AP - 45

STAGE 1 & 2 WORKPLANS

DATE:

March 16, 2005

Corrective Action Plan for the P-6 Line Leak Site
T20S, R36E, Section 6, Unit Letter P
Lea County, New Mexico

MARCH 16, 2005

Prepared For:

RICE *Operating Company*
122 West Taylor
Hobbs, New Mexico 88240

Prepared By:

TRIDENT ENVIRONMENTAL

P O Box 7624
Midland, Texas 79708

CERTIFIED MAIL
RETURN RECIEPT NO. 7099 3400 0017 1737 2510

March 16, 2005

Mr. Wayne Price
New Mexico Energy, Minerals, & Natural Resources
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87504

RE: **CORRECTIVE ACTION PLAN**
EME P-6 LINE LEAK
T20S-R37E-Section 6, Unit Letter P
NMOCD CASE # 1R0422

Mr. Price:

RICE Operating Company (ROC) has retained Trident Environmental to address potential environmental concerns at the above-referenced site. ROC is the service provider (operator) for the EME SWD System and has no ownership of any portion of the pipeline, well, or facility. The System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Environmental projects of this magnitude require System Partner AFE approval and work begins as funds are received. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission is requested.

For all environmental projects, ROC will choose a path forward that:

- protects public health,
- provides the greatest net environmental benefit,
- complies with NMOCD Rules, and
- is supported by good science.

This Corrective Action Plan (CAP) is a proposal for the recommended remedy based on the results of additional site characterization and assessment conducted on January 21, 2005. After implementing the remedy, a closure report with final documentation will be submitted.

INVESTIGATION & CHARACTERIZATION ASSESSMENT

Background

The P-6 line leak site is located on land owned by ChevronTexaco in township 20 south, range 36 east, section 6, unit letter P approximately 4 miles west-southwest of Monument, NM as shown on the attached site location map (Figure 1). Land in the site area is primarily utilized for crude oil and gas production and cattle ranching. Area crude oil and gas production is operated by ChevronTexaco and Dynegy.

Soil Sampling Procedures and Results

On January 21, 2005, a backhoe was mobilized on site to facilitate the collection of soil samples for further delineation of the vertical and horizontal extent of hydrocarbon- and chloride-impacted soil, which resulted from a historic line leak at the site. Soil samples were field-tested for chloride content using the titration method in accordance with procedures explained in QP-01 (attached). Soil samples submitted to the laboratory were analyzed for gas and diesel range organics (GRO and DRO) using EPA Method 8015 to determine TPH concentrations. Samples were also collected for headspace analysis using an organic vapor meter (OVM), which was calibrated to assume a benzene response factor. Samples with headspace readings or GRO levels above 100 ppm were also analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8260B. The following concentrations of analytes were used to delineate the lateral and vertical extent of impact to the vadose zone:

- 100 mg/kg TPH
- 100 ppm OVM, and/or 10 mg/kg benzene and 50 mg/kg BTEX
- 250 ppm chloride

The results of the soil sampling and analysis are summarized in Table 1 and depicted in Figure 2. Based on all of the sampling results to date the area of impacted soil is no more than 30 feet in diameter near the surface. The impacted soil decreases in magnitude and lateral extent with depth to a maximum depth of approximately 19 feet directly below the line leak. The lab reports, chain of custody, and photographic documentation for the January 21, 2005, soil sampling activities are attached in the appendices.

Groundwater Elevations, Flow Direction and Hydraulic Gradient

The most recent depth to water measurements were obtained on February 7, 2005. The most recent water table elevations and direction of groundwater flow are shown on the site map (Figure 3). Depth to groundwater beneath the site area is approximately 30 feet below ground surface. The hydraulic gradient is approximately 0.001 feet/foot with a gradient direction heading to the southeast. Groundwater elevation data for the current and all previous monitoring events is summarized in Table 2.

Chloride, Sulfate, and TDS Concentrations in Groundwater

Each monitoring well (P6-1, P6-2, and M5-1) has been sampled on a quarterly basis for major ions, TDS, and BTEX. A summary of pertinent analytical results and groundwater elevations is listed in Table 2. Analytical results are also depicted on the site map in Figure 3 and in graphical format in Figures 4, 5, and 6.

- BTEX concentrations in monitoring wells P6-1, P6-2, and M5-1 have been below the laboratory detection limit of 0.001 mg/L for each constituent and for every sampling event taken place.

- Chloride concentrations in monitoring wells P6-1 (8,210 mg/L), P6-2 7,030 mg/L), and M5-1 (6,710 mg/L) exceed the WQCC standard of 250 mg/L.

- Monitoring wells P6-1 (1,870 mg/L), P6-2 (1,860 mg/L), M5-1 (1,450 mg/L) exceed the WQCC standard of 600 mg/L for sulfate.

- TDS concentrations in monitoring wells P6-1 (17,800 mg/L), P6-2 (15,300 mg/L), and M5-1 (13,200 mg/L) exceed the WQCC standard of 1,000 mg/L.

Chloride and TDS concentrations in monitoring wells P6-1, P6-2, and M5-1 have remained relatively stable although some minor fluctuations have occurred. No correlations between chloride/TDS concentrations and changes in groundwater levels are evident at this time.

Proposed Remedies

Excavation, lining, backfilling, and reseeding with native vegetation, as described herein, are proposed as engineering controls for site remediation. The excavation contractor will be responsible for contacting the New Mexico One Call for all line location requests. During excavation operations, subsurface soil samples will be collected and field screened with an organic vapor analyzer (OVM). Soil samples will also be field-tested for chloride content using the titration method in accordance with procedures explained in QP-01 (attached).

It is proposed that using conventional backhoe equipment, the excavation shall not exceed an average of 12 to 16 feet below ground surface (bgs). Soil with GRO or DRO levels above 1,000 mg/kg shall be hauled to an NMOCD-approved facility. Upon completion of excavation activities, closure samples will be collected in accordance with the procedures explained in QP-06, QP-07, and QP-08 (attached). Soil samples submitted to the laboratory shall be analyzed for gas and diesel range organics (GRO and DRO) using EPA Method 8015 to determine TPH concentrations. Samples with headspace readings or GRO levels above 100 ppm will also be analyzed for BTEX using EPA Method 8021B.

A minimum 10-12 inch thick clay liner, compacted to meet or exceed 95 percent of a Proctor Test (ASTM-D-698) with a permeability less than or equal to 10-7 cm/sec, will be installed three to five feet below ground surface. The clay liner will be sloped to the southeast and shall extend laterally to insure sufficient deflection of any potential infiltrating water originating from the surface. The backfill (above and below the clay liner) will be composed of blended or remediated soil that will support vegetation. The surface will be contoured and shall be reseeded with native vegetation to eliminate any ponding of precipitation and promote evapotranspiration, thereby minimizing natural infiltration. Vegetation will be monitored for growth.

Continued monitoring of groundwater quality (major ions and TDS) is recommended at a reduced frequency (semi-annually). The next two years of groundwater monitoring will be compared to the three-year trend already documented in which the chloride and TDS levels have not increased as a result of a line leak at this site. Analysis for BTEX concentrations should be suspended, as there has been no indication of dissolved hydrocarbons since the groundwater monitoring program began in January 2002 (13 consecutive quarters).

Sincerely,

Gilbert J. Van Deventer

Gilbert J. Van Deventer, REM, PG, NMCS
Trident Environmental - Project Manager

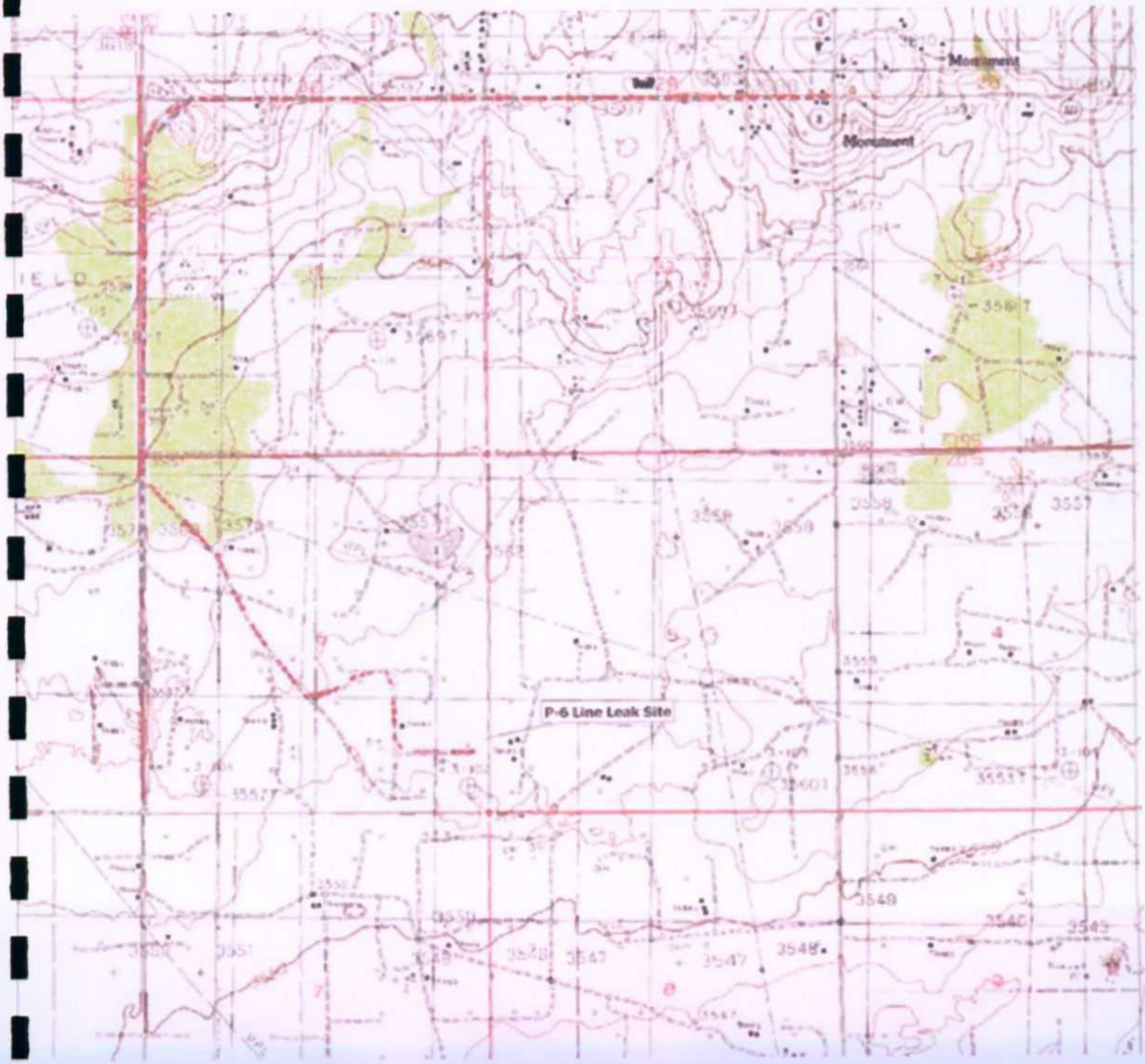
cc: CDH, KFP, file

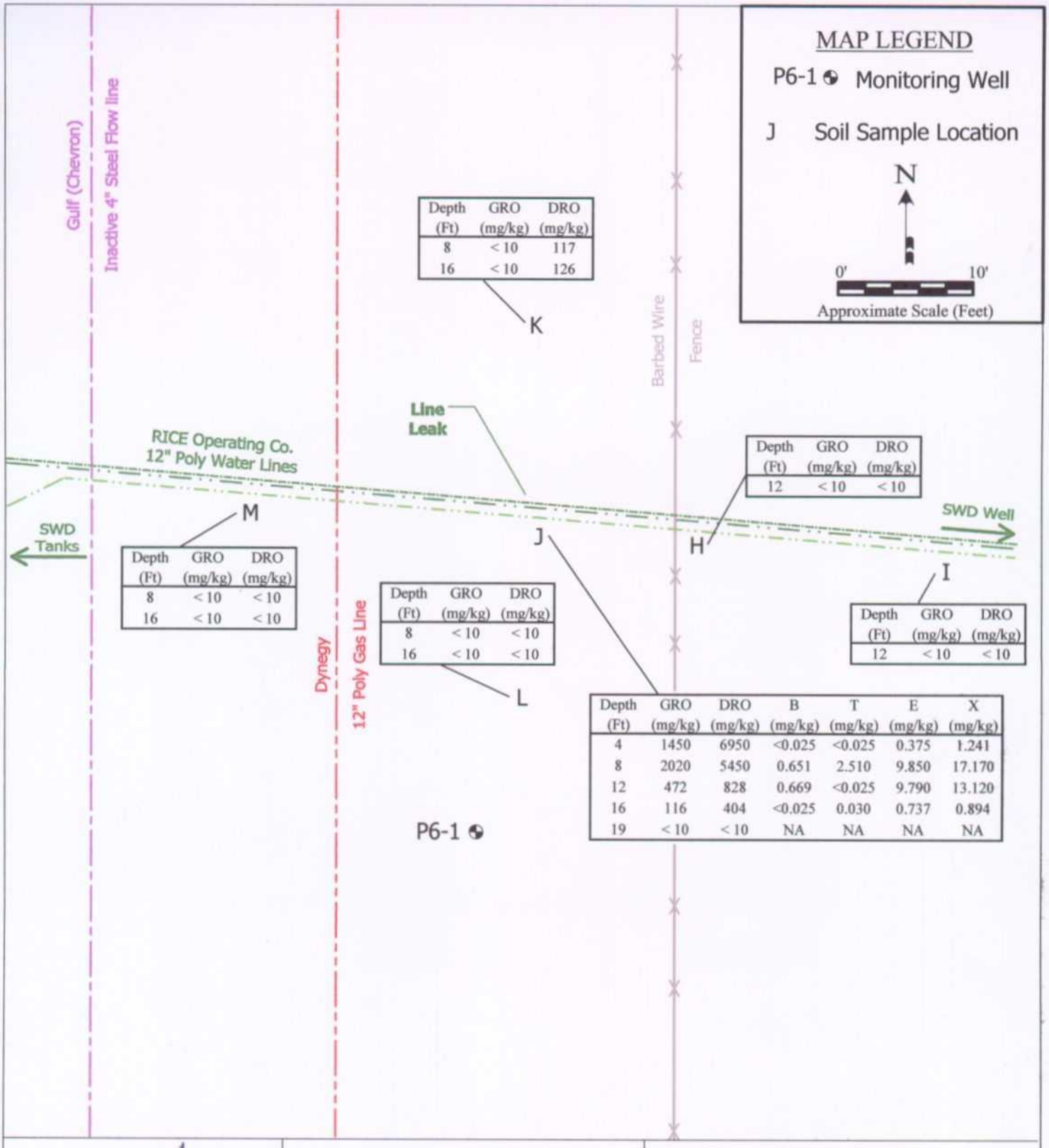
enclosures: maps, tables, graphs, sampling procedures, and laboratory reports

MAPS

Figure 1
Site Location Map
P-6 Line Leak Site
T20S-R36E-Sec 6P

Directions: From the junction of Hwy 322 and Hwy 8 in Monument proceed 2 miles west on Hwy 322 then 0.5 miles south. Turn left onto CR 41 (Maddox Rd) and continue 1/2 mile south. Turn left onto caliche lease road and proceed southeast ¾ mile to gate. Proceed through gate and continue northeast ¼ mile. Turn right and continue ¼ mile south. Turn left and proceed ¼ mile east to site.





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Site: EME P-6 Line Leak

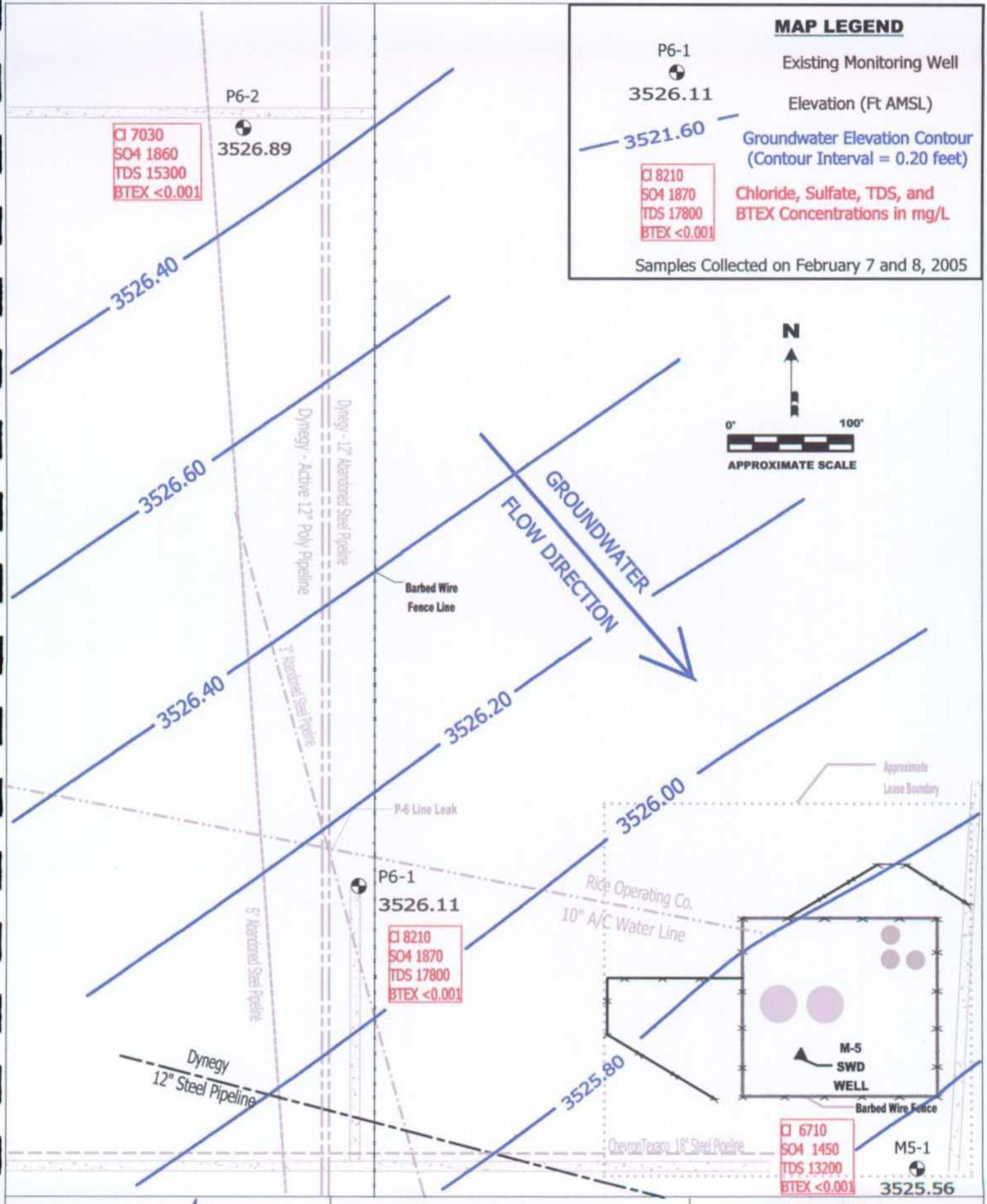
Sampling Date: January 21 and 24, 2005

Author: GJV

Approximate Scale: 1 inch = 10 feet

FIGURE 2

SOIL SAMPLE RESULTS



TRIDENT ENVIRONMENTAL

Site: EME P-6 Line Leak	FIGURE 3
Date: February 7, 2005	EME SYSTEM
Author: GJV	P-6 LINE LEAK & M-5 SWD
File: Projects/Rice/EME/P6/P6SiteMap	SITE MAP

TABLES AND GRAPHS

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EME P-6 Line Leak Site
T20S-R36E-Sec6P

Table 1

SOIL SAMPLE RESULTS

Sampling Date: January 21 & 24, 2005

Sample Location	Sample Depth (Ft bgs)	Chloride (ppm)	OVM (ppm)	GRO (mg/kg)	DRO (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)
H	4	165	0	NA	NA	NA	NA	NA	NA
	8	118	2.5	NA	NA	NA	NA	NA	NA
	12	116	2	< 10	< 10	NA	NA	NA	NA
I	4	144	0	NA	NA	NA	NA	NA	NA
	8	146	0	NA	NA	NA	NA	NA	NA
	12	144	0	< 10	< 10	NA	NA	NA	NA
J	4	145	71	1450	6950	<0.025	<0.025	0.375	1.241
	8	551	309	2020	5450	0.651	2.510	9.850	17.170
	12	871	425	472	828	0.669	<0.025	9.790	13.120
	16	813	169	116	404	<0.025	0.030	0.737	0.894
	19	453	9	< 10	< 10	NA	NA	NA	NA
K	4	152	2	NA	NA	NA	NA	NA	NA
	8	289	2	< 10	117	NA	NA	NA	NA
	12	306	0	NA	NA	NA	NA	NA	NA
	16	174	0	< 10	126	NA	NA	NA	NA
L	4	138	7	NA	NA	NA	NA	NA	NA
	8	153	0	< 10	< 10	NA	NA	NA	NA
	12	594	0	NA	NA	NA	NA	NA	NA
	16	986	0	< 10	< 10	NA	NA	NA	NA
M	4	115	0	NA	NA	NA	NA	NA	NA
	8	85	0	< 10	< 10	NA	NA	NA	NA
	12	262	0	NA	NA	NA	NA	NA	NA
	16	259	0	< 10	< 10	NA	NA	NA	NA

Chloride analysis performed on site using chloride titration method (QP-03)

Organic Vapor Analyzer (OVM) readings obtained using Thermal Instruments Model 51B calibrated for benzene.

Gas Range Organics (GRO) and Diesel Range Organics (DRO) analyzed using EPA Method 8015M.

Benzene, toluene, ethylbenzene, and xylenes (BTEX) analyzed using EPA Method 8060B.

Table 2
Summary of Groundwater Sampling Results
EME P-6 Line Leak Site

Monitoring Well	Sample Date	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)	Depth to Groundwater (feet BTOC)	Groundwater Elevation (feet AMSL)
P6-1	01/10/02	**10700**	**999**	**20248**	< 0.002	< 0.002	< 0.002	< 0.006	36.70	3522.32
	05/14/02	**8060**	**852**	**18200**	< 0.001	< 0.001	< 0.001	< 0.001	36.73	3522.29
	08/15/02	**9570**	**646**	**16900**	< 0.001	< 0.001	< 0.001	< 0.001	36.95	3522.07
	11/06/02	**9040**	**952**	**17400**	< 0.001	< 0.001	< 0.001	< 0.001	37.15	3521.87
	02/27/03	**8860**	**741**	**15000**	< 0.001	< 0.001	< 0.001	< 0.001	37.12	3521.90
	05/29/03	**8680**	**858**	**20000**	< 0.001	< 0.001	< 0.001	< 0.001	37.19	3521.83
	08/21/03	**8860**	**683**	**17800**	< 0.001	< 0.001	< 0.001	< 0.001	37.43	3521.59
	11/19/03	**8690**	**619**	**18500**	< 0.001	< 0.001	< 0.001	< 0.001	37.64	3521.38
	02/20/04	**8510**	**830**	**16600**	< 0.001	< 0.001	< 0.001	< 0.001	37.84	3521.18
	05/06/04	**8510**	**756**	**17400**	< 0.001	< 0.001	< 0.001	< 0.001	37.36	3521.66
	08/10/04	**9040**	**889**	**17200**	< 0.001	< 0.001	< 0.001	< 0.001	37.03	3521.99
	11/09/04	**9130**	**1220**	**17600**	< 0.001	< 0.001	< 0.001	< 0.001	36.28	3522.74
	02/07/05	**8210**	**1870**	**17800**	< 0.001	< 0.001	< 0.001	< 0.001	33.54	3526.11
P6-2	02/20/04	**9040**	**1260**	**19700**	< 0.001	< 0.001	< 0.001	< 0.001	37.97	3521.68
	05/06/04	**8330**	**1340**	**16100**	< 0.001	< 0.001	< 0.001	< 0.001	37.29	3522.36
	08/10/04	**8240**	**1220**	**15400**	< 0.001	< 0.001	< 0.001	< 0.001	36.97	3522.68
	11/09/04	**7670**	**1280**	**15700**	< 0.001	< 0.001	< 0.001	< 0.001	35.83	3523.82
	02/07/05	**7030**	**1860**	**15300**	< 0.001	< 0.001	< 0.001	< 0.001	32.76	3526.89
M5-1	12/11/03	**6198**	99.8	**10784**	< 0.002	< 0.002	< 0.002	< 0.006	33.28	3521.13
	02/20/04	**5320**	454	**14500**	< 0.002	< 0.002	< 0.002	< 0.006	33.37	3521.04
	05/06/04	**5940**	420	**12400**	< 0.002	< 0.002	< 0.002	< 0.006	32.79	3521.62
	08/10/04	**6910**	470	**17300**	< 0.001	< 0.001	< 0.001	< 0.001	32.52	3521.89
	11/09/04	**7090**	**614**	**14000**	< 0.001	< 0.001	< 0.001	< 0.001	31.63	3522.78
	02/07/05	**6710**	**1450**	**13200**	< 0.001	< 0.001	< 0.001	< 0.001	28.85	3525.56
WQCC Standards		250	600	1000	0.01	0.75	0.75	0.62		

Total Dissolved Soilds (TDS), chloride, sulfate, and BTEX concentrations listed in milligrams per liter (mg/L)
Analyses performed by Environmental Lab of Texas, Odessa, TX.
Values in boldface type indicate concentrations exceed New Mexico Water Quality Commission (WQCC) standards.
AMSL - Above Mean Sea Level; BTOC - Below Top of Casing
Elevations and state plane coordinates surveyed by Basin Surveys, Hobbs, NM.

Figure 4
Chloride, Sulfate, TDS, and Groundwater Elevation Values Versus Time Graph (P6-1)

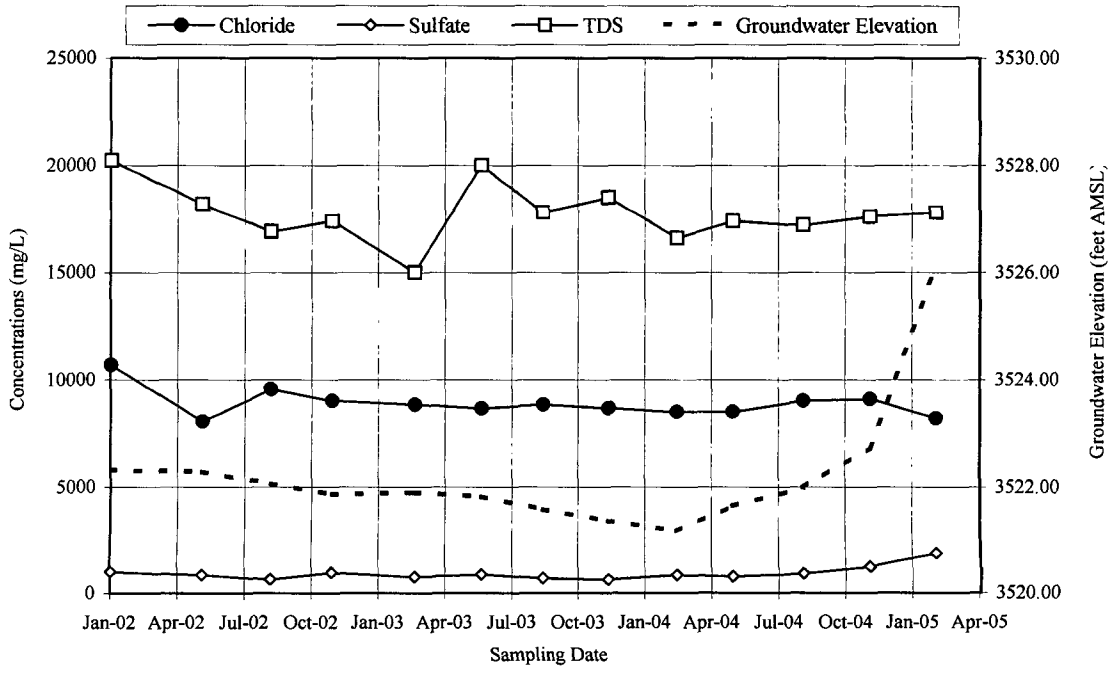


Figure 5
Chloride, Sulfate, TDS, and Groundwater Elevation Values Versus Time Graph (P6-2)

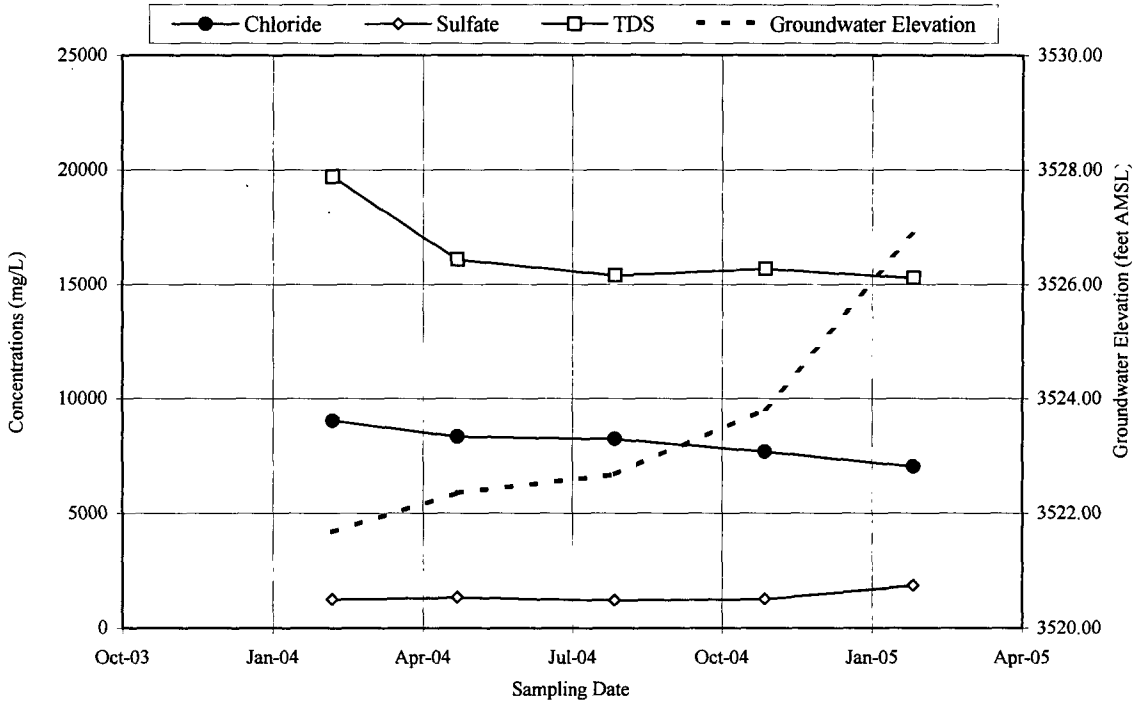
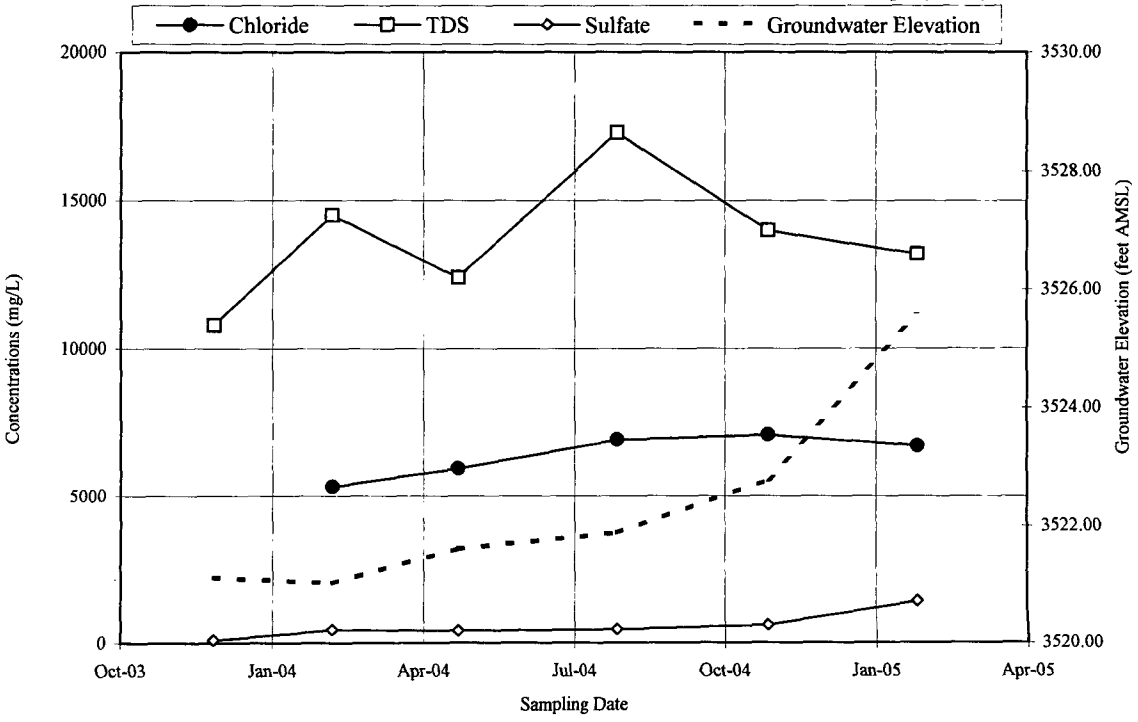


Figure 6
Chloride, Sulfate, TDS, and Groundwater Elevation Values Versus Time Graph (M5-1)



PHOTODOCUMENTATION

Photos of EME P-6 Line Leak Site (T20S, R37E, Section 6, Unit Letter P)

Sampling activity at location "H" approximately 12 feet east of former leak point (center of photo).

Sample location "J" at 16 ft depth directly below former leak point.

View of P-6 Line Leak Site facing north after completion of backhoe sampling activities.

LABORATORY REPORTS

AND

CHAIN OF CUSTODY DOCUMENTATION

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Kristin Farris

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: EME System P-6 Line Leak Site

Project Number: None Given

Location: T20S, R37E, Sec 6, Unit Letter P

Lab Order Number: 5A25025

Report Date: 02/07/05

Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
H (12')	5A25025-01	Soil	01/21/05 09:45	01/25/05 16:20
I (12')	5A25025-02	Soil	01/21/05 10:15	01/25/05 16:20
J (4')	5A25025-03	Soil	01/21/05 11:05	01/25/05 16:20
J (8')	5A25025-04	Soil	01/21/05 11:10	01/25/05 16:20
J (12')	5A25025-05	Soil	01/21/05 11:15	01/25/05 16:20
J (16')	5A25025-06	Soil	01/21/05 11:30	01/25/05 16:20
J (19')	5A25025-07	Soil	01/24/05 09:00	01/25/05 16:20
K (8')	5A25025-08	Soil	01/24/05 10:05	01/25/05 16:20
K (16')	5A25025-09	Soil	01/24/05 10:15	01/25/05 16:20
L (8')	5A25025-10	Soil	01/24/05 10:40	01/25/05 16:20
L (16')	5A25025-11	Soil	01/24/05 10:55	01/25/05 16:20
M (8')	5A25025-12	Soil	01/24/05 11:30	01/25/05 16:20
M (16')	5A25025-13	Soil	01/24/05 12:30	01/25/05 16:20

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
H (12') (5A25025-01) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA52802	01/28/05	01/30/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*90.6 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*97.6 %*	*70-130*		"	"	"	"	
I (12') (5A25025-02) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*93.0 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*101 %*	*70-130*		"	"	"	"	
J (4') (5A25025-03) Soil									
Gasoline Range Organics C6-C12	**1450**	50.0	mg/kg dry	5	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	**6950**	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**8400**	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*21.8 %*	*70-130*		"	"	"	"	*S-06*
Surrogate: 1-Chlorooctadecane		*23.0 %*	*70-130*		"	"	"	"	*S-06*
J (8') (5A25025-04) Soil									
Gasoline Range Organics C6-C12	**2020**	50.0	mg/kg dry	5	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	**5450**	50.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**7470**	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*24.6 %*	*70-130*		"	"	"	"	*S-06*
Surrogate: 1-Chlorooctadecane		*25.2 %*	*70-130*		"	"	"	"	*S-06*
J (12') (5A25025-05) Soil									
Gasoline Range Organics C6-C12	**472**	10.0	mg/kg dry	1	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	**828**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**1300**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*97.6 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*98.4 %*	*70-130*		"	"	"	"	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
J (16') (5A25025-06) Soil									
Gasoline Range Organics C6-C12	**116**	10.0	mg/kg dry	1	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	**404**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**520**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*87.6 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*84.6 %*	*70-130*		"	"	"	"	
J (19') (5A25025-07) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*82.0 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*84.6 %*	*70-130*		"	"	"	"	
K (8') (5A25025-08) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	**117**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**117**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*78.2 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*82.0 %*	*70-130*		"	"	"	"	
K (16') (5A25025-09) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	**126**	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	**126**	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*84.6 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*89.0 %*	*70-130*		"	"	"	"	
L (8') (5A25025-10) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*85.4 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*89.8 %*	*70-130*		"	"	"	"	

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
L (16') (5A25025-11) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*84.6 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*87.8 %*	*70-130*		"	"	"	"	
M (8') (5A25025-12) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*101 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*107 %*	*70-130*		"	"	"	"	
M (16') (5A25025-13) Soil									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EA52802	01/28/05	01/29/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		*78.0 %*	*70-130*		"	"	"	"	
Surrogate: 1-Chlorooctadecane		*80.8 %*	*70-130*		"	"	"	"	

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
H (12') (5A25025-01) Soil									
% Moisture	**15.4**		%	1	EA52605	01/26/05	01/27/05	% calculation	
I (12') (5A25025-02) Soil									
% Moisture	**2.5**		%	1	EA52605	01/26/05	01/27/05	% calculation	
J (4') (5A25025-03) Soil									
% Moisture	**14.4**		%	1	EA52605	01/26/05	01/27/05	% calculation	
J (8') (5A25025-04) Soil									
% Moisture	**16.2**		%	1	EA52605	01/26/05	01/27/05	% calculation	
J (12') (5A25025-05) Soil									
% Moisture	**19.3**		%	1	EA52605	01/26/05	01/27/05	% calculation	
J (16') (5A25025-06) Soil									
% Moisture	**14.7**		%	1	EA52605	01/26/05	01/27/05	% calculation	
J (19') (5A25025-07) Soil									
% Moisture	**3.2**		%	1	EA52605	01/26/05	01/27/05	% calculation	
K (8') (5A25025-08) Soil									
% Moisture	**9.9**		%	1	EA52605	01/26/05	01/27/05	% calculation	
K (16') (5A25025-09) Soil									
% Moisture	**7.0**		%	1	EA52605	01/26/05	01/27/05	% calculation	
L (8') (5A25025-10) Soil									
% Moisture	**14.9**		%	1	EA52605	01/26/05	01/27/05	% calculation	
L (16') (5A25025-11) Soil									
% Moisture	**12.7**		%	1	EA52605	01/26/05	01/27/05	% calculation	

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
M (8') (5A25025-12) Soil									
% Moisture	**15.4**		%	1	EA52605	01/26/05	01/27/05	% calculation	
M (16') (5A25025-13) Soil									
% Moisture	**9.5**		%	1	EA52605	01/26/05	01/27/05	% calculation	

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

SPLP Volatile Organic Compounds by EPA Method 1312/8260B

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Extracted	Prepared	Analyzed	Method	Notes
H (12') (5A25025-01) Soil										
Benzene	ND	1.00	ug/l	1	EB50401	01/31/05 SPLP	02/01/05	02/01/05	EPA 8260B	
Toluene	ND	1.00	"	"	"	"	"	"	"	
Ethylbenzene	**J [0.680]**	1.00	"	"	"	"	"	"	"	J
Xylene (p/m)	**1.06**	1.00	"	"	"	"	"	"	"	
Xylene (o)	ND	1.00	"	"	"	"	"	"	"	
Naphthalene	**1.05**	1.00	"	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*97.6 %*		*70-139*	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*87.0 %*		*52-149*	"	"	"	"	"	
Surrogate: Toluene-d8		*97.2 %*		*76-125*	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*		*66-145*	"	"	"	"	"	

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

Volatile Organic Compounds by EPA Method 8260B

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
J (4') (5A25025-03) Soil									
Benzene	ND	25.0	ug/kg dry	25	EA53105	01/28/05	01/31/05	EPA 8260B	
Toluene	**J [14.8]**	25.0	"	"	"	"	"	"	J
Ethylbenzene	**375**	25.0	"	"	"	"	"	"	
Xylene (p/m)	**131**	25.0	"	"	"	"	"	"	
Xylene (o)	**1110**	25.0	"	"	"	"	"	"	
Naphthalene	**42.3**	25.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*90.4 %*	*70-139*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*80.4 %*	*52-149*		"	"	"	"	
Surrogate: Toluene-d8		*92.6 %*	*76-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*112 %*	*66-145*		"	"	"	"	
J (8') (5A25025-04) Soil									
Benzene	**651**	100	ug/kg dry	100	EA53105	01/28/05	01/28/05	EPA 8260B	
Toluene	**2510**	100	"	"	"	"	"	"	
Ethylbenzene	**9850**	100	"	"	"	"	"	"	
Xylene (p/m)	**12500**	100	"	"	"	"	"	"	
Xylene (o)	**4670**	100	"	"	"	"	"	"	
Naphthalene	**2800**	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*100 %*	*70-139*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*92.8 %*	*52-149*		"	"	"	"	
Surrogate: Toluene-d8		*96.6 %*	*76-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.2 %*	*66-145*		"	"	"	"	
J (12') (5A25025-05) Soil									
Benzene	**669**	100	ug/kg dry	100	EA53105	01/28/05	01/28/05	EPA 8260B	
Toluene	**J [73.6]**	100	"	"	"	"	"	"	J
Ethylbenzene	**9790**	100	"	"	"	"	"	"	
Xylene (p/m)	**11300**	100	"	"	"	"	"	"	
Xylene (o)	**1820**	100	"	"	"	"	"	"	
Naphthalene	**3100**	100	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*100 %*	*70-139*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*95.2 %*	*52-149*		"	"	"	"	
Surrogate: Toluene-d8		*97.8 %*	*76-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.8 %*	*66-145*		"	"	"	"	

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

Volatile Organic Compounds by EPA Method 8260B

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
J (16') (5A25025-06) Soil									
Benzene	ND	25.0	ug/kg dry	25	EA53105	01/28/05	01/28/05	EPA 8260B	
Toluene	**29.7**	25.0	"	"	"	"	"	"	
Ethylbenzene	**737**	25.0	"	"	"	"	"	"	
Xylene (p/m)	**807**	25.0	"	"	"	"	"	"	
Xylene (o)	**87.1**	25.0	"	"	"	"	"	"	
Naphthalene	**246**	25.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*98.2 %*	*70-139*		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*91.2 %*	*52-149*		"	"	"	"	
Surrogate: Toluene-d8		*96.0 %*	*76-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.0 %*	*66-145*		"	"	"	"	

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA52802 - Solvent Extraction (GC)										
Blank (EA52802-BLK1)				Prepared: 01/28/05 Analyzed: 01/29/05						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*39.2*		*mg/kg*	*50.0*		*78.4*	*70-130*			
Surrogate: 1-Chlorooctadecane	*36.4*		*"*	*50.0*		*72.8*	*70-130*			
Blank (EA52802-BLK2)				Prepared: 01/28/05 Analyzed: 01/29/05						
Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	*35.8*		*mg/kg*	*50.0*		*71.6*	*70-130*			
Surrogate: 1-Chlorooctadecane	*39.7*		*"*	*50.0*		*79.4*	*70-130*			
LCS (EA52802-BS1)				Prepared: 01/28/05 Analyzed: 01/29/05						
Gasoline Range Organics C6-C12	433	10.0	mg/kg wet	500		86.6	75-125			
Diesel Range Organics >C12-C35	481	10.0	"	500		96.2	75-125			
Total Hydrocarbon C6-C35	914	10.0	"	1000		91.4	75-125			
Surrogate: 1-Chlorooctane	*37.4*		*mg/kg*	*50.0*		*74.8*	*70-130*			
Surrogate: 1-Chlorooctadecane	*37.1*		*"*	*50.0*		*74.2*	*70-130*			
LCS (EA52802-BS2)				Prepared: 01/28/05 Analyzed: 01/29/05						
Gasoline Range Organics C6-C12	450	10.0	mg/kg wet	500		90.0	75-125			
Diesel Range Organics >C12-C35	458	10.0	"	500		91.6	75-125			
Total Hydrocarbon C6-C35	908	10.0	"	1000		90.8	75-125			
Surrogate: 1-Chlorooctane	*38.2*		*mg/kg*	*50.0*		*76.4*	*70-130*			
Surrogate: 1-Chlorooctadecane	*36.4*		*"*	*50.0*		*72.8*	*70-130*			
Calibration Check (EA52802-CCV1)				Prepared: 01/28/05 Analyzed: 01/29/05						
Gasoline Range Organics C6-C12	445		mg/kg	500		89.0	80-120			
Diesel Range Organics >C12-C35	541		"	500		108	80-120			
Total Hydrocarbon C6-C35	986		"	1000		98.6	80-120			
Surrogate: 1-Chlorooctane	*50.9*		*"*	*50.0*		*102*	*70-130*			
Surrogate: 1-Chlorooctadecane	*46.5*		*"*	*50.0*		*93.0*	*70-130*			

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA52802 - Solvent Extraction (GC)										
Calibration Check (EA52802-CCV2)				Prepared: 01/28/05 Analyzed: 01/29/05						
Gasoline Range Organics C6-C12	471		mg/kg	500		94.2	80-120			
Diesel Range Organics >C12-C35	520		"	500		104	80-120			
Total Hydrocarbon C6-C35	991		"	1000		99.1	80-120			
Surrogate: 1-Chlorooctane	*43.8*		*"*	*50.0*		*87.6*	*70-130*			
Surrogate: 1-Chlorooctadecane	*47.7*		*"*	*50.0*		*95.4*	*70-130*			
Matrix Spike (EA52802-MS1)	**Source: 5A25025-01**			Prepared: 01/28/05 Analyzed: 01/29/05						
Gasoline Range Organics C6-C12	551	10.0	mg/kg dry	591	ND	93.2	75-125			
Diesel Range Organics >C12-C35	593	10.0	"	591	ND	100	75-125			
Total Hydrocarbon C6-C35	1140	10.0	"	1180	ND	96.6	75-125			
Surrogate: 1-Chlorooctane	*46.6*		*mg/kg*	*50.0*		*93.2*	*70-130*			
Surrogate: 1-Chlorooctadecane	*49.5*		*"*	*50.0*		*99.0*	*70-130*			
Matrix Spike (EA52802-MS2)	**Source: 5A26005-02**			Prepared: 01/28/05 Analyzed: 01/29/05						
Gasoline Range Organics C6-C12	497	10.0	mg/kg dry	544	ND	91.4	75-125			
Diesel Range Organics >C12-C35	575	10.0	"	544	ND	106	75-125			
Total Hydrocarbon C6-C35	1070	10.0	"	1090	ND	98.2	75-125			
Surrogate: 1-Chlorooctane	*48.5*		*mg/kg*	*50.0*		*97.0*	*70-130*			
Surrogate: 1-Chlorooctadecane	*53.6*		*"*	*50.0*		*107*	*70-130*			
Matrix Spike Dup (EA52802-MSD1)	**Source: 5A25025-01**			Prepared: 01/28/05 Analyzed: 01/29/05						
Gasoline Range Organics C6-C12	533	10.0	mg/kg dry	591	ND	90.2	75-125	3.32	20	
Diesel Range Organics >C12-C35	624	10.0	"	591	ND	106	75-125	5.09	20	
Total Hydrocarbon C6-C35	1160	10.0	"	1180	ND	98.3	75-125	1.74	20	
Surrogate: 1-Chlorooctane	*52.6*		*mg/kg*	*50.0*		*105*	*70-130*			
Surrogate: 1-Chlorooctadecane	*50.2*		*"*	*50.0*		*100*	*70-130*			
Matrix Spike Dup (EA52802-MSD2)	**Source: 5A26005-02**			Prepared: 01/28/05 Analyzed: 01/29/05						
Gasoline Range Organics C6-C12	493	10.0	mg/kg dry	544	ND	90.6	75-125	0.808	20	
Diesel Range Organics >C12-C35	570	10.0	"	544	ND	105	75-125	0.873	20	
Total Hydrocarbon C6-C35	1060	10.0	"	1090	ND	97.2	75-125	0.939	20	
Surrogate: 1-Chlorooctane	*46.1*		*mg/kg*	*50.0*		*92.2*	*70-130*			
Surrogate: 1-Chlorooctadecane	*49.4*		*"*	*50.0*		*98.8*	*70-130*			

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA52605 - General Preparation (Prep)										
Blank (EA52605-BLK1)				Prepared: 01/26/05 Analyzed: 01/27/05						
% Moisture	0.004		%							
Duplicate (EA52605-DUP1)		**Source: 5A25021-01**		Prepared: 01/26/05 Analyzed: 01/27/05						
% Moisture	1.8		%		1.6			11.8	20	

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SPLP Volatile Organic Compounds by EPA Method 1312/8260B - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB50401 - EPA 1312/ZHE										
Blank (EB50401-BLK1)				Prepared & Analyzed: 02/01/05						
Benzene	ND	1.00	ug/l							
Toluene	ND	1.00	"							
Ethylbenzene	ND	1.00	"							
Xylene (p/m)	ND	1.00	"							
Xylene (o)	ND	1.00	"							
Naphthalene	0.740	1.00	"							J
Surrogate: Dibromofluoromethane	*48.8*		"	*50.0*		*97.6*	*70-139*			
Surrogate: 1,2-Dichloroethane-d4	*41.3*		"	*50.0*		*82.6*	*52-149*			
Surrogate: Toluene-d8	*48.6*		"	*50.0*		*97.2*	*76-125*			
Surrogate: 4-Bromofluorobenzene	*51.8*		"	*50.0*		*104*	*66-145*			
LCS (EB50401-BS1)				Prepared & Analyzed: 02/01/05						
Benzene	56.5		ug/l	50.0		113	70-130			
Toluene	56.4		"	50.0		113	70-130			
Ethylbenzene	51.9		"	50.0		104	70-130			
Xylene (p/m)	90.4		"	100		90.4	70-130			
Xylene (o)	57.2		"	50.0		114	70-130			
Naphthalene	57.0		"	50.0		114	70-130			
Surrogate: Dibromofluoromethane	*48.6*		"	*50.0*		*97.2*	*70-139*			
Surrogate: 1,2-Dichloroethane-d4	*48.8*		"	*50.0*		*97.6*	*52-149*			
Surrogate: Toluene-d8	*49.8*		"	*50.0*		*99.6*	*76-125*			
Surrogate: 4-Bromofluorobenzene	*51.6*		"	*50.0*		*103*	*66-145*			
Calibration Check (EB50401-CCV1)				Prepared & Analyzed: 02/01/05						
Toluene	55.5		ug/l	50.0		111	70-130			
Ethylbenzene	51.3		"	50.0		103	70-130			
Surrogate: Dibromofluoromethane	*49.3*		"	*50.0*		*98.6*	*70-139*			
Surrogate: 1,2-Dichloroethane-d4	*45.5*		"	*50.0*		*91.0*	*52-149*			
Surrogate: Toluene-d8	*49.7*		"	*50.0*		*99.4*	*76-125*			
Surrogate: 4-Bromofluorobenzene	*49.2*		"	*50.0*		*98.4*	*66-145*			

SPLP Volatile Organic Compounds by EPA Method 1312/8260B - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB50401 - EPA 1312/ZHE										
Matrix Spike (EB50401-MS1)	**Source: 5A25025-01**			Prepared: 02/01/05 Analyzed: 02/02/05						
Benzene	56.5		ug/l	50.0	ND	113	70-130			
Toluene	57.6		"	50.0	ND	115	70-130			
Ethylbenzene	54.3		"	50.0	0.680	107	70-130			
Xylene (p/m)	98.5		"	100	1.06	97.4	70-130			
Xylene (o)	58.0		"	50.0	ND	116	70-130			
Naphthalene	53.8		"	50.0	1.05	106	70-130			
Surrogate: Dibromofluoromethane	*49.3*		"	*50.0*		*98.6*	*70-139*			
Surrogate: 1,2-Dichloroethane-d4	*50.5*		"	*50.0*		*101*	*52-149*			
Surrogate: Toluene-d8	*49.3*		"	*50.0*		*98.6*	*76-125*			
Surrogate: 4-Bromofluorobenzene	*50.6*		"	*50.0*		*101*	*66-145*			
Matrix Spike Dup (EB50401-MSD1)	**Source: 5A25025-01**			Prepared: 02/01/05 Analyzed: 02/02/05						
Benzene	55.7		ug/l	50.0	ND	111	70-130	1.79	20	
Toluene	56.3		"	50.0	ND	113	70-130	1.75	20	
Ethylbenzene	54.1		"	50.0	0.680	107	70-130	0.00	20	
Xylene (p/m)	96.8		"	100	1.06	95.7	70-130	1.76	20	
Xylene (o)	57.8		"	50.0	ND	116	70-130	0.00	20	
Naphthalene	56.1		"	50.0	1.05	110	70-130	3.70	20	
Surrogate: Dibromofluoromethane	*47.7*		"	*50.0*		*95.4*	*70-139*			
Surrogate: 1,2-Dichloroethane-d4	*48.6*		"	*50.0*		*97.2*	*52-149*			
Surrogate: Toluene-d8	*49.7*		"	*50.0*		*99.4*	*76-125*			
Surrogate: 4-Bromofluorobenzene	*51.6*		"	*50.0*		*103*	*66-145*			

Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA53105 - EPA 5030C (GCMS)										
Blank (EA53105-BLK1)				Prepared & Analyzed: 01/28/05						
Benzene	ND	25.0	ug/kg wet							
Toluene	ND	25.0	"							
Ethylbenzene	ND	25.0	"							
Xylene (p/m)	ND	25.0	"							
Xylene (o)	ND	25.0	"							
Naphthalene	ND	25.0	"							
Surrogate: Dibromofluoromethane	*45.1*		*ug/l*	*50.0*		*90.2*	*70-139*			
Surrogate: 1,2-Dichloroethane-d4	*41.2*		*"*	*50.0*		*82.4*	*52-149*			
Surrogate: Toluene-d8	*48.1*		*"*	*50.0*		*96.2*	*76-125*			
Surrogate: 4-Bromofluorobenzene	*47.1*		*"*	*50.0*		*94.2*	*66-145*			
LCS (EA53105-BS1)				Prepared & Analyzed: 01/28/05						
Benzene	52.5		ug/l	50.0		105	70-130			
Toluene	55.2		"	50.0		110	70-130			
Ethylbenzene	54.2		"	50.0		108	70-130			
Xylene (p/m)	99.2		"	100		99.2	70-130			
Xylene (o)	59.4		"	50.0		119	70-130			
Naphthalene	49.6		"	50.0		99.2	70-130			
Surrogate: Dibromofluoromethane	*45.2*		*"*	*50.0*		*90.4*	*70-139*			
Surrogate: 1,2-Dichloroethane-d4	*46.2*		*"*	*50.0*		*92.4*	*52-149*			
Surrogate: Toluene-d8	*49.5*		*"*	*50.0*		*99.0*	*76-125*			
Surrogate: 4-Bromofluorobenzene	*48.7*		*"*	*50.0*		*97.4*	*66-145*			
Calibration Check (EA53105-CCV1)				Prepared & Analyzed: 01/28/05						
Benzene	54.4		ug/l	50.0		109	70-130			
Toluene	55.4		"	50.0		111	70-130			
Ethylbenzene	53.4		"	50.0		107	70-130			
Xylene (p/m)	98.0		"	100		98.0	70-130			
Xylene (o)	57.3		"	50.0		115	70-130			
Naphthalene	49.5		"	50.0		99.0	70-130			
Surrogate: Dibromofluoromethane	*46.7*		*"*	*50.0*		*93.4*	*70-139*			
Surrogate: 1,2-Dichloroethane-d4	*48.7*		*"*	*50.0*		*97.4*	*52-149*			
Surrogate: Toluene-d8	*49.2*		*"*	*50.0*		*98.4*	*76-125*			
Surrogate: 4-Bromofluorobenzene	*50.5*		*"*	*50.0*		*101*	*66-145*			

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA53105 - EPA 5030C (GCMS)										
Matrix Spike (EA53105-MS1)	**Source: 5A27003-03**			Prepared & Analyzed: 01/28/05						
Benzene	1390		ug/l	1250	ND	111	70-130			
Toluene	1430		"	1250	ND	114	70-130			
Ethylbenzene	1390		"	1250	ND	111	70-130			
Xylene (p/m)	2470		"	2500	30.7	97.6	70-130			
Xylene (o)	1480		"	1250	15.3	117	70-130			
Naphthalene	1210		"	1250	47.7	93.0	70-130			
Surrogate: Dibromofluoromethane	*45.4*		"	*50.0*		*90.8*	*70-139*			
Surrogate: 1,2-Dichloroethane-d4	*46.3*		"	*50.0*		*92.6*	*52-149*			
Surrogate: Toluene-d8	*49.6*		"	*50.0*		*99.2*	*76-125*			
Surrogate: 4-Bromofluorobenzene	*49.8*		"	*50.0*		*99.6*	*66-145*			
Matrix Spike Dup (EA53105-MSD1)	**Source: 5A27003-03**			Prepared & Analyzed: 01/28/05						
Benzene	1370		ug/l	1250	ND	110	70-130	0.905	20	
Toluene	1410		"	1250	ND	113	70-130	0.881	20	
Ethylbenzene	1360		"	1250	ND	109	70-130	1.82	20	
Xylene (p/m)	2460		"	2500	30.7	97.2	70-130	0.411	20	
Xylene (o)	1460		"	1250	15.3	116	70-130	0.858	20	
Naphthalene	1240		"	1250	47.7	95.4	70-130	2.55	20	
Surrogate: Dibromofluoromethane	*47.9*		"	*50.0*		*95.8*	*70-139*			
Surrogate: 1,2-Dichloroethane-d4	*47.9*		"	*50.0*		*95.8*	*52-149*			
Surrogate: Toluene-d8	*49.2*		"	*50.0*		*98.4*	*76-125*			
Surrogate: 4-Bromofluorobenzene	*50.2*		"	*50.0*		*100*	*66-145*			

Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/07/05 10:12

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Raland K Tuttle Date: 2/7/2005

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Kristin Farris
Company Name Rice Operating Company
Company Address: 122 West Taylor
City/State/Zip: Hobbs, New Mexico 88240
Telephone No: 505-393-9174 **Fax No:** 505-397-1471
Sampler Signature:

Project Name: EME System P-6 Line Leak Site
Project #:
Project Location: T20S, R37E, Sec 6, Unit Letter P
COC #: V117P6-0105-1

Page 1 of 2

SA25025

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TPH: 418.1 (8015M) 100S 100	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEXN (8021B/5030 or BTEXN 8260)	RCI	N.O.R.M.	Total Dissolved Solids	SPLP 1312 6TCLP X			RUSH TAT (Pre-Schedu	Standard TAT
-01	H (12')	01-21-05	0945	1	✓									✓		✓											X				✓
-02	I (12')	01-21-05	1015	1	✓									✓		✓															✓
-03	J (4')	01-21-05	1105	1	✓									✓		✓															✓
-04	J (8')	01-21-05	1110	1	✓									✓		✓								✓							✓
-05	J (12')	01-21-05	1115	1	✓									✓		✓								✓			✓				✓
-06	J (16')	01-21-05	1130	1	✓									✓		✓								✓							✓
-07	J (19')	01-24-05	0900	1	✓									✓		✓															✓
-08	K (8')	01-24-05	1005	1	✓									✓		✓															✓
-09	K (16')	01-24-05	1015	1	✓									✓		✓															✓
-10	L (8')	01-24-05	1040	1	✓									✓		✓															✓

Special Instructions: Please email results to both gil@trident-environmental.com and to enviro@leaco.net

Analyze sample with highest TPH using SPLP 1312 (J (12') not likely based on PID)

Sample Containers Intact? (Y) N
Temperature Upon Receipt:
Laboratory Comments: 2.0°C

4oz glass on ice

Relinquished by:	Date	Time	Received by:	Date	Time
	1/25/05	4:20p			
Relinquished by:	**Date**	**Time**	**Received by ELOT:**	**Date**	**Time**
			Jason McCuiston	1-25-05	1620

Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Kristin Farris
Company Name Rice Operating Company
Company Address: 122 West Taylor
City/State/Zip: Hobbs, New Mexico 88240
Telephone No: 505-393-9174 **Fax No:** 505-397-1471
Samoler Signature:

Project Name: EME System P-6 Line Leak Site
Project #:
Project Location: T20S, R37E, Sec 6, Unit Letter P
COC #: V117P6-0105-2

Page 2 of 2

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: TPH: 418.1 (8015B) 1005 100	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEXN (8021B/5030 or BTEXN 82	RCI	N.O.R.M.	Total Dissolved Solids	SPLP 1312			RUSH TAT (Pre-Sched)	Standard TAT
5R25025																TCLP:															
																TOTAL:															
-11	L (16')	01-24-05	1055	1	✓									✓		✓														✓	✓
-12	M (8')	01-24-05	1130	1	✓									✓		✓														✓	✓
-13	M (16')	01-24-05	1230	1	✓									✓		✓														✓	✓

Special Instructions: Please email results to both gil@trident-environmental.com and to enviro@leaco.net

Sample Containers Intact? (Y) N
Temperature Upon Receipt:
Laboratory Comments: 2.0°C

4oz glass on ice

Relinquished by:	Date	Time	Received by:	Date	Time
	1/25/05	4:20p			
Relinquished by:	**Date**	**Time**	**Received by ELOT:**	**Date**	**Time**
			Jeanne McMurry	1-25-05	1620

Environmental Lab of Texas
Variance / Corrective Action Report – Sample Log-In

Client: Rice Operating

Date/Time: 1/25/05 16:58

Order #: 5A25025

Initials: JLH

Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	2.0° C
Shipping container/cooler in good condition?	Yes	No	
Custody Seals intact on shipping container/cooler?	Yes	No	Not present
Custody Seals intact on sample bottles?	Yes	No	Not present
Chain of custody present?	Yes	No	
Sample Instructions complete on Chain of Custody?	Yes	No	
Chain of Custody signed when relinquished and received?	Yes	No	
Chain of custody agrees with sample label(s)	Yes	No	
Container labels legible and intact?	Yes	No	No labels-info written on lid
Sample Matrix and properties same as on chain of custody?	Yes	No	
Samples in proper container/bottle?	Yes	No	
Samples properly preserved?	Yes	No	
Sample bottles intact?	Yes	No	
Preservations documented on Chain of Custody?	Yes	No	
Containers documented on Chain of Custody?	Yes	No	
Sufficient sample amount for indicated test?	Yes	No	
All samples received within sufficient hold time?	Yes	No	
VOC samples have zero headspace?	Yes	No	Not Applicable

Other observations:

Variance Documentation:

Contact Person: - Kristin Date/Time: 1-27-05 1435 Contacted by: PT

Regarding:

8260 BTEX-N are OK to run Rather than 8021B PT

Corrective Action Taken:

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Kristin Farris

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: EME System P-6 Line Leak Site

Project Number: None Given

Location: T2OS, R36E, Sec 6, Unit Letter P

Lab Order Number: 5B09008

Report Date: 02/20/05

Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
P6-1	5B09008-01	Water	02/07/05 16:45	02/09/05 07:00
P6-2	5B09008-02	Water	02/07/05 15:36	02/09/05 07:00

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
P6-1	5B09008-01	Water	02/07/05 16:45	02/09/05 07:00
P6-2	5B09008-02	Water	02/07/05 15:36	02/09/05 07:00

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
P6-1 (5B09008-01) Water									
Benzene	ND	0.00100	mg/L	1	EB51807	02/14/05	02/15/05	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*108 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*116 %*	*80-120*		"	"	"	"	
P6-2 (5B09008-02) Water									
Benzene	ND	0.00100	mg/L	1	EB51807	02/14/05	02/15/05	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*100 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*116 %*	*80-120*		"	"	"	"	

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
P6-1 (5B09008-01) Water									
Total Alkalinity	**218**	2.00	mg/L	1	EB51404	02/15/05	02/15/05	EPA 310.2M	
Chloride	**8210**	500	"	1000	EB51713	02/10/05	02/10/05	EPA 300.0	
Total Dissolved Solids	**17800**	5.00	"	1	EB51004	02/09/05	02/10/05	EPA 160.1	
Sulfate	**1870**	500	"	1000	EB51713	02/10/05	02/10/05	EPA 300.0	
P6-2 (5B09008-02) Water									
Total Alkalinity	**222**	2.00	mg/L	1	EB51404	02/15/05	02/15/05	EPA 310.2M	
Chloride	**7030**	500	"	1000	EB51713	02/10/05	02/10/05	EPA 300.0	
Total Dissolved Solids	**15300**	5.00	"	1	EB51004	02/09/05	02/10/05	EPA 160.1	
Sulfate	**1860**	500	"	1000	EB51713	02/10/05	02/10/05	EPA 300.0	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

Total Metals by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
P6-1 (5B09008-01) Water									
Calcium	**1790**	10.0	mg/L	1000	EB51702	02/14/05	02/16/05	EPA 6010B	
Magnesium	**576**	0.200	"	200	"	"	"	"	
Potassium	**56.3**	1.00	"	20	"	"	"	"	
Sodium	**3960**	10.0	"	1000	"	"	"	"	
P6-2 (5B09008-02) Water									
Calcium	**1580**	10.0	mg/L	1000	EB51702	02/14/05	02/16/05	EPA 6010B	
Magnesium	**515**	0.200	"	200	"	"	"	"	
Potassium	**47.1**	1.00	"	20	"	"	"	"	
Sodium	**3550**	10.0	"	1000	"	"	"	"	

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51807 - EPA 5030C (GC)										
Blank (EB51807-BLK1)				Prepared & Analyzed: 02/14/05						
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	*16.5*		*ug/l*	*20.0*		*82.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*17.4*		*"*	*20.0*		*87.0*	*80-120*			
LCS (EB51807-BS1)				Prepared & Analyzed: 02/14/05						
Benzene	105		ug/l	100		105	80-120			
Toluene	105		"	100		105	80-120			
Ethylbenzene	95.9		"	100		95.9	80-120			
Xylene (p/m)	196		"	200		98.0	80-120			
Xylene (o)	95.7		"	100		95.7	80-120			
Surrogate: a,a,a-Trifluorotoluene	*16.5*		*"*	*20.0*		*82.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*16.8*		*"*	*20.0*		*84.0*	*80-120*			
LCS Dup (EB51807-BSD1)				Prepared & Analyzed: 02/14/05						
Benzene	113		ug/l	100		113	80-120	7.34	20	
Toluene	112		"	100		112	80-120	6.45	20	
Ethylbenzene	107		"	100		107	80-120	10.9	20	
Xylene (p/m)	224		"	200		112	80-120	13.3	20	
Xylene (o)	111		"	100		111	80-120	14.8	20	
Surrogate: a,a,a-Trifluorotoluene	*18.6*		*"*	*20.0*		*93.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*20.2*		*"*	*20.0*		*101*	*80-120*			
Calibration Check (EB51807-CCV1)				Prepared: 02/14/05 Analyzed: 02/16/05						
Benzene	97.5		ug/l	100		97.5	80-120			
Toluene	104		"	100		104	80-120			
Ethylbenzene	93.1		"	100		93.1	80-120			
Xylene (p/m)	194		"	200		97.0	80-120			
Xylene (o)	97.9		"	100		97.9	80-120			
Surrogate: a,a,a-Trifluorotoluene	*16.7*		*"*	*20.0*		*83.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*17.8*		*"*	*20.0*		*89.0*	*80-120*			

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51807 - EPA 5030C (GC)										
Matrix Spike (EB51807-MS1)	**Source: 5B09008-01**			Prepared: 02/14/05 Analyzed: 02/18/05						
Benzene	93.3		ug/l	100	ND	93.3	80-120			
Toluene	101		"	100	ND	101	80-120			
Ethylbenzene	102		"	100	ND	102	80-120			
Xylene (p/m)	206		"	200	ND	103	80-120			
Xylene (o)	97.3		"	100	ND	97.3	80-120			
Surrogate: a,a,a-Trifluorotoluene	*23.3*		"	*20.0*		*116*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*20.4*		"	*20.0*		*102*	*80-120*			

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General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51004 - General Preparation (WetChem)										
Blank (EB51004-BLK1)				Prepared: 02/09/05 Analyzed: 02/10/05						
Total Dissolved Solids	ND	5.00	mg/L							
Duplicate (EB51004-DUP1)	**Source: 5B09003-01**			Prepared: 02/09/05 Analyzed: 02/10/05						
Total Dissolved Solids	16200	5.00	mg/L		14600			10.4	20	
Batch EB51404 - General Preparation (WetChem)										
Blank (EB51404-BLK1)				Prepared & Analyzed: 02/15/05						
Total Alkalinity	ND	2.00	mg/L							
Duplicate (EB51404-DUP1)	**Source: 5B09003-01**			Prepared & Analyzed: 02/15/05						
Total Alkalinity	395	2.00	mg/L		396			0.253	20	
Reference (EB51404-SRM1)				Prepared & Analyzed: 02/15/05						
Carbonate Alkalinity	0.0510		mg/L	0.0500		102	80-120			
Batch EB51713 - General Preparation (WetChem)										
Blank (EB51713-BLK1)				Prepared & Analyzed: 02/10/05						
Sulfate	ND	0.500	mg/L							
Chloride	ND	0.500	"							
LCS (EB51713-BS1)				Prepared & Analyzed: 02/10/05						
Sulfate	9.66		mg/L	10.0		96.6	80-120			
Chloride	9.56		"	10.0		95.6	80-120			

Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51713 - General Preparation (WetChem)										
LCS Dup (EB51713-BSD1)				Prepared & Analyzed: 02/10/05						
Sulfate	9.64		mg/L	10.0		96.4	80-120	0.207	20	
Chloride	9.51		"	10.0		95.1	80-120	0.524	20	
Calibration Check (EB51713-CCV1)				Prepared & Analyzed: 02/10/05						
Chloride	9.73		mg/L	10.0		97.3	80-120			
Sulfate	9.88		"	10.0		98.8	80-120			
Duplicate (EB51713-DUP1)	**Source: 5B09004-01**			Prepared & Analyzed: 02/10/05						
Chloride	304	10.0	mg/L		304			0.00	20	
Sulfate	357	10.0	"		356			0.281	20	

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

Total Metals by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51702 - 6010B/No Digestion										
Blank (EB51702-BLK1)				Prepared: 02/14/05 Analyzed: 02/16/05						
Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							
Calibration Check (EB51702-CCV1)				Prepared: 02/14/05 Analyzed: 02/16/05						
Calcium	2.22		mg/L	2.00		111	85-115			
Magnesium	2.08		"	2.00		104	85-115			
Potassium	1.75		"	2.00		87.5	85-115			
Sodium	1.94		"	2.00		97.0	85-115			
Duplicate (EB51702-DUP1)	**Source: 5B09003-01**			Prepared: 02/14/05 Analyzed: 02/16/05						
Calcium	905	1.00	mg/L		848			6.50	20	
Magnesium	254	0.100	"		239			6.09	20	
Potassium	88.3	2.50	"		90.7			2.68	20	
Sodium	5810	10.0	"		4840			18.2	20	

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Rice Operating Co.	Project: EME System P-6 Line Leak Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Raland K Tuttle Date: 2/20/2005

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

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Environmental Lab of Texas

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Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Kristin Farris
Company Name Rice Operating Company
Company Address: 122 West Taylor
City/State/Zip: Hobbs, New Mexico 88240
Telephone No: 505-393-9174 **Fax No:** 505-397-1471
Sampler Signature:

Project Name: EME System P-6 Line Leak Site
Project #:
Project Location: T20S, R36E, Sec 6, Unit Letter P
COC #: V117P6-0205

5/8/2008

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO3	HCl (BTEX only)	NaOH	H2SO4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TPH: 418.1 8015M 1005 100	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260 X	RCI	N.O.R.M.	Total Dissolved Solids	RUSH TAT (Pre-Sched)	Standard TAT
01	P6-1	2-7-05	1645	3	✓		✓					✓					✓	✓					✓			✓		✓
02	P6-2	2-7-05	1536	3	✓		✓					✓					✓	✓					✓			✓		✓

Special Instructions: Please email results to both gil@trident-environmental.com and to enviro@leaco.net

Sample Containers Intact? (Y) N
Temperature Upon Receipt: -1.0°C
Laboratory Comments:
1-L HDPE
2-40ml glass w/HCl no ice
Seal on Black Box

Relinquished by:	Date	Time	Received by:	Date	Time
	2/8/05	3:00pm			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
Drop Box	2-9-5	0700	Jeanne McMurrey	2-9-5	0700

Environmental Lab of Texas
Variance / Corrective Action Report – Sample Log-In

Client: Rice Operating Co.

Date/Time: 02-09-05 @ 0700

Order #: 5B09007

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	(Yes)	No	-1.0 C
Shipping container/cooler in good condition?	(Yes)	No	
Custody Seals intact on shipping container/cooler?	(Yes)	No	Not present → on BlackBoy
Custody Seals intact on sample bottles?	Yes	No	(Not present) *
Chain of custody present?	Yes	(No)	→ not in dropbox Client dropped off later
Sample Instructions complete on Chain of Custody?	(Yes)	No	
Chain of Custody signed when relinquished and received?	(Yes)	No	
Chain of custody agrees with sample label(s)	(Yes)	No	
Container labels legible and intact?	(Yes)	No	
Sample Matrix and properties same as on chain of custody?	(Yes)	No	
Samples in proper container/bottle?	(Yes)	No	
Samples properly preserved?	(Yes)	No	
Sample bottles intact?	(Yes)	No	
Preservations documented on Chain of Custody?	(Yes)	No	
Containers documented on Chain of Custody?	(Yes)	No	
Sufficient sample amount for indicated test?	(Yes)	No	
All samples received within sufficient hold time?	(Yes)	No	
VOC samples have zero headspace?	(Yes)	No	Not Applicable

Other observations: * No Seal on L-HDPE
Seals on 40mL glass w/HCl
JMM 03-11-05

Variance Documentation:

Contact Person: Gil VanDeventer Date/Time: 02-09-05 @ 0800 Contacted by: Jeanne McMurry

Regarding:

missing COC

Corrective Action Taken:

Client will bring COC by later this morning

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Kristin Farris

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: EME System M-5 SWD Site

Project Number: None Given

Location: T2OS, R36E, Sec 5, Unit Letter M

Lab Order Number: 5B09007

Report Date: 02/20/05

Rice Operating Co.	Project: EME System M-5 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
M5-1	5B09007-01	Water	02/08/05 09:40	02/09/05 07:00

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Rice Operating Co.	Project: EME System M-5 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
M5-1 (5B09007-01) Water									
Benzene	ND	0.00100	mg/L	1	EB51807	02/14/05	02/15/05	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*110 %*		*80-120*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.5 %*		*80-120*	"	"	"	"	

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Rice Operating Co.	Project: EME System M-5 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
M5-1 (5B09007-01) Water									
Total Alkalinity	**238**	2.00	mg/L	1	EB51404	02/15/05	02/15/05	EPA 310.2M	
Chloride	**6710**	500	"	1000	EB51713	02/10/05	02/10/05	EPA 300.0	
Total Dissolved Solids	**13200**	5.00	"	1	EB51004	02/09/05	02/10/05	EPA 160.1	
Sulfate	**1450**	500	"	1000	EB51713	02/10/05	02/10/05	EPA 300.0	

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Rice Operating Co.	Project: EME System M-5 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

Total Metals by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
M5-1 (5B09007-01) Water									
Calcium	**1800**	10.0	mg/L	1000	EB51702	02/14/05	02/16/05	EPA 6010B	
Magnesium	**431**	0.100	"	100	"	"	"	"	
Potassium	**40.4**	0.500	"	10	"	"	"	"	
Sodium	**2420**	10.0	"	1000	"	"	"	"	

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Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51807 - EPA 5030C (GC)										
Blank (EB51807-BLK1)				Prepared & Analyzed: 02/14/05						
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	*16.5*		*ug/l*	*20.0*		*82.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*17.4*		"	*20.0*		*87.0*	*80-120*			
LCS (EB51807-BS1)				Prepared & Analyzed: 02/14/05						
Benzene	105		ug/l	100		105	80-120			
Toluene	105		"	100		105	80-120			
Ethylbenzene	95.9		"	100		95.9	80-120			
Xylene (p/m)	196		"	200		98.0	80-120			
Xylene (o)	95.7		"	100		95.7	80-120			
Surrogate: a,a,a-Trifluorotoluene	*16.5*		"	*20.0*		*82.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*16.8*		"	*20.0*		*84.0*	*80-120*			
LCS Dup (EB51807-BSD1)				Prepared & Analyzed: 02/14/05						
Benzene	113		ug/l	100		113	80-120	7.34	20	
Toluene	112		"	100		112	80-120	6.45	20	
Ethylbenzene	107		"	100		107	80-120	10.9	20	
Xylene (p/m)	224		"	200		112	80-120	13.3	20	
Xylene (o)	111		"	100		111	80-120	14.8	20	
Surrogate: a,a,a-Trifluorotoluene	*18.6*		"	*20.0*		*93.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*20.2*		"	*20.0*		*101*	*80-120*			
Calibration Check (EB51807-CCV1)				Prepared: 02/14/05 Analyzed: 02/16/05						
Benzene	97.5		ug/l	100		97.5	80-120			
Toluene	104		"	100		104	80-120			
Ethylbenzene	93.1		"	100		93.1	80-120			
Xylene (p/m)	194		"	200		97.0	80-120			
Xylene (o)	97.9		"	100		97.9	80-120			
Surrogate: a,a,a-Trifluorotoluene	*16.7*		"	*20.0*		*83.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*17.8*		"	*20.0*		*89.0*	*80-120*			

Rice Operating Co.	Project: EME System M-5 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

Organics by GC - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51807 - EPA 5030C (GC)										
Matrix Spike (EB51807-MS1)	**Source: 5B09008-01**			Prepared: 02/14/05 Analyzed: 02/18/05						
Benzene	93.3		ug/l	100	ND	93.3	80-120			
Toluene	101		"	100	ND	101	80-120			
Ethylbenzene	102		"	100	ND	102	80-120			
Xylene (p/m)	206		"	200	ND	103	80-120			
Xylene (o)	97.3		"	100	ND	97.3	80-120			
Surrogate: a,a,a-Trifluorotoluene	*23.3*		"	*20.0*		*116*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*20.4*		"	*20.0*		*102*	*80-120*			

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Rice Operating Co.	Project: EME System M-5 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51004 - General Preparation (WetChem)										
Blank (EB51004-BLK1)				Prepared: 02/09/05 Analyzed: 02/10/05						
Total Dissolved Solids	ND	5.00	mg/L							
Duplicate (EB51004-DUP1)	**Source: 5B09003-01**			Prepared: 02/09/05 Analyzed: 02/10/05						
Total Dissolved Solids	16200	5.00	mg/L		14600			10.4	20	
Batch EB51404 - General Preparation (WetChem)										
Blank (EB51404-BLK1)				Prepared & Analyzed: 02/15/05						
Total Alkalinity	ND	2.00	mg/L							
Duplicate (EB51404-DUP1)	**Source: 5B09003-01**			Prepared & Analyzed: 02/15/05						
Total Alkalinity	395	2.00	mg/L		396			0.253	20	
Reference (EB51404-SRM1)				Prepared & Analyzed: 02/15/05						
Carbonate Alkalinity	0.0510		mg/L	0.0500		102	80-120			
Batch EB51713 - General Preparation (WetChem)										
Blank (EB51713-BLK1)				Prepared & Analyzed: 02/10/05						
Sulfate	ND	0.500	mg/L							
Chloride	ND	0.500	"							
LCS (EB51713-BS1)				Prepared & Analyzed: 02/10/05						
Sulfate	9.66		mg/L	10.0		96.6	80-120			
Chloride	9.56		"	10.0		95.6	80-120			

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Rice Operating Co.	Project: EME System M-5 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51713 - General Preparation (WetChem)										
LCS Dup (EB51713-BSD1)				Prepared & Analyzed: 02/10/05						
Sulfate	9.64		mg/L	10.0		96.4	80-120	0.207	20	
Chloride	9.51		"	10.0		95.1	80-120	0.524	20	
Calibration Check (EB51713-CCV1)				Prepared & Analyzed: 02/10/05						
Chloride	9.73		mg/L	10.0		97.3	80-120			
Sulfate	9.88		"	10.0		98.8	80-120			
Duplicate (EB51713-DUP1)	**Source: 5B09004-01**			Prepared & Analyzed: 02/10/05						
Chloride	304	10.0	mg/L		304			0.00	20	
Sulfate	357	10.0	"		356			0.281	20	

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Rice Operating Co.	Project: EME System M-5 SWD Site	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	**Reported:**
Hobbs NM, 88240	Project Manager: Kristin Farris	02/20/05 14:23

Total Metals by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51702 - 6010B/No Digestion										
Blank (EB51702-BLK1)				Prepared: 02/14/05 Analyzed: 02/16/05						
Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							
Calibration Check (EB51702-CCV1)				Prepared: 02/14/05 Analyzed: 02/16/05						
Calcium	2.22		mg/L	2.00		111	85-115			
Magnesium	2.08		"	2.00		104	85-115			
Potassium	1.75		"	2.00		87.5	85-115			
Sodium	1.94		"	2.00		97.0	85-115			
Duplicate (EB51702-DUP1)	**Source: 5B09003-01**			Prepared: 02/14/05 Analyzed: 02/16/05						
Calcium	905	1.00	mg/L		848			6.50	20	
Magnesium	254	0.100	"		239			6.09	20	
Potassium	88.3	2.50	"		90.7			2.68	20	
Sodium	5810	10.0	"		4840			18.2	20	

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Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Raland K Tuttle Date: 2/20/2005

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
James L. Hawkins, Chemist/Geologist
Sandra Sanchez, Lab Tech.

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Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Kristin Farris
Company Name Rice Operating Company
Company Address: 122 West Taylor
City/State/Zip: Hobbs, New Mexico 88240
Telephone No: 505-397-9174 **Fax No:** 505-397-1471
Sampler Signature:

Project Name: EME System M-S SWD Site
Project #:
Project Location: T20S, R36E, Sec 5, Unit Letter M
COC #: V117M5-0205

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl (BTEX only)	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: TCLP: TPH: 418.1 8015M 1005 100	Analyze For: TOTAL: Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Total Dissolved Solids		RUSH TAT (Pre-Sched)	Standard TAT
01	MS-1	2-8-05	0940	3	✓		✓					✓					✓	✓					✓			✓			✓

Special Instructions: Please email results to both gil@trident-environmental.com and to enviro@leaco.net

Sample Containers Intact? Y N
Temperature Upon Receipt: -1.0°C
Laboratory Comments:
1- L HDPE
2- 40ml glass w/HCl
Seal on Black Box

Relinquished by:	Date	Time	Received by:	Date	Time
	2/8/05	8:00 pm			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
Drop Box	2-9-5	0700	Jaime McMurry	2-9-5	0700

Environmental Lab of Texas
Variance / Corrective Action Report – Sample Log-In

Client: Rice Operating Co.

Date/Time: 02-09-05 @ 0700

Order #: 5B09008

Initials: JMM

Sample Receipt Checklist

Temperature of container/cooler?	(Yes)	No	-1.0 C
Shipping container/cooler in good condition?	(Yes)	No	
Custody Seals intact on shipping container/cooler?	(Yes)	No	Not present → on Black Box
Custody Seals intact on sample bottles?	Yes	No	(Not present) *
Chain of custody present?	Yes	(No)	→ not in dropbox Client dropped off later
Sample Instructions complete on Chain of Custody?	(Yes)	No	
Chain of Custody signed when relinquished and received?	(Yes)	No	
Chain of custody agrees with sample label(s)	(Yes)	No	
Container labels legible and intact?	(Yes)	No	
Sample Matrix and properties same as on chain of custody?	(Yes)	No	
Samples in proper container/bottle?	(Yes)	No	
Samples properly preserved?	(Yes)	No	
Sample bottles intact?	(Yes)	No	
Preservations documented on Chain of Custody?	(Yes)	No	
Containers documented on Chain of Custody?	(Yes)	No	
Sufficient sample amount for indicated test?	(Yes)	No	
All samples received within sufficient hold time?	(Yes)	No	
VOC samples have zero headspace?	(Yes)	No	Not Applicable

Other observations: * No Seal on L-HDPE
Seals on 40mL glass w/HCl
JMM 03-11-05

Variance Documentation:

Contact Person: - Gil VanDeventer Date/Time: 02-09-05 @ 0800 Contacted by: Jeanne McMurry

Regarding:

missing COC

Corrective Action Taken:

Client will bring COC by later this morning

QUALITY PROCEDURES

Rice Operating Company

Quality Procedure

Procedure for Obtaining
Soil Samples for Transportation to a Laboratory

1.0 Purpose

This procedure outlines the methods to be employed when obtaining soil samples to be taken to a laboratory for analysis.

2.0 Scope

This procedure is to be used when collecting soil samples intended for ultimate transfer to a testing laboratory.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the soil. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 If collecting TPH, BTEX, RCRA 8 metals, cation /anions or O&G, the sample jar may be a clear 4 oz. container with Teflon lid. If collecting PAH's, use an amber 4 oz. container.

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the number, location and designation of each planned sample and the individual tests to be performed on the sample. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label.) Affix the labels to the jars.

5.0 Sampling Procedure

5.1. Do not touch the soil with your bare hands. Use new latex gloves with each sample to help minimize any cross-contamination.

5.2. Go to the sampling point with the sample container. If not analyzing for ions or metals, use a trowel to obtain the soil.

5.3. Pack the soil tightly into the container leaving the top slightly domed. Screw the lid down tightly. Enter the time of collection onto the sample collection jar label.

5.4. Place the sample directly on ice for transport to the laboratory if required.

5.5. Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

6.0 Documentation

6.1 The testing laboratory shall provide the following minimum information:

a. Project and sample name.
b. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
c. Results of the requested analyses
d. Test Methods employed
e. Quality Control methods and results

Rice Operating Company

QUALITY PROCEDURE

Sampling and Testing Protocol
Chloride Titration Using .282 Normal
Silver Nitrate Solution

1.0 Purpose

This procedure is to be used to determine the concentration of chloride in soil.

2.0 Scope

This procedure is to be used as the standard field measurement for soil chloride concentrations.

3.0 Sample Collection and Preparation

3.1 Collect at least 80 grams of soil from the sample collection point. Take care to insure that the sample is representative of the general background to include visible concentrations of hydrocarbons and soil types. If necessary, prepare a composite sample for soils obtained at several points in the sample area. Take care to insure that no loose vegetation, rocks or liquids are included in the sample(s).

3.2 The soil sample(s) shall be immediately inserted into a one-quart or larger polyethylene freezer bag. Care should be taken to insure that no cross-contamination occurs between the soil sample and the collection tools or sample processing equipment.

3.3 The sealed sample bag should be massaged to break up any clods.

4.0 Sample Preparation

4.1 Tare a clean glass vial having a minimum 40 ml capacity. Add at least 10 grams of the soil sample and record the weight.

4.2 Add at least 10 grams of reverse osmosis water to the soil sample and shake for 20 seconds.

4.3 Allow the sample to set for a period of 5 minutes or until the separation of soil and water.

4.4 Carefully pour the free liquid extract from the sample through a paper filter into a clean plastic cup if necessary.

5.0 Titration Procedure

5.1 Using a graduated pipette, remove 10 ml extract and dispense into a clean plastic cup.

5.2 Add 2-3 drops potassium chromate (K_2CrO_4) to mixture.

5.3 If the sample contains any sulfides (hydrogen or iron sulfides are common to oilfield soil samples) add 2-3 drops of hydrogen peroxide (H_2O_2) to mixture.

5.4 Using a 1 ml pipette, carefully add .282 normal silver nitrate (one drop at a time) to the sample while constantly agitating it. Stop adding silver nitrate when the solution begins to change from yellow to red. Be consistent with endpoint recognition.

5.5 Record the ml of silver nitrate used.

6.0 Calculation

To obtain the chloride concentration, insert measured data into the following formula:

$$\frac{.282 \times 35.450 \times \text{ml } AgNO_3}{\text{ml water extract}} \times \frac{\text{grams of water in mixture}}{\text{grams of soil in mixture}}$$

Using Step 5.0, determine the chloride concentration of the RO water used to mix with the soil sample. Record this concentration and subtract it from the formula results to find the net chloride in the soil sample.

Record all results on the delineation form.

Rice Operating Company

Quality Procedure
Development of Cased Water-Monitoring Wells

1.0 Purpose

This procedure outlines the methods to be employed to develop cased monitoring wells.

2.0 Scope

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

3.0 Sample Collection and Preparation

3.1 Prior to development, the static water level and height of the water column within the well casing will be measured with the use of an electric D.C. probe or a steel engineer's tape and water sensitive paste.

3.2 All measurements will be recorded within a field log notebook.

3.3 All equipment used to measure the static water level will be decontaminated after each use by means of Liquinox, a phosphate free laboratory detergent, and water to reduce the possibility of cross-contamination. The volume of water in each well casing will be calculated.

4.0 Purging

4.1 Wells will be purged by using a 2" decontaminated submersible pump or dedicated one liter Teflon bailer. Wells should be purged until the pH and conductivity are stabilized and the turbidity has been reduced to the greatest extent possible.

4.2 If a submersible is used the pump will be decontaminated prior to use by scrubbing the outside surface of tubing and wiring with a Liquinox water mixture, pumping a Liquinox-water mixture through the pump, and a final flush with fresh water.

5.0 Water Disposal

5.1 All purge and decontamination water will be temporarily stored within a portable tank to be later disposed of in an appropriate manner.

6.0 Records

6.1 Rice Operating Company will record the amount of water removed from the well during development procedures. The purge volume will be reported to the appropriate regulatory authority when filing the closure report.

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the well identification and the individual tests to be performed at that location. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label). Affix the labels to the jars.

5.0 Bailing Procedure

5.1 Identify the well from the sites schematics. Place pre-labeled jar(s) next to the well. Remove the plastic cap from the well bore by first lifting the metal lever and then unscrewing the entire assembly.

5.2 Using a dedicated one liter Teflon bailer, purge a minimum of three well volumes. Place the water in storage container for transport to a ROC disposal facility.

5.3 Take care to insure that the bailing device and string do not become cross-contaminated. A clean pair of rubber gloves should be used when handling either the retrieval string or bailer. The retrieval string should not be allowed to come into contact with the ground.

6.0 Sampling Procedure

6.1 Once the well has been bailed in accordance with 5.2 of this procedure, a sample may be decanted into the appropriate sample collection jar directly from the bailer. The collection jar should be filled to the brim. Once the jar is sealed, turn the jar over to detect any bubbles that may be present. Add additional water to remove all bubbles from the sample container.

6.2 Note the time of collection on the sample jar with a fine Sharpie.

6.3 Place the sample directly on ice for transport to the laboratory. The preceding table shows the maximum hold times between collection and testing for the various analyses.

6.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

7.0 Documentation

7.1 The testing laboratory shall provide the following minimum information:

A. Project and sample name.
B. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
C. Results of the requested analyses
D. Test Methods employed
E. Quality Control methods and results

Calculation for Determining the Minimum Bailing Volume for Monitor Wells
Formula $V = (\pi r^2 h)$
2" well [V/231=gal] X 3 = Purge Volume

V=Volume
π=pi
r=inside radius of the well bore
h=maximum height of well bore in water table

Example:

π	r^2	h(in)	V(cu.in)	V(gal)	X 3 Volumes	Actual
3.1416	1	180	565.488	2.448	7.34 gal	>10 gal

Rice Operating Company

QUALITY PROCEDURE
Sampling and Testing Protocol for VOC in Soil

1.0 Purpose

This procedure is to be used to determine the concentrations of Volatile Organic Compounds in soils.

2.0 Scope

This procedure is to be used as the standard field measurement for soil VOC concentrations. It is not to be used as a substitute for full spectrographic speciation of organic compounds.

3.0 Procedure

3.1 Sample Collection and Preparation

3.1.1 Collect at least 500 g. of soil from the sample collection point. Take care to insure that the sample is representative of the general background to include visible concentrations of hydrocarbons and soil types. If necessary, prepare a composite sample of soils obtained at several points in the sample area. Take care to insure that no loose vegetation, rocks or liquids are included in the sample(s).

3.1.2 The soil sample(s) shall be immediately inserted into a one-quart or larger polyethylene freezer bag and sealed. When sealed, the bag should contain a nearly equal space between the soil sample and trapped air. Record the sample name and the time that the sample was collected on the Field Analytical Report Form.

3.1.3 The sealed samples shall be allowed to set for a minimum of five minutes at a temperature of between 10-15 Celsius, (59-77 ^{0}F). The sample temperatures may be adjusted by cooling the sample in ice, or by heating the sample within a generally controlled environment such as the inside of a vehicle. The samples should not be placed directly on heated surfaces or placed in direct heat sources such as lamps or heater vents.

3.1.4 The sealed sample bag should be massaged to break up any clods, and to provide the soil sample with as much exposed surface area as practically possible.

3.2 Sampling Procedure

3.2.1 The instrument to be used in conducting VOC concentration testing shall be an Environmental Instruments 13471 OVM / Datalogger or a similar PID-type instrument. (Device will be identified on VOC Field Test Report Form.) Prior to use, the instrument shall be zeroed-out in accordance with the appropriate maintenance and calibration procedure outlined in the instrument operation manual. The PID device will be calibrated each day it's used.

3.2.2 Carefully open one end of the collection bag and insert the probe tip into the bag taking care that the probe tip not touch the soil sample or the sidewalls of the bag.

3.2.3 Set the instrument to retain the highest result reading value. Record the reading onto the Field Test Report Form.

3.2.4 If the instrument provides a reading exceeding 100 ppm, proceed to conduct BTEX Speciation in accordance with **QP-02 and QP-06. If the reading is 100 ppm or less, NMOCD BTEX guideline has been met and no further testing for BTEX is necessary. File the Field Test Report Form in the project file.**

4.0 Clean-up

After testing, the soil samples shall be returned to the sampling location, and the bags collected for off-site disposal. **IN NO CASE SHALL THE SAME BAG BE USED TWICE. EACH SAMPLE CONTAINER MUST BE DISCARDED AFTER EACH USE.**