Water | 0.05 | U | | 0.05 | 1 | 1.00000 | ug/L | 47816 | | 03/18/02 1628 | lg1 |
| SW-846 8270C | Semivolatile Organics, Low Level | | | | | | | | | | | |
| | Acenaphthene, Water | 17 | | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Acenaphthylene, Water | 0.4 | J | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Anthracene, Water | 2 | J | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Benzo(a)anthracene, Water | 0.4 | U | | 0.4 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Bis(2-ethylhexyl)phthalate, Water | 0.5 | U | | 0.5 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | 2-Chloronaphthalene, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Chrysene, Water | 0.3 | U | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Dibenzofuran, Water | 14 | | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Di-n-butyl Phthalate, Water | 0.4 | U | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Fluoranthene, Water | 2 | J | | 0.4 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Fluorene, Water | 15 | | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | 2-Methylnaphthalene, Water | 0.7 | J | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Naphthalene, Water | 6 | | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Nitrobenzene, Water | 0.3 | U | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | n-Nitrosodiphenylamine, Water | 0.3 | U | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Phenanthrene, Water | 2 | | | 0.3 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Pyrene, Water | 0.8 | J | | 0.3 | 2 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |

110

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REVISED

LABORATORY TEST RESULTS

Job Number: 232390 Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Customer Sample ID: MW02D-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 17:02
Sample Matrix.....: Water

Laboratory Sample ID: 232390-8
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,4-Dimethylphenol, Water | 0.1 | U | | 0.1 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | 2-Methyl-4,6-dinitrophenol, Water | 2 | U | | 2 | 10 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | 4-Nitrophenol, Water | 1 | U | | 1 | 6 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| | Phenol, Water | 0.2 | U | | 0.2 | 1 | 1.00000 | ug/L | 47817 | | 03/18/02 1317 | lg1 |
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0117 | ydy |
| | Chlorobenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0117 | ydy |
| | 1,2-Dichloroethane, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0117 | ydy |
| | Ethylbenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0117 | ydy |
| | Methylene Chloride, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0117 | ydy |
| | Toluene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0117 | ydy |
| | Xylenes (total), Water | 5 | U | | 5 | 15 | 1.00000 | ug/L | 47642 | | 03/19/02 0117 | ydy |

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LABORATORY TEST RESULTS

Job Number: 232390

Date:07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston

PROJECT: UPRR-FIRST SEMIANNUA

ATTN: Chris Young

Customer Sample ID: TB03102-1SA02
Date Sampled.....: 03/13/2002
Time Sampled.....: 00:01
Sample Matrix.....: Trip Blank

Laboratory Sample ID: 232390-9
Date Received.....: 03/14/2002
Time Received.....: 11:34

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | Q | FLAGS | MDL | RL | DILUTION | UNITS | BATCH | DT | DATE/TIME | TECH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW-846 8260B | Volatile Organics | | | | | | | | | | | |
| | Benzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0143 | ydy |
| | Chlorobenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0143 | ydy |
| | 1,2-Dichloroethane, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0143 | ydy |
| | Ethylbenzene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0143 | ydy |
| | Methylene Chloride, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0143 | ydy |
| | Toluene, Water | 2 | U | | 2 | 5 | 1.00000 | ug/L | 47642 | | 03/19/02 0143 | ydy |
| | Xylenes (total), Water | 5 | U | | 5 | 15 | 1.00000 | ug/L | 47642 | | 03/19/02 0143 | ydy |

112

* In Description = Dry Wgt.



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QUALITY CONTROL RESULTS

Job Number.: 232390 Report Date.: 07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: lg1
Method Description.: Semivolatile Organics - SIM Analysis Batch(s)...: 47816

| MB | Method Blank | SVS030402B | 47448 | | 03/18/2002 | 0837 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Bis(2-chloroethoxy)methane, Water | 0 | | | | | | | |
| 2,4-Dinitrotoluene, Water | 0 | | | | | | | |
| 2,6-Dinitrotoluene, Water | 0 | | | | | | | |
| Pentachlorophenol, Water | 0 | | | | | | | |
| 1,2-Diphenylhydrazine, Water | 0 | | | | | | | |

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: lg1
Method Description.: Semivolatile Organics, Low Level Batch(s)...: 47817

| LCS | Laboratory Control Sample | SVS020702X | 47448 | | 03/18/2002 | 0926 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 4.92524 | | 5.000000 | | 98.5 | | 32-165 | |
| Acenaphthylene, Water | 4.80666 | | 5.000000 | | 96.1 | | 10-150 | |
| Anthracene, Water | 5.24216 | | 5.000000 | | 104.8 | | 23-178 | |
| Benzo(a)anthracene, Water | 5.34943 | | 5.000000 | | 107.0 | | 25-180 | |
| Benzo(a)pyrene, Water | 5.07344 | | 5.000000 | | 101.5 | | 19-182 | |
| Bis(2-chloroethoxy)methane, Water | 4.86499 | | 5.000000 | | 97.3 | | 47-148 | |
| Bis(2-ethylhexyl)phthalate, Water | 5.26743 | | 5.000000 | | 105.3 | | 25-173 | |
| 2-Chloronaphthalene, Water | 4.59589 | | 5.000000 | | 91.9 | | 23-143 | |
| Chrysene, Water | 5.49490 | | 5.000000 | | 109.9 | | 23-180 | |
| Dibenzofuran, Water | 5.12529 | | 5.000000 | | 102.5 | | 35-153 | |
| Di-n-butyl Phthalate, Water | 5.36750 | | 5.000000 | | 107.3 | | 28-185 | |
| 2,4-Dinitrotoluene, Water | 5.76391 | | 5.000000 | | 115.3 | | 13-175 | |
| 2,6-Dinitrotoluene, Water | 5.61537 | | 5.000000 | | 112.3 | | 17-180 | |
| Fluoranthene, Water | 5.48697 | | 5.000000 | | 109.7 | | 28-180 | |
| Fluorene, Water | 5.30940 | | 5.000000 | | 106.2 | | 30-189 | |
| 2-Methylnaphthalene, Water | 4.85142 | | 5.000000 | | 97.0 | | 26-168 | |
| Naphthalene, Water | 4.66040 | | 5.000000 | | 93.2 | | 36-139 | |
| Nitrobenzene, Water | 4.74642 | | 5.000000 | | 94.9 | | 17-163 | |
| N-Nitrosodiphenylamine, Water | 5.03968 | | 5.000000 | | 100.8 | | 58-174 | |
| Phenanthrene, Water | 5.19159 | | 5.000000 | | 103.8 | | 26-166 | |
| Pyrene, Water | 5.33119 | | 5.000000 | | 106.6 | | 28-173 | |
| 2,4-Dimethylphenol, Water | 3.92932 | | 5.000000 | | 78.6 | | 23-157 | |
| 2-Methyl-4,6-dinitrophenol, Water | 5.61612 | | 5.000000 | | 112.3 | | 17-164 | |
| 2-Nitrophenol, Water | 2.74021 | | 5.000000 | | 54.8 | | 10-92 | |
| Pentachlorophenol, Water | 5.18054 | | 5.000000 | | 103.6 | | 10-130 | |
| Phenol, Water | 2.09695 | | 5.000000 | | 41.9 | | 20-83 | |
| 1,2-Diphenylhydrazine, Water | 4.85420 | | 0.000000 | | | | | |



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# QUALITY CONTROL RESULTS

Job Number.: 232390 Report Date.: 07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MB | Method Blank | SVS030402B | 47448 | | 03/18/2002 | 0857 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 0 | | | | | | | |
| Acenaphthylene, Water | 0 | | | | | | | |
| Anthracene, Water | 0 | | | | | | | |
| Benzo(a)anthracene, Water | 0 | | | | | | | |
| Benzo(a)pyrene, Water | 0 | | | | | | | |
| Bis(2-chloroethoxy)methane, Water | 0 | | | | | | | |
| Bis(2-ethylhexyl)phthalate, Water | 0.19363 | | | | | | | |
| 2-Chloronaphthalene, Water | 0 | | | | | | | |
| Chrysene, Water | 0 | | | | | | | |
| Dibenzofuran, Water | 0 | | | | | | | |
| Di-n-butyl Phthalate, Water | 0.16865 | | | | | | | |
| 2,4-Dinitrotoluene, Water | 0 | | | | | | | |
| 2,6-Dinitrotoluene, Water | 0 | | | | | | | |
| Fluoranthene, Water | 0 | | | | | | | |
| Fluorene, Water | 0 | | | | | | | |
| 2-Methylnaphthalene, Water | 0 | | | | | | | |
| Naphthalene, Water | 0 | | | | | | | |
| Nitrobenzene, Water | 0 | | | | | | | |
| n-Nitrosodiphenylamine, Water | 0 | | | | | | | |
| Phenanthrene, Water | 0 | | | | | | | |
| Pyrene, Water | 0 | | | | | | | |
| 2,4-Dimethylphenol, Water | 0 | | | | | | | |
| 2-Methyl-4,6-dinitrophenol, Water | 0 | | | | | | | |
| 4-Nitrophenol, Water | 0 | | | | | | | |
| Pentachlorophenol, Water | 0 | | | | | | | |
| Phenol, Water | 0 | | | | | | | |
| 1,2-Diphenylhydrazine, Water | 0 | | | | | | | |

| MS | Matrix Spike | SVS012802C | 232390-3 | | 03/18/2002 | 1052 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 57.7045 | | 5.000000 | 58.5525 | -17 | | 46-118 | A |
| 2,4-Dinitrotoluene, Water | 6.03881 | | 5.000000 | 0 | 121 | | 24-96 | A |
| Pyrene, Water | 8.41789 | | 5.000000 | 3.03627 | 108 | | 52-127 | |
| 4-Nitrophenol, Water | 5.08834 | | 10.000000 | 0 | 51 | | 10-80 | |
| Pentachlorophenol, Water | 11.1009 | | 10.000000 | 0 | 111 | | 9-103 | A |
| Phenol, Water | 3.85143 | | 10.000000 | 0 | 39 | | 10-112 | |

| MSD | Matrix Spike Duplicate | SVS012802C | 232390-4 | | 03/18/2002 | 1121 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene, Water | 60.4821 | 57.7045 | 5.000000 | 58.5525 | 39 | | 46-118 | A |
| | | | | | 4.7 | | 31.0 | |
| 2,4-Dinitrotoluene, Water | 5.71857 | 6.03881 | 5.000000 | 0 | 114 | | 24-96 | A |
| | | | | | 5.4 | | 38.0 | |
| Pyrene, Water | 8.77449 | 8.41789 | 5.000000 | 3.03627 | 115 | | 52-127 | |
| | | | | | 4.1 | | 31.0 | |
| 4-Nitrophenol, Water | 6.13176 | 5.08834 | 10.000000 | 0 | 61 | | 10-80 | |
| | | | | | 18.6 | | 50.0 | |
| Pentachlorophenol, Water | 11.2473 | 11.1009 | 10.000000 | 0 | 112 | | 9-103 | A |
| | | | | | 1.3 | | 50.0 | |



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

114

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# QUALITY CONTROL RESULTS

Job Number.: 232390 Report Date.: 07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MSD | Matrix Spike Duplicate | SVS012802C | 232390-4 | | 03/18/2002 | 1121 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Phenol, Water | 3.83088 | 3.85143 | 10.000000 | 0 | 38 | | 10-112 | |
| | | | | | 0.5 | | 23.0 | |

Test Method.....: SW-846 8260B Units.....: ug/L Analyst...: ydy
Method Description.: Volatile Organics Batch(s)...: 47642

| LCS | Laboratory Control Sample | VS030602E | 47642-1 | | 03/18/2002 | 1654 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 46.4173 | | 50.00 | ND | 92.8 | | 68-127 | |
| Chlorobenzene, Water | 47.2411 | | 50.00 | ND | 94.5 | | 65-129 | |
| 1,2-Dichloroethane, Water | 47.5804 | | 50.00 | ND | 95.2 | | 65-133 | |
| Ethylbenzene, Water | 47.4806 | | 50.00 | ND | 95.0 | | 64-132 | |
| Methylene Chloride, Water | 41.4975 | | 50.00 | 2.47327 | 83.0 | | 54-133 | |
| Toluene, Water | 46.7301 | | 50.00 | ND | 93.5 | | 63-127 | |
| Xylenes (total), Water | 145.623 | | 150.00 | ND | 97.1 | | 37-161 | |

| LCS | Laboratory Control Sample | VS030602E | 47642-2 | | 03/19/2002 | 1109 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 54.5081 | | 50.00 | ND | 109.0 | | 68-127 | |
| Chlorobenzene, Water | 52.1412 | | 50.00 | ND | 104.3 | | 65-129 | |
| 1,2-Dichloroethane, Water | 64.7558 | | 50.00 | ND | 129.5 | | 65-133 | |
| Ethylbenzene, Water | 54.0435 | | 50.00 | ND | 108.1 | | 64-132 | |
| Methylene Chloride, Water | 40.7636 | | 50.00 | 1.48457 | 81.5 | | 54-133 | |
| Toluene, Water | 54.7316 | | 50.00 | ND | 109.5 | | 63-127 | |
| Xylenes (total), Water | 165.567 | | 150.00 | ND | 110.4 | | 37-161 | |

| MB | Method Blank | VS030602C | 47642-1 | | 03/18/2002 | 1720 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | ND | | | | | | | |
| Chlorobenzene, Water | ND | | | | | | | |
| 1,2-Dichloroethane, Water | ND | | | | | | | |
| Ethylbenzene, Water | ND | | | | | | | |
| Methylene Chloride, Water | 2.47327 | | | | | | | |
| Toluene, Water | ND | | | | | | | |
| Xylenes (total), Water | ND | | | | | | | |



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# QUALITY CONTROL RESULTS

Job Number.: 232390 Report Date.: 07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date Time |
|---|---|---|---|---|---|
| MB | Method Blank | VS030602C | 47642-2 | | 03/19/2002 1240 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | ND | | | | | | | |
| Chlorobenzene, Water | ND | | | | | | | |
| 1,2-Dichloroethane, Water | ND | | | | | | | |
| Ethylbenzene, Water | ND | | | | | | | |
| Methylene Chloride, Water | 1.48457 | | | | | | | |
| Toluene, Water | ND | | | | | | | |
| Xylenes (total), Water | ND | | | | | | | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date Time |
|---|---|---|---|---|---|
| MS | Matrix Spike | VS030602F | 232359-4 | | 03/18/2002 2053 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 49.3546 | | 50.00 | ND | 99 | | 65-125 | |
| Chlorobenzene, Water | 52.5930 | | 50.00 | ND | 105 | | 74-122 | |
| Toluene, Water | 53.2204 | | 50.00 | ND | 106 | | 76-125 | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date Time |
|---|---|---|---|---|---|
| MS | Matrix Spike | VS030602F | 232390-3 | | 03/19/2002 1426 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 48.6774 | | 50.00 | ND | 97 | | 65-125 | |
| Chlorobenzene, Water | 51.5142 | | 50.00 | ND | 103 | | 74-122 | |
| Toluene, Water | 50.2368 | | 50.00 | ND | 100 | | 76-125 | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date Time |
|---|---|---|---|---|---|
| MSD | Matrix Spike Duplicate | VS030602F | 232359-5 | | 03/18/2002 2119 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 50.5389 | 49.3546 | 50.00 | ND | 101 | | 65-125 | |
| | | | | | 2.4 | | 30.0 | |
| Chlorobenzene, Water | 53.6513 | 52.5930 | 50.00 | ND | 107 | | 74-122 | |
| | | | | | 2.0 | | 30.0 | |
| Toluene, Water | 54.7007 | 53.2204 | 50.00 | ND | 109 | | 76-125 | |
| | | | | | 2.7 | | 30.0 | |

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date Time |
|---|---|---|---|---|---|
| MSD | Matrix Spike Duplicate | VS030602F | 232390-4 | | 03/19/2002 1453 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Water | 43.8157 | 48.6774 | 50.00 | ND | 88 | | 65-125 | |
| | | | | | 10.5 | | 30.0 | |
| Chlorobenzene, Water | 46.3046 | 51.5142 | 50.00 | ND | 93 | | 74-122 | |
| | | | | | 10.7 | | 30.0 | |
| Toluene, Water | 45.7876 | 50.2368 | 50.00 | ND | 92 | | 76-125 | |
| | | | | | 9.3 | | 30.0 | |

116



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

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# SURROGATE RECOVERIES REPORT

Job Number.: 232390 Report Date.: 07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Method.....: Volatile Organics Method Code...: 8260 Prep Batch....:
Batch(s).....: 47642 Test Matrix...: Water Equipment Code: GCMSVOA06

| Lab ID | DT | Sample ID | Date | 12DCED | BRFLBE | DBRFLM | TOLD8 |
|---|---|---|---|---|---|---|---|
| 47642- 1 | LCS | | 03/18/2002 | 85.2 | 93.9 | 88.3 | 95.3 |
| 47642- 1 | MB | | 03/18/2002 | 88.6 | 90.8 | 94.4 | 87.6 |
| 47642- 2 | LCS | | 03/19/2002 | 99.2 | 115.7 | 95.1 | 118.0 |
| 47642- 2 | MB | | 03/19/2002 | 104.1 | 94.4 | 98.5 | 101.1 |
| 232359- 4 | MS | MW-10A-1SA02 MS | 03/18/2002 | 112.2 | 91.4 | 103.9 | 90.7 |
| 232359- 5 | MSD | MW-10A-1SA02 MSD | 03/18/2002 | 114.4 | 92.4 | 103.9 | 92.3 |
| 232390- 1 | | MW10B-1SA02 | 03/18/2002 | 101.9 | 105.1 | 99.6 | 103.5 |
| 232390- 2 | | MW03-1SA02 | 03/19/2002 | 101.4 | 80.0 | 95.7 | 86.7 |
| 232390- 3 | | MW03 MS-1SA02 | 03/19/2002 | 112.3 | 91.4 | 114.0 | 90.0 |
| 232390- 3 | MS | MW03 MS-1SA02 | 03/19/2002 | 112.3 | 91.4 | 114.0 | 90.0 |
| 232390- 4 | | MW03 MSD-1SA02 | 03/19/2002 | 79.0 | 82.1 | 91.5 | 82.3 |
| 232390- 4 | MSD | MW03 MSD-1SA02 | 03/19/2002 | 79.0 | 82.1 | 91.5 | 82.3 |
| 232390- 5 | | P10-1SA02 | 03/18/2002 | 85.2 | 92.7 | 85.9 | 88.5 |
| 232390- 6 | | P10D-1SA02 | 03/19/2002 | 112.0 | 107.7 | 104.7 | 99.1 |
| 232390- 7 | | MW02-1SA02 | 03/19/2002 | 102.8 | 112.3 | 110.2 | 102.2 |
| 232390- 8 | | MW02D-1SA02 | 03/19/2002 | 80.3 | 91.8 | 74.8 | 89.1 |
| 232390- 9 | | TB03102-1SA02 | 03/19/2002 | 92.6 | 92.9 | 102.2 | 87.0 |

| Test | Test Description | Limits |
|---|---|---|
| 12DCED | 1,2-Dichloroethane-d4 | 70 - 130 |
| BRFLBE | 4-Bromofluorobenzene | 70 - 130 |
| DBRFLM | Dibromofluoromethane | 70 - 130 |
| TOLD8 | Toluene-d8 | 70 - 130 |

117



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# SURROGATE RECOVERIES REPORT

Job Number.: 232390 Report Date.: 07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Method.....: Semivolatile Organics, Low Level Method Code...: 8270LL Prep Batch....: 47448
Batch(s).....: 47817 Test Matrix...: Water Equipment Code: EGCMS07

| Lab ID | DT | Sample ID | Date | 246TBP | 2FLUBP | 2FLUPH | NITRD5 | PHEND6 | TERD14 |
|---|---|---|---|---|---|---|---|---|---|
| LCS | | | 03/18/2002 | 106 | 95 | 69 | 95 | 39 | 90 |
| MB | | | 03/18/2002 | 107 | 94 | 70 | 96 | 37 | 92 |
| 232390- 1 | | MW10B-1SA02 | 03/18/2002 | 109 | 91 | 64 | 85 | 37 | 76 |
| 232390- 1 | | MW10B-1SA02 | 03/20/2002 | 126D | 109 | 51 | 100 | 38 | 86 |
| 232390- 2 | | MW03-1SA02 | 03/18/2002 | 109 | 95 | 65 | 92 | 37 | 82 |
| 232390- 2 | | MW03-1SA02 | 03/20/2002 | 137D | 125D | 53 | 114 | 39 | 108 |
| 232390- 3 | | MW03 MS-1SA02 | 03/20/2002 | 141D | 129D | 59 | 116D | 44 | 117 |
| 232390- 3 | | MW03 MS-1SA02 | 03/18/2002 | 111 | 97 | 67 | 92 | 39 | 83 |
| 232390- 3 | MS | MW03 MS-1SA02 | 03/18/2002 | 111 | 97 | 67 | 92 | 39 | 83 |
| 232390- 4 | | MW03 MSD-1SA02 | 03/20/2002 | 145D | 134D | 65 | 123D | 45 | 118 |
| 232390- 4 | | MW03 MSD-1SA02 | 03/18/2002 | 112 | 100 | 66 | 97 | 39 | 82 |
| 232390- 4 | MSD | MW03 MSD-1SA02 | 03/18/2002 | 112 | 100 | 66 | 97 | 39 | 82 |
| 232390- 5 | | P10-1SA02 | 03/18/2002 | 117 | 103 | 65 | 138A | 38 | 77 |
| 232390- 5 | | P10-1SA02 | 03/20/2002 | 146D | 133D | 67 | 136D | 43 | 106 |
| 232390- 5 | | P10-1SA02 | 03/20/2002 | 170D | 152D | 65 | 134D | 45 | 127 |
| 232390- 5 | | P10-1SA02 | 03/20/2002 | 150D | 163D | 81 | 136D | 39 | 133 |
| 232390- 6 | | P10D-1SA02 | 03/18/2002 | 114 | 99 | 64 | 133A | 36 | 76 |
| 232390- 6 | | P10D-1SA02 | 03/20/2002 | 148D | 133D | 54 | 126D | 41 | 108 |
| 232390- 6 | | P10D-1SA02 | 03/20/2002 | 155D | 139D | 72 | 127D | 42 | 116 |
| 232390- 6 | | P10D-1SA02 | 03/20/2002 | 148D | 149D | 65 | 125D | 32 | 127 |
| 232390- 7 | | MW02-1SA02 | 03/18/2002 | 107 | 85 | 58 | 77 | 34 | 76 |
| 232390- 8 | | MW02D-1SA02 | 03/18/2002 | 103 | 88 | 63 | 85 | 34 | 82 |

| Test | Test Description | Limits |
|---|---|---|
| 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 |



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# SURROGATE RECOVERIES REPORT

Job Number.: 232390 Report Date.: 07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Method.....: Semivolatile Organics - SIM Analysis Method Code...: 8270SI Prep Batch....: 47448
Batch(s).....: 47816 Test Matrix...: Water Equipment Code: EGCMS06

| Lab ID | DT | Sample ID | Date | 246TBP | 2FLUBP | 2FLUPH | NITRD5 | PHEND6 | TERD14 |
|---|---|---|---|---|---|---|---|---|---|
| 232390- 3 | | MW03 MS-1SA02 | 03/18/2002 | 111 | 97 | 67 | 92 | 39 | 83 |
| 232390- 4 | | MW03 MSD-1SA02 | 03/18/2002 | 112 | 100 | 66 | 97 | 39 | 82 |

| Test | Test Description | Limits |
|---|---|---|
| 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 |

119



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# QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 07/01/2002

### 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.

General Information:

- Cresylic Acid is the combination of o,m and p-Cresol. The combination is reportesd 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, maybe 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.

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.
O - Sample required dilution due to matrix interference.
D - Sample reported from a dilution.
d - Spike and/or surrogate diluted out.
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.
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.



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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/01/2002

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.
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 - 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.

Abbreviations:

Batch - Designation given to identify a specific extraction, digestion, preparation, or analysis set.
CCV - Continuing Calibration Verification
CRA - Low level standard check - GFAA, Mercury
CRI - Low level standard check - ICP
Dil Fac - Dilution Factor - Secondary dilution analysis
DLFac - Detection Limit Factor
EB - Extraction Blank (TCLP, SPLP, etc.)
ICAL - Initial Calibration
ICB - Initial Calibration Blank
ICV - Initial Calibration Verification
ISA - Interference Check Sample A - ICP
ISB - Interference Check Sample B - ICP
LCD - Laboratory Control Duplicate
LCS - Laboratory Control Sample
MB - Method Blank
MD - Method Duplicate
MDL - Method Detection Limit
MS - Matrix Spike
MSD - Matrix Spike Duplicate
ND - Not Detected
PB - Preparation Blank



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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/01/2002

PREPF - Preparation factor
RPD - Relative Percent Difference
RRF - Relative Response Factor
RT - Retention Time

Method References:

(1) EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.
(2) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1193; Update IIB, January 1995; Update III, December 1996.
(3) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989),
(4) HACH Water Analysis Handbook 3rd Edition (1997).
(5) Federal Register, July 1, 1990 (40 CFR Part 136).
(6) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.
(7) ASTM Annual Book of Methods (Various Years)
(8) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.



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LABORATORY CHRONICLE

Job Number: 232390 Date: 07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Lab ID: 232390-1 Client ID: MW10B-1SA02 Date Recvd: 03/14/2002 Sample Date: 03/13/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | DILUTION |
|---|---|---|---|---|---|---|
| | Data Package Validation | 1 | 48716 | | 04/11/2002 0000 | |
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47448 | | 03/15/2002 0700 | |
| | GC/MS Semi-Volatile Package Production | 1 | 48547 | | | |
| | GC/MS Volatiles Data Package Production | 1 | 47846 | | 03/22/2002 1700 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47816 | 47448 | 03/18/2002 1315 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/18/2002 0955 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/20/2002 1217 | 2.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47642 | | 03/18/2002 2332 | 1.00000 |

Lab ID: 232390-2 Client ID: MW03-1SA02 Date Recvd: 03/14/2002 Sample Date: 03/13/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | DILUTION |
|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47448 | | 03/15/2002 0700 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47816 | 47448 | 03/18/2002 1343 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/18/2002 1023 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/20/2002 1246 | 4.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47642 | | 03/19/2002 1400 | 1.00000 |

Lab ID: 232390-3 Client ID: MW03 MS-1SA02 Date Recvd: 03/14/2002 Sample Date: 03/13/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | DILUTION |
|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47448 | | 03/15/2002 0700 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47816 | 47448 | 03/18/2002 1052 | 1.00000 |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47816 | 47448 | 03/18/2002 1410 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/18/2002 1052 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/20/2002 1315 | 4.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47642 | | 03/19/2002 1426 | 1.00000 |

Lab ID: 232390-4 Client ID: MW03 MSD-1SA02 Date Recvd: 03/14/2002 Sample Date: 03/13/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | DILUTION |
|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47448 | | 03/15/2002 0700 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47816 | 47448 | 03/18/2002 1121 | 1.00000 |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47816 | 47448 | 03/18/2002 1438 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/18/2002 1121 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/20/2002 1343 | 4.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47642 | | 03/19/2002 1453 | 1.00000 |

Lab ID: 232390-5 Client ID: P10-1SA02 Date Recvd: 03/14/2002 Sample Date: 03/13/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | DILUTION |
|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47448 | | 03/15/2002 0700 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47816 | 47448 | 03/18/2002 1506 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/18/2002 1150 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/20/2002 1412 | 4.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/20/2002 1509 | 20.0000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/20/2002 1636 | 100.000 |
| SW-846 8260B | Volatile Organics | 1 | 47642 | | 03/18/2002 2358 | 1.00000 |

Lab ID: 232390-6 Client ID: P10D-1SA02 Date Recvd: 03/14/2002 Sample Date: 03/13/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | DILUTION |
|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47448 | | 03/15/2002 0700 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47816 | 47448 | 03/18/2002 1533 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/18/2002 1219 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/20/2002 1441 | 5.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/20/2002 1538 | 10.0000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/20/2002 1607 | 100.000 |
| SW-846 8260B | Volatile Organics | 1 | 47642 | | 03/19/2002 0024 | 1.00000 |

Lab ID: 232390-7 Client ID: MW02-1SA02 Date Recvd: 03/14/2002 Sample Date: 03/13/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | DILUTION |
|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47448 | | 03/15/2002 0700 | |

123



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LABORATORY CHRONICLE

Job Number: 232390 Date: 07/01/2002

CUSTOMER: ERM Southwest, Inc.- Houston PROJECT: UPRR-FIRST SEMIANNUA ATTN: Chris Young

Lab ID: 232390-7 Client ID: MW02-1SA02 Date Recvd: 03/14/2002 Sample Date: 03/13/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47816 | 47448 | 03/18/2002 | 1601 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/18/2002 | 1248 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47642 | | 03/19/2002 | 0051 | 1.00000 |

Lab ID: 232390-8 Client ID: MW02D-1SA02 Date Recvd: 03/14/2002 Sample Date: 03/13/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3510C | Extraction (Sep. Funnel) SVOC Low Level | 1 | 47448 | | 03/15/2002 | 0700 | |
| SW-846 8270C | Semivolatile Organics - SIM Analysis | 1 | 47816 | 47448 | 03/18/2002 | 1628 | 1.00000 |
| SW-846 8270C | Semivolatile Organics, Low Level | 1 | 47817 | 47448 | 03/18/2002 | 1317 | 1.00000 |
| SW-846 8260B | Volatile Organics | 1 | 47642 | | 03/19/2002 | 0117 | 1.00000 |

Lab ID: 232390-9 Client ID: TB03102-1SA02 Date Recvd: 03/14/2002 Sample Date: 03/13/2002

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 8260B | Volatile Organics | 1 | 47642 | | 03/19/2002 | 0143 | 1.00000 |



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SEVERN TRENT SERVICES

SEVERN TRENT LABORATORIES
6310 Rothway Center
Houston, TX 77040
(713) 690-4444, Fax (713) 690-5646

**Request for Analysis**

| | | |
|---|---|---|
| Company: ERM SOUTHWEST | Address: 16300 KATY FRWY. HOUSTON, TX. (STE. 300) | Tele #: 281)600.1000 Fax #: 281)600.1001 |
| Reports Sent To: CHRIS YOUNG | PO #: | Project #: 422-102-60 |
| Project Name: UPRR FIRST SEMI-ANNUAL HWPW | Project Location: HWPW IMPOUNDMENT | |
| Sampler(s) Name: (Signature) TRISTRAM DODDS | | |
| Courier: | | |

| Field Sample ID | Sampling Date | Sampling Time | Matrix: Water | Soil | Sludge | Oil | Other | # of Containers | Haz. Sample (Y/N) | 8260 B - VOC's | 8270 C - Low Level | 8270 C - SIM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW10B - 1SA02 | 03/13/02 | 1145 | X | | | | | 5 | N | X | X | X |
| 2. MW03 - 1SA02 | 03/13/02 | 1457 | X | | | | | 5 | N | X | X | X |
| 3. MW03 MS - 1SA02 | 03/13/02 | 1452 | X | | | | | 5 | N | X | X | X |
| 4. MW03MSD - 1SA02 | 03/13/02 | 1447 | X | | | | | 5 | N | X | X | X |
| 5. P10 - 1SA02 | 03/13/02 | 1500 | X | | | | | 5 | N | X | X | X |
| 6. P10 D - 1SA02 | 03/13/02 | 1455 | X | | | | | 5 | N | X | X | X |
| 7. MW02 - 1SA02 | 03/13/02 | 1657 | X | | | | | 5 | N | X | X | X |
| 8. MW02D - 1SA02 | 03/13/02 | 1702 | X | | | | | 5 | N | X | X | X |
| 9. TB031302 - 1SA02 | 03/13/02 | | | | | | | 2 | N | X | X | X |
| 10. | | | | | | | | | | | | |
| 11. | | | | | | | | | | | | |
| 12. | | | | | | | | | | | | |
| 13. | | | | | | | | | | | | |

| Relinquished by: (Signature) | Date: | Time: | Received by: (Signature) | Date: | Time: |
|---|---|---|---|---|---|
| Relinquished by Sampler: (Signature) | 3/13/02 | 1905 | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by Laboratory: (Signature) | 3-14-02 | 1104 |

125

Remarks:

Requested Turnaround: STANDARD

GSAI Group: 232390

Special Detection Limits: SEE PROJECT REQUIREMENTS

QC Package: (check one)
- [X] CLP
- [ ] Site Specific
- [ ] Tier 1
- [ ] Tier 2
- [ ] QC Summary

White Copy to Accompany Samples to Lab — Yellow Copy Retained by Client — Pink Copy Retained by Sampler

STL HOUSTON REVISED
SAMPLE RECEIPT CHECKLIST

CLIENT: ERM-SW | CONTACT: Chris. Young
PROJECT: first Semi Annual | CARRIER: STL
DATE SENT: 3-14-02 | UNPACKED BY:
DATE RECEIVED: 2002 MAR 14 AM 11:34 | UNPACKED ST: 2002 MAR 14 PM 1:16
NUMBER OF KITS RECEIVED: 3 | JOB#: 232390 | SDG#:

KIT CHECKLIST

| | COC PRESENT | CUSTODY TAPE PRESENT? | CUSTODY TAPE INTACT? | COOLER TEMP Thermometer # 340 | # OF SAMPLE CONTAINERS |
|---|---|---|---|---|---|
| 57 | Yes | C Yes / B No | Yes / No | 2.3°C | 22 |
| 1584 | Yes | C Yes / B Yes | Yes / Yes | 2.4°C | 32 |
| R/L 4 | Yes | C Yes / B No | Yes / No | 2.5°C | 20 |

C = COOLER B = BOTTLES

SAMPLE CHECKS

PH OF WATER SAMPLES CHECKED? Yes ✓ No ___ SAMPLE(S) SCREENED FOR RADIATION? Yes ✓ No ___

VOLATILE HEAD SPACE CHECKED? Yes ✓ No ___

SHORT HOLD / RUSH SAMPLES (include department delivered to and time delivered)

INCONSISTENCIES

ACTION TAKEN

PERSON CONTACTED: ___ DATE: ___

RESULT: ___

EMPLOYEE: ___ DATE: ___

☐ HNO3 ☐ HCL ☐ H2SO4 ☐ NaOH ☐ Na2S2O3 ☐ NEAT ☐ NaHSO4 ☐ OT/PRE.
(Water Only)

2 VOA
__ Other

__ VOA
__ Other

| # Cont | Matrix |
|---|---|
| 43 | WA |
| | |
| | |
| | |
| Total: | |

NOTES

Project Manager

DY SEAL

1900 3/14/08

Sanchez ERM-SW

Date

SEVERN TRENT SERVICES

Date/Time

Name/C

SEVERN TRENT SERVICES

CUSTODY SEAL

Date/Time 3/13/08 1900

Name/Company Andy Sanchez ERM-SW

Seal broken by

Date

SEVERN TRENT SERVICES
STL Houston

## ORGANICS NARRATIVE

**Project Name:** UPRR - First Semiannual

**Project No.:** 422-102-60

**Date Received:** 03/14/02

**SDG:** 232390

| EPA Sample No. | Field Sample ID | Lab ID | Analysis Requested | Matrix | |
|---|---|---|---|---|---|
| | | | | Soil | Water |
| 10B | MW10B-1SA02 | 232390-1 | VOA/SV | | X |
| 03 | MW03-ISA02 | 232390-2 | VOA/SV | | X |
| 03MS | MW03MS-1SA02 | 232390-3 | VOA/SV | | X |
| 03MSD | MW03MSD-1SA02 | 232390-4 | VOA/SV | | X |
| P10 | P10-1SA02 | 232390-5 | VOA/SV | | X |
| P10D | P10D-1SA02 | 232390-6 | VOA/SV | | X |
| 02 | MW02-1SA02 | 232390-7 | VOA/SV | | X |
| 02D | MW02D-1SA02 | 232390-8 | VOA/SV | | X |
| TB031 | TB031302-1SA02 | 232390-9 | VOA | | X |

The samples were received on the following date with the following cooler temperatures:

| Date Received | Kit ID | Temperature |
|---|---|---|
| 03/14/02 | 536 | 2.3 °C |
| 03/14/02 | 1586 | 2.4 °C |
| 03/14/02 | R/W 4 | 2.5 °C |

Although every effort has been made to provide Form Is to be identical to the Analytical reports, rounding conventions are slightly different from those on the Analytical reports.



REVISED
STL 7/11/02



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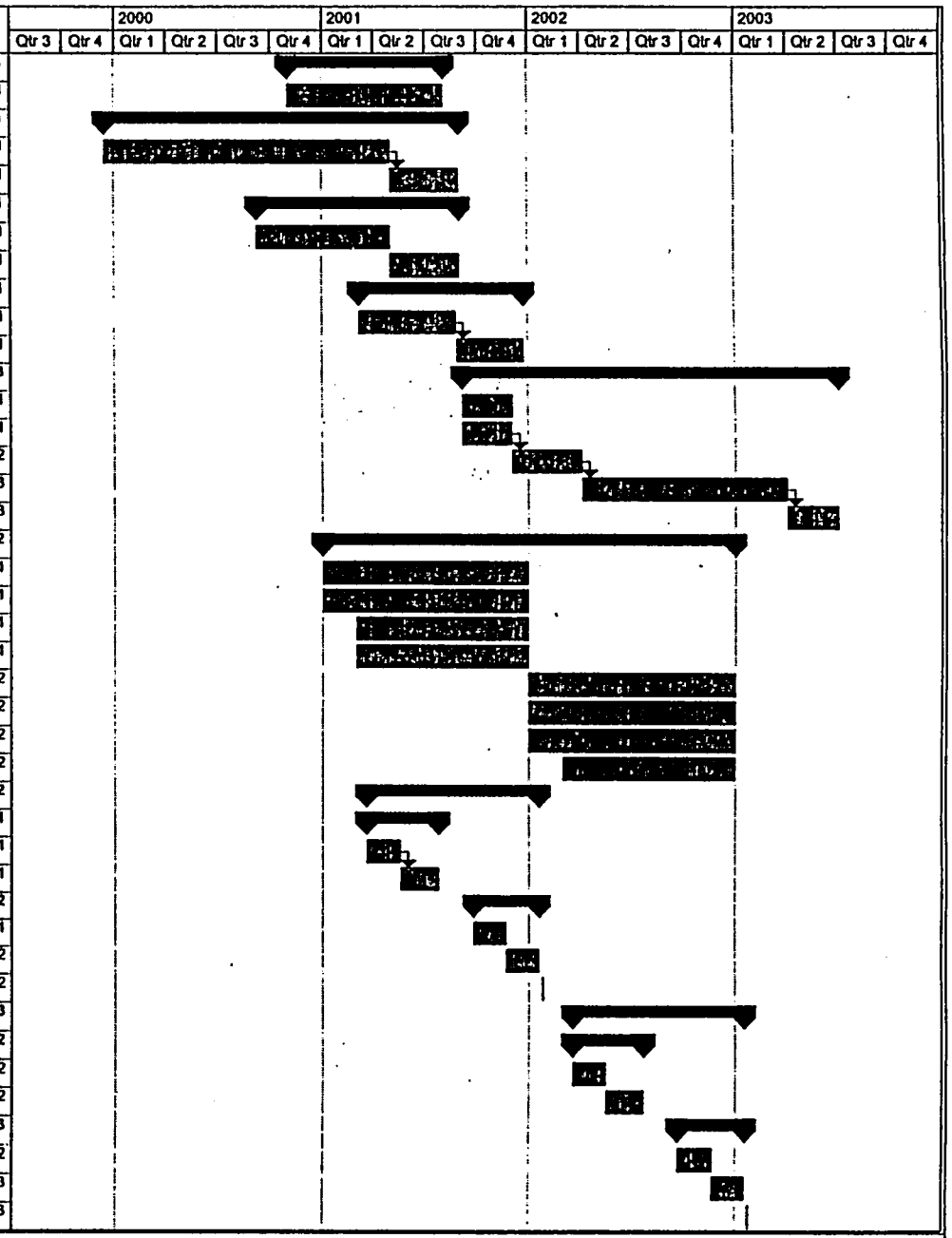
# Updated Compliance Schedule

*Appendix D*

*July 19, 2002*
*W.O. #422-102*

**Environmental Resources Management**
16300 Katy Freeway, Suite 300
Houston, Texas 77094-1611
(281) 600-1000

| ID | Task Name | Start | Finish |
|---|---|---|---|
| 1 | On-Site Risk Assessment (Permit VIII.I) | Wed 11/01/00 | Fri 08/03/01 |
| 2 | Respond to TNRCC Questions | Wed 11/01/00 | Fri 08/03/01 |
| 3 | RFI/EOC Phase 2-C Implementation (Permit VIII.D and CP VIII) | Wed 12/15/99 | Thu 08/30/01 |
| 4 | Complete Phase 2-C RFI/EOC | Wed 12/15/99 | Tue 05/01/01 |
| 5 | Submit RFI/EOC Progress Reports to TNRCC | Wed 05/02/01 | Thu 08/30/01 |
| 6 | Off-Site Risk Assessment (Permit VIII.I) | Fri 09/08/00 | Fri 08/31/01 |
| 7 | Submit RFI Risk Assessment | Fri 09/08/00 | Tue 05/01/01 |
| 8 | TNRCC Review Process | Wed 05/02/01 | Fri 08/31/01 |
| 9 | Corrective Measures Study (Permit VIII.I and CP IX) | Wed 03/07/01 | Mon 12/24/01 |
| 10 | Submit Corrective Measures Study | Wed 03/07/01 | Fri 08/24/01 |
| 11 | TNRCC Review Process | Mon 08/27/01 | Mon 12/24/01 |
| 12 | Corrective Measures Implementation (Permit VIII.J and CP X) | Wed 09/05/01 | Wed 07/02/03 |
| 13 | Submit Proposed Permit Modification | Wed 09/05/01 | Tue 12/04/01 |
| 14 | Submit Corrective Measures Implementation Work Plan | Wed 09/05/01 | Mon 12/03/01 |
| 15 | TNRCC Review Process | Tue 12/04/01 | Thu 04/04/02 |
| 16 | Perform Corrective Action | Fri 04/05/02 | Tue 04/01/03 |
| 17 | Submit Corrective Measures Report | Wed 04/02/03 | Wed 07/02/03 |
| 18 | Compliance Activities (Permit IV, C and CP VI) | Mon 01/01/01 | Tue 12/31/02 |
| 19 | Impoundment Inspections (Weekly) | Mon 01/01/01 | Mon 12/31/01 |
| 20 | Water Level Measurments (Semiannually) | Mon 01/01/01 | Mon 12/31/01 |
| 21 | Monitor Well Inspections (Quarterly) | Thu 03/01/01 | Mon 12/31/01 |
| 22 | Ground Water Sampling (Semiannually) | Thu 03/01/01 | Mon 12/31/01 |
| 23 | Impoundment Inspections (Weekly) | Tue 01/01/02 | Tue 12/31/02 |
| 24 | Water Level Measurments (Semiannually) | Tue 01/01/02 | Tue 12/31/02 |
| 25 | Monitor Well Inspections (Quarterly) | Tue 01/01/02 | Tue 12/31/02 |
| 26 | Ground Water Sampling (Semiannually) | Fri 03/01/02 | Tue 12/31/02 |
| 27 | Post-Closure Care Reporting 2000-2001 | Mon 03/19/01 | Fri 01/18/02 |
| 28 | Semiannual Report - July 21, 2001 (CP VII.B.2) | Mon 03/19/01 | Mon 07/23/01 |
| 29 | Perform Data Evaluation | Mon 03/19/01 | Thu 05/17/01 |
| 30 | Submit Report to TNRCC | Fri 05/18/01 | Mon 07/23/01 |
| 31 | Semiannual Report - January 21, 2002 (CP VII.B.2) | Mon 09/24/01 | Fri 01/18/02 |
| 32 | Perform Data Evaluation | Mon 09/24/01 | Wed 11/21/01 |
| 33 | Submit Report to TNRCC | Wed 11/21/01 | Fri 01/18/02 |
| 34 | 2001 Annual Report - January 25, 2002 (Permit V.F and III.B.1) | Fri 01/25/02 | Fri 01/25/02 |
| 35 | Post-Closure Care Reporting 2001-2002 | Mon 03/18/02 | Fri 01/17/03 |
| 36 | Semiannual Report - July 21, 2002 (CP VII.B.2) | Mon 03/18/02 | Mon 07/22/02 |
| 37 | Perform Data Evaluation | Mon 03/18/02 | Thu 05/16/02 |
| 38 | Submit Report to TNRCC | Fri 05/17/02 | Mon 07/22/02 |
| 39 | Semiannual Report - January 17, 2003 (CP VII.B.2) | Fri 09/20/02 | Fri 01/17/03 |
| 40 | Perform Data Evaluation | Fri 09/20/02 | Wed 11/20/02 |
| 41 | Submit Report to TNRCC | Wed 11/20/02 | Fri 01/17/03 |
| 42 | 2002 Annual Report - January 24, 2003 (Permit V.F and III.B.1) | Fri 01/24/03 | Fri 01/24/03 |




Project: UpdateCompliance3
Date: Wed 01/09/02

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