AP - 42

AMENDED

STAGE 1 & 2 WORKPLANS

DATE: 8-25-08

Hansen, Edward J., EMNRD

From: Hack Conder [hconder@riceswd.com]
Sent: Tuesday, May 12, 2009 12:21 PM
To: Hansen, Edward J., EMNRD
Cc: 'Katie Jones'; 'Hall, Sharon'
Subject: RE: EME M16-1 AP 42

Hack Conder
Enviromental Manager
Rice Operating Company
575-393-9174
fax 575-397-1471

From: Hack Conder [mailto:hconder@riceswd.com]
Sent: Tuesday, May 12, 2009 12:08 PM
To: 'Hansen, Edward J., EMNRD'
Cc: 'Katie Jones'
Subject: EME M16-1 AP 42

Ed,

I am requesting an addendum to AP42 section 7.3 I would like to ad the following sentence to the last paragraph in this section

Total volume and chloride content of the recovered groundwater will be measured prior to being utilized in pipeline maintenance operations.

Thanks

Hack Conder
Enviromental Manager
Rice Operating Company
575-393-9174
fax 575-397-1471

Hansen, Edward J., EMNRD

From: Hall, Sharon [Sharon.Hall@arcadis-us.com]
Sent: Thursday, March 05, 2009 7:07 AM
To: Jones, Brad A., EMNRD
Cc: Hansen, Edward J., EMNRD; Hack Conder
Subject: NMOCD case # AP-42 ROC Response
Attachments: 03-04-09 response letter.pdf

Brad,
Respectfully submitted on behalf of ROC is this response to your meeting discussions with ROC. Please let Hack or me know if you have any questions or need additional information.
Regards,
Sharon

Sharon E. Hall PG, REM
Associate Vice President
ARCADIS G&M Inc
1004 N. Big Spring Street, Suite 300
Midland, Texas 79701
ph: 432 687-5400
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ARCADIS

Infrastructure, environment, buildings

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Environmental

Sent Certified Mail
Return Receipt No. 7002 2410 0001 5813 0172

Mr. Brad Jones
New Mexico Energy, Minerals, & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Subject:

Response to NMOCD Request
Jct. M-16-1, EME SWD SYSTEM
Unit M, SEC. 16, T20S, R37E
NMOCD CASE # AP-42

Date:
March 4, 2009

Contact:
Sharon E. Hall

Phone:
432 687-5400

Email:
shall@arcadis-us.com

Our ref:
MT000834.0001

Dear Mr. Jones:

On behalf of Rice Operating Company (ROC), ARCADIS G&M, Inc. (ARCADIS) respectfully submits this response to your request to ROC in the meeting on February 24, 2008 regarding this site. NMOCD requested further information regarding the likelihood of impacts to groundwater resulting from vadose zone conditions.

The highest chloride concentration detected in investigation trench soil samples was 875 mg/kg and averaged 313 mg/kg. Chloride concentrations represent field tested chloride concentrations. It has been documented at other ROC sites that duplicate soil samples submitted for laboratory analysis have resulted in a laboratory concentration less than that measured in the field. This suggests that the field measured chloride concentrations may be conservatively higher than actual concentrations. Based on the trench investigations, vadose zone conditions should not contribute to elevated chloride concentrations at the site. Additionally, ROC's Stage 2 Abatement Plan Proposal provided a chloride mass calculation and proposed removal of the calculated chloride mass.

ROC is the service provider (agent) for the BD Salt Water Disposal System and has no ownership of any portion of pipeline, well or facility. The BD SWD System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis.

Thank you for your consideration concerning this additional information regarding vadose zone conditions. Your approval of the Stage 2 Abatement Plan Proposal will be appreciated. If you have any questions, do not hesitate to contact me.

Sincerely,
ARCADIS G&M, Inc.

Sharon E. Hall

Sharon E. Hall
Associate Vice President

Copies:
Ed Hansen, NMOCD
Hack Conder, ROC
Marvin Burrows, ROC

ARCADIS

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Imagine the result

Eunice Monument Eumont (EME) Saltwater Disposal System Jct. M-16-1

NMOCD AP-42

Stage 1 Abatement Plan Report and Stage 2 Abatement Plan Proposal

Rice Operating Company

Hobbs, New Mexico

ARCADIS

Infrastructure, buildings, environment, communications

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Ed Hansen
New Mexico Oil Conservation Division
1220 So. Saint Francis Drive
Santa Fe, New Mexico 87505

Certified Mail Receipt No. 7002 2410 0001 5812 9978

Subject:
Stage 1 Abatement Plan Report and Stage 2 Abatement Plans
Eunice Monument Eumont (EME) M-16-1 and A-20
NMOCD Case # AP-42 and AP-43

Date:
August 25, 2008

Contact:
Sharon Hall

Phone:
432 687-5400

Email:
shall@arcadis-us.com

Dear Mr. Hansen,

Respectfully submitted on behalf of Rice Operating Company are the above-referenced Stage 1 Abatement Plan Reports and Stage 2 Abatement Plan Proposals. Please let Hack or I know if you have any questions or need additional information.

Very Truly Yours,

ARCADIS U.S, Inc.

Sharon E. Hall

Sharon E. Hall
Associate Vice President

Copies:
Hack Conder- Rice Operating Company

Attachment:
EME M-16-1 Stage 1 Abatement Plan Report and Stage 2 Abatement Plan Proposal with CD
EME A-20 Stage 1 Abatement Plan Report and Stage 2 Abatement Plan Proposal with CD

ARCADIS

Sharon E. Hall
Associate Vice President

EME Jct. M-16-1
Stage 1 Abatement Plan
Report and Stage 2
Abatement Plan Proposal
Rice Operating Company
Hobbs, New Mexico

Prepared for:
Rice Operating Company

Prepared by:
ARCADIS
1004 N. Big Spring Street
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Midland,
Texas 79701
Tel 432.687.5400
Fax 432.687.5401

Our Ref.:
MT000856.0001.00001

Date:
August 25, 2008

Table of Contents

Figures

Tables

Appendices

1. Executive Summary

The subject site is a junction box on the EME Salt Water Disposal System operated by Rice Operating Company (ROC). The site is located in Section 16, Township 20 south, Range 37 east, Lea County, New Mexico, near the town of Monument/Oil Center (Figure 1). The disposal system transports produced water from oil and gas leases to a permitted well for disposal by subsurface injection.

Identification of soil impacts occurred during line replacement being performed as part of the approved Junction Box Upgrade Program. Soil investigation at Jct. M-16-1 was initiated in December 2001 with a back hoe by trenching to 12 feet below ground surface (bgs) in five locations. To further delineate depth of impact, a soil boring was completed to a depth of 35 feet bgs at the junction box location. Soil samples were analyzed in the field for chlorides using field-adapted Method 9253. The soil boring samples were additionally analyzed in the field for total petroleum hydrocarbons (TPH) using field-adapted Method 9253.

On January 9, 2002, a monitor well (MW-1) was installed southwest of Jct. M-16-1 (Figure 2). A water level was recorded at 22.60 feet below measuring point. The monitor well has been sampled quarterly since installation. Four additional monitor wells have been installed at the site; MW-2 and MW-3 were installed on February 28, 2006, and MW-4 and MW-5 were installed on June 1, 2006.

A Stage 1 Abatement Plan proposal was submitted on June 02, 2005 and following approval by the New Mexico Oil Conservation Division (NMOCD) a Public Notice was submitted on November 28, 2005.

Soil impacts at the site include chlorides and hydrocarbons. Groundwater samples exhibit elevated chloride concentrations consistent with regional impacts. This Stage 1 Report and Stage 2 Abatement Plan proposes restoration of the site with native soils and seeding.

2. Chronology of Events

- Initial delineation began on December 11, 2001 and was performed as part of the Junction Box Upgrade Program;
- A soil boring was installed on December 20, 2001 to a depth of 35 feet bgs for TPH and chlorides;

- On January 9, 2002, a monitor well (MW-1) was installed southwest of the Jct. M-16-1. A groundwater sample was submitted for laboratory analysis for benzene, toluene, ethylbenzene and xylenes (BTEX) and chlorides;

- ROC notified the New Mexico Oil Conservation Division (NMOCD) of groundwater impacts on January 18, 2002. The monitor well has been sampled quarterly since installation, and a Monitor Well Report has been submitted annually. The most recent report was submitted on January 12, 2006.

- An Investigation & Characterization Plan was submitted to the NMOCD on March 21, 2005. On May 05, 2005, Mr. Daniel Sanchez of the NMOCD wrote a letter to ROC indicating that several sites, including Jct. M-16-1, required abatement plans pursuant to NMOCD Rule 19.

- A Stage 1 Abatement Plan proposal was submitted on June 02, 2005 and following approval by the New Mexico Oil Conservation Division (NMOCD) Public Notice was submitted on November 28, 2005.

- The Stage 1 Abatement Plan proposal was approved by NMOCD on February 21, 2006.

- On January 30, 2007, a Stage 1 Abatement Plan Report and Stage 2 Abatement Plan was submitted to NMOCD; and

- On July 1, 2008, the Stage 1 Abatement Plan Report and Stage 2 Abatement Plan was conditionally deemed administratively complete with recommendations for an amendment to the plan to include an estimation of chloride mass related to the release at the site and a plan for removal of that mass.

3. Background

Identification of soil impacts occurred during line replacement being performed as part of the approved Junction Box Upgrade Program. A soil boring and monitor well have been installed at the site, and the monitor well has been sampled quarterly since installation on January 9, 2002. The latest annual Monitor Well Report was submitted to the NMOCD on January 12, 2006. An Investigation and Characterization Plan was submitted to the NMOCD on March 23, 2005. On May 5, 2005, the NMOCD requested that ROC submit an abatement plan to the NMOCD pursuant to Rule 19. The Stage 1 Abatement Plan was submitted to NMOCD on June 6, 2005 and

approved as administratively complete on November 18, 2005. Public Notice was submitted to the NMOCD on November 28, 2005 and published in the *Albuquerque Journal* and *Hobbs News Sun* on December 9, 2005.

The Stage 1 Abatement Plan Proposal proposed site soil and groundwater investigation activities including: performing a one-mile water well inventory; further delineation of the vertical and lateral extent of soil impact; and investigation of groundwater impacts. Stage 1 activities were performed in February, June and July 2006 following the public comment period and receipt of NMOCD final approval of the Stage 1 Abatement Plan Proposal.

On January 30, 2007, a Stage 1 Abatement Plan Report and Stage 2 Abatement Plan was submitted to NMOCD. On July 1, 2008 the Stage 1 Abatement Plan Report and Stage 2 Abatement Plan was conditionally deemed administratively complete with recommendations for an amendment to the plan to include an estimation of chloride mass related to the release at the site and a plan for removal of that mass.

4. Geology and Hydrogeology

4.1 Regional and Local Geology

The subject site lies in southern Lea County in the Pecos valley section of the Great Plains physiographic province. The site lies within the Eunice Plain, which is bounded by the South Plain to the south, the Rattlesnake Ridge to the east, the High Plains to the northeast, the Laguna Valley and Gramma Ridge Area to the northwest, the San Simon Ridge and San Simon Sale to the west and the Antelope Ridge Area to the southwest. An estimated 80% of southern Lea County is covered by sand. Shin oak, bear grass and burr grass dominate the areas of sand cover. Elsewhere, the vegetation is grama grass, burr grass and mesquite.

Monument Draw is the only major surface drainage feature in southern Lea County. The draw runs north and south slightly over two miles east of the M-16-1 junction box. Generally, the topography in the area of the site slopes gently to Monument Draw at an approximate dip of 35 feet per mile.

4.2 Regional and Local Hydrogeology

The Ogallala Formation is the principal source of groundwater in the subject area. Depth to groundwater in Lea County ranges from approximately 12 to approximately

300 feet bgs. The Ogallala consists of predominantly coarse fluvial conglomerate and sandstone and fine-grained Eolian siltstone and clay. Where present in the subject area, the Ogallala unconformably overlies Triassic redbeds. The regional groundwater gradient is to the east/southeast. The local groundwater gradient is very flat and to the southwest. Depth to groundwater at the subject site is approximately 23 feet bgs. Subsurface geology in the subject area consists of approximately 15 to 20 feet of loose, fine-grained, calcareous sand underlain by caliche to a depth of approximately 20 to 25 feet bgs. The caliche is underlain by fine-grained sand. The boring lithology log is included in Appendix A.

5. Subsurface Soils

Soil delineation field activities were conducted in December 2001. Initial delineation was begun by ROC as part of the Junction Box Upgrade Program. Investigation activities were conducted with a backhoe by trenching to 12 feet bgs in five locations. To further delineate depth of impact, a soil boring at the junction to 35 feet was completed. Soil samples were analyzed in the field for chlorides using field-adapted Method 9253. Field chloride concentrations are shown in Table 1 and Figure 3. The presence of hydrocarbons was noted in field observations.

6. Groundwater Quality

On January 9, 2002, a monitor well (MW-1) was installed southwest of Jct. M-16-1 (Figure 2). The water level was recorded at 22.60 feet below measuring point. Monitor well MW-1 has been sampled quarterly since installation.

In accordance with the Stage 1 Abatement Plan, monitor wells MW-2 and MW-3 were installed southeast and southwest of Jct. M-16-1 (Figure 2) on February 28, 2006 and March 1, 2006, respectively. Monitor wells MW-4 and MW-5 were installed June 1, 2006 south and north of Jct. M-16-1 (Figure 2), respectively. Static water levels were recorded for the existing monitor well, MW-1, and the new monitor wells MW-2, MW-3, MW-4 and MW-5. Monitor well logs are included in Appendix B. The measurements are presented in Table 2.

Monitor well MW-1, installed in January 2002, has been monitored quarterly since its installation. Analysis of groundwater includes BTEX using USEPA Method 8021B and inorganic compounds (total alkalinity, chloride, total dissolved solids, sulfate, calcium, magnesium, sodium and potassium) using EPA Methods 310, 300, 160.1 and 6010B. Analytical results for the quarterly groundwater monitoring have been

submitted annually to the NMOCD. The historical results for MW-1 are presented in Table 2.

Concentrations of inorganic compounds including chlorides, TDS, sulfate and sodium are elevated in the groundwater samples collected from monitor well MW-1. Wells intended as background monitor wells (MW-2 and MW-5) and downgradient monitor wells (MW-3 and MW-4) also contain elevated concentrations of these compounds.

Analysis of groundwater from monitor wells MW-2, MW-3, MW-4 and MW-5 included BTEX, using USEPA Method 8021B and inorganic compounds (total alkalinity, chloride, total dissolved solids, sulfate, calcium, magnesium, sodium and potassium), using EPA Methods 310, 300, 160.1 and 6010B. Monitor wells MW-2 and MW-3 were sampled in March, May, July and October 2006. Monitor wells MW-4 and MW-5 were sampled in June, July and October 2006. The analytical results for all of the monitor wells are presented in Table 2.

6.1 Hydrocarbons in Groundwater

No free-phase hydrocarbons have been detected in groundwater. In only one sampling event, November 24, 2004, have hydrocarbons been detected in groundwater in MW-1. Toluene, ethylbenzene and xylenes were detected at concentrations well below the New Mexico drinking water standards. These compounds were not detected in the 2006 sampling events in samples collected from any of the monitor wells.

7. Stage 2 Abatement Plan

7.1 Remediation of Soil

The highest chloride concentration detected in soil samples was 875 mg/kg at the location 15 feet south of the valve at a depth of 12 feet below ground surface (bgs). The presence of hydrocarbons was noted in field observations. Hydrocarbons (BTEX) were not detected in any of the samples collected from the monitor wells. A soil sample was collected from the boring at a depth of 25 feet bgs and gasoline range organic (GRO) and diesel range organic (DRO) concentrations were less than 50 mg/kg. It appears that soil impacts resulting from the junction box have been removed by excavation of soils.

Soil that will support re-vegetation will be placed above the backfilled excavations. The area will be evaluated for fertilizer or soil amendment requirements and reseeded

with native vegetation. Areas that are not currently supporting vegetation will be ripped and blended with topsoil and reseeded with native grasses. Areas supporting vegetation will not be disturbed.

7.2 Groundwater

Groundwater in the area has been reported as regionally impacted with chlorides and unusable as early as 1952 (Groundwater Report 6). No water wells were identified in Township 20, Section 37 in the USGS and state databases. This site did not significantly contribute to the degradation of groundwater quality.

No further action regarding chloride impacted groundwater was proposed for this site in the Stage 1 Abatement Plan Report and Stage 2 Abatement Plan submitted on January 30, 2007.

As requested by the NMOCD in their conditional approval as administratively complete of the Stage 1 Abatement Plan Report and Stage 2 Abatement Plan submitted on January 30, 2007, the following revisions are made to the Stage 2 Abatement Plan:

This Stage 2 Abatement Plan is revised to include an estimation of the chloride mass that may have impacted groundwater as a results of the release from junction box and a plan for the removal of that mass.

7.3 Chloride Mass Calculation and Chloride Mass Removal Work Plan

Calculations used to estimate the chloride mass in groundwater that may have resulted from releases from the former junction box is detailed in the table below. The size of the impacted area is conservatively assumed to be the combined width and length of the excavation multiplied by a factor of 10 (the estimated horizontal dispersivity factor). This total area is then multiplied by the thickness of the aquifer (15 feet) and the estimated porosity (25%) resulting in a total saturated pore space volume.

The increase in chloride concentrations in groundwater is calculated by subtracting the lowest chloride concentration at the site (MW-3, 2,650 mg/L) from the highest measured chloride concentration identified at the site (MW-1, 1,800 mg/L). This net difference in chloride concentrations conservatively reflects the net impact to groundwater at the site resulting from releases from the junction boxes. It does not take into account other sources or regional groundwater conditions. Impacted groundwater conditions are documented in this area since the 1950's. (Ground-Water Report 6; Geology and Ground-Water Conditions in Southern Lea County, New Mexico;

Alexander Nicholson, Jr. and Alfred Clebsch, Jr., U.S. Geological Survey in cooperation with the State Bureau of Mines and Mineral Resources Division of the New Mexico Institute of Mining and Technology and with the State engineer.)

The net difference in the concentration of chlorides is multiplied by the total saturated pore space volume resulting in the estimated chloride mass as shown in the following table.

Estimate of Chloride Mass

Parameter	**Value**	**Description of equations used**
Release Area	1600 ft^2	Physical measurement of junction box excavation
Longitudinal Dispersivity	10	Professional estimate for factoring the plume length
Aquifer Thickness	15 ft	Based on regional groundwater data*
Porosity	25%	Professional estimate of pore volume
Volume of impacted groundwater below former junction boxes	60,000 ft^3	Multiplication of parameters listed above
Volume of impacted groundwater below former junction boxes	1,699010.8 L	Unit conversion of above value to liters
Averaged increase in on-site chloride concentrations	850 mg/L	Difference between concentrations in MW-4 and MW-1
Total Chloride Mass	**1,444.15 kg**	Multiplication of two parameters above

** Ground-Water Report 6; Geology and Ground-Water Conditions in Southern Lea County, New Mexico; Nicholson and Clebsch*

At a pumping rate of 1 gallon per minute, for a daily ten-hour period the groundwater recovery system could extract 1.08 kg per day. At that rate it will take approximately 1,337 days to remove the 1,444.15 kg of chloride mass. The groundwater will be extracted from a newly-installed 4-inch recovery well. The recovery well design is shown in Appendix D.

Installation of the groundwater recovery system is contingent on approval of the New Mexico Office of the State Engineer and landowner approval in accordance with NMSA 1978 Article 72-12-3(B) (Article 1 1-17). The volume of recovery and duration to completion of recovery is based on the wells yield that can be sustained during pumping. If the recovery volumes are not sufficient to complete the chloride mass recovery in 1,337 **days**, NMOCD will be notified and informed of the anticipated duration of recovery operations. Additionally, a second pump may be placed in another well. Additionally, second 4-inch recovery well may be installed and equipped with a pump.

7.4 Reporting

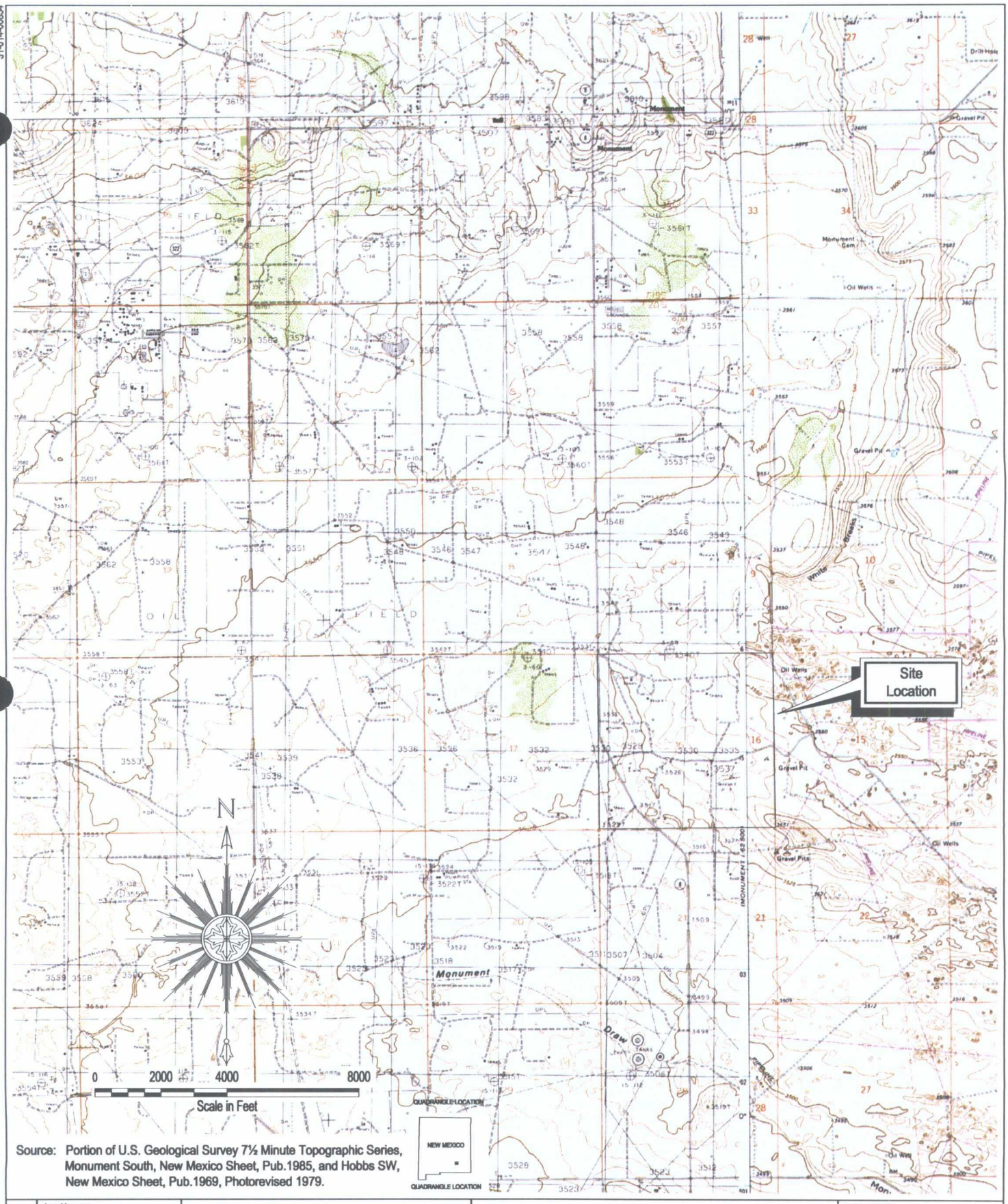
A Stage 2 Abatement Plan report detailing investigation activities and results will be submitted to the NMOCD. The report will include recommendations for closure of the site.

8. Proposed Schedule of Activities

Following approval of this Stage 2 Abatement Plan by the NMOCD, surface restoration will commence within 30 days of approval. A Stage 2 Abatement Completion Report will be submitted within 45 days of completion of field activities.

9. References

Groundwater Report 6; Geology and Ground-Water Conditions in Southern Lea County, New Mexico; Alexander Nicholson, Jr. and Alfred Clebsch, Jr.



Source: Portion of U.S. Geological Survey 7½ Minute Topographic Series, Monument South, New Mexico Sheet, Pub.1985, and Hobbs SW, New Mexico Sheet, Pub.1969, Photorevised 1979.

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Area Manager	A. Schmidt
Project Manager	S. Hall
Task Manager	S. Hall
Technical Review	S. Tischer

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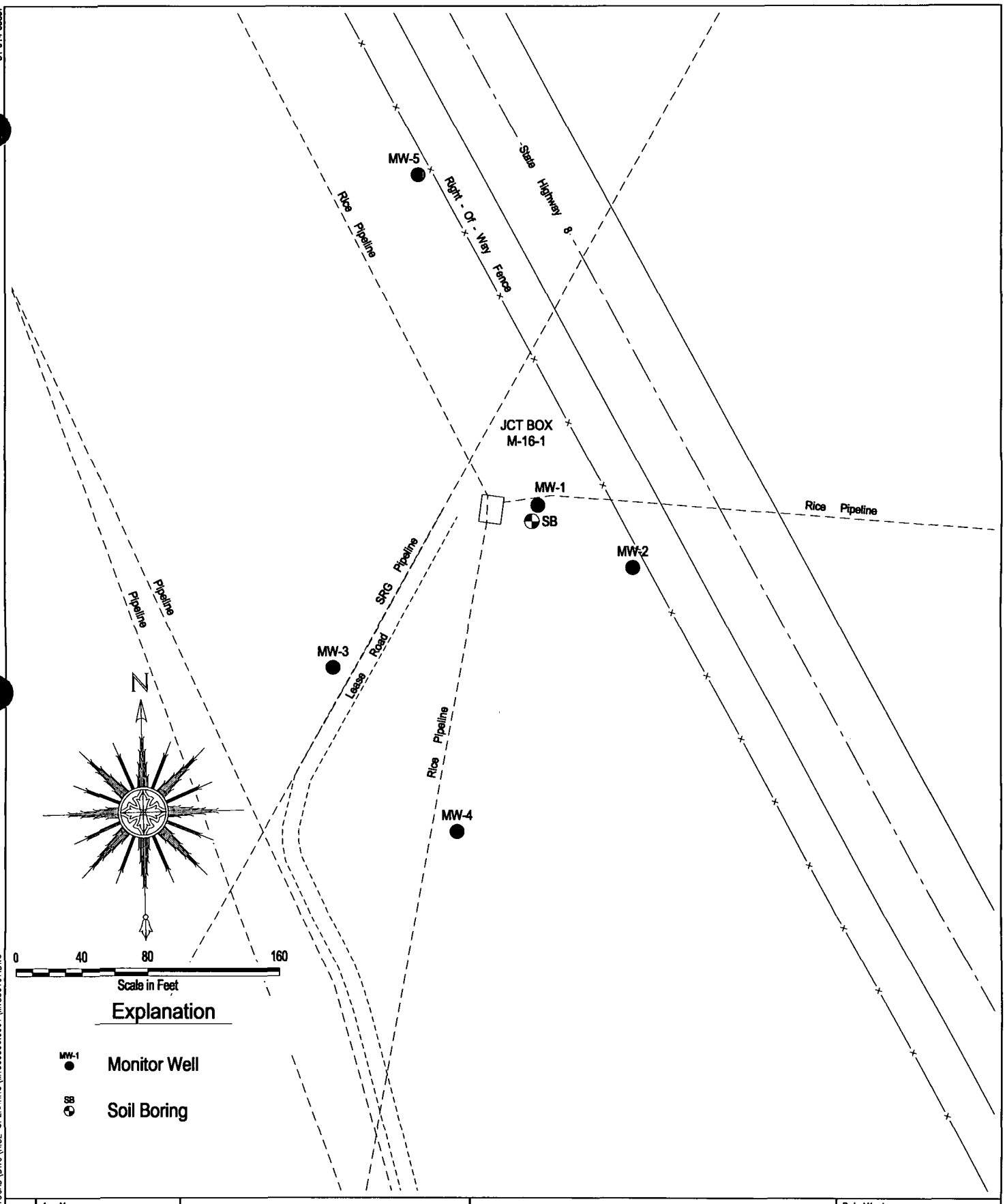
Rice Operating Company
Eunice Monument Eumont (EME) SWD System – Jct. M-16-1

Site Location Map
Junction M-16

Lea County, New Mexico

Project Number	MT000856.0001
Drawing Date	11 September 2006
Figure	1



Area Manager	A. Schmidt
Project Manager	S. Hall
Task Manager	R. Lang
Technical Review	S. Tischer

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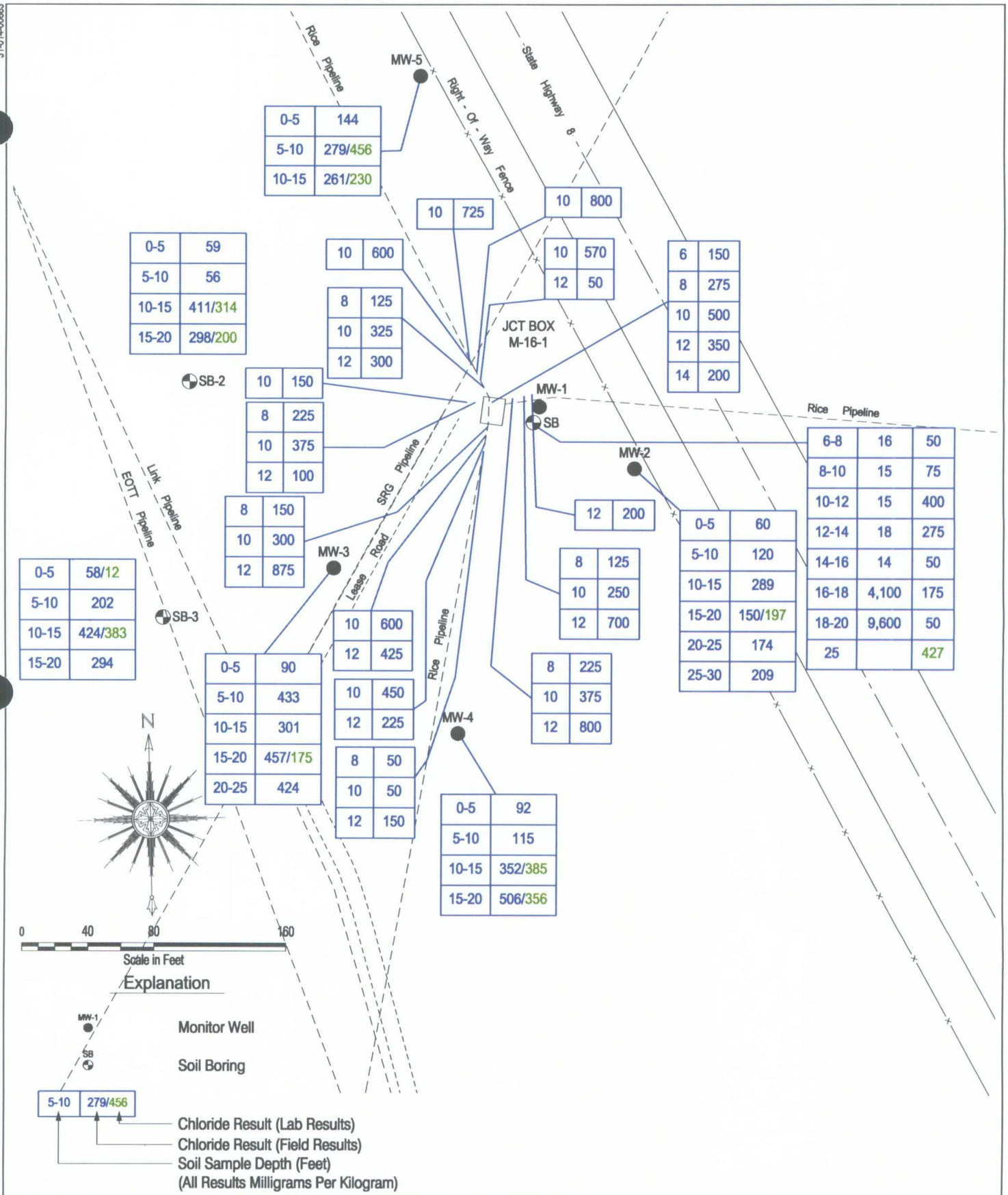
Rice Operating Company
Eunice Monument Eumont (EME) SWD System – Jct. M-16-1

Trench, Boring and Monitor Well Locations

Lea County, New Mexico

Project Number	MT000856.0001
Drawing Date	11 September 2006
Figure	2



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1/29/07 15:36 HCLA G:\AUTOCAD\DWG\RICE OPERATING\MT000856.0001\MT856108.DWG

Area Manager	A. Schmidt
Project Manager	S. Hall
Task Manager	R. Lang
Technical Review	S. Tischer

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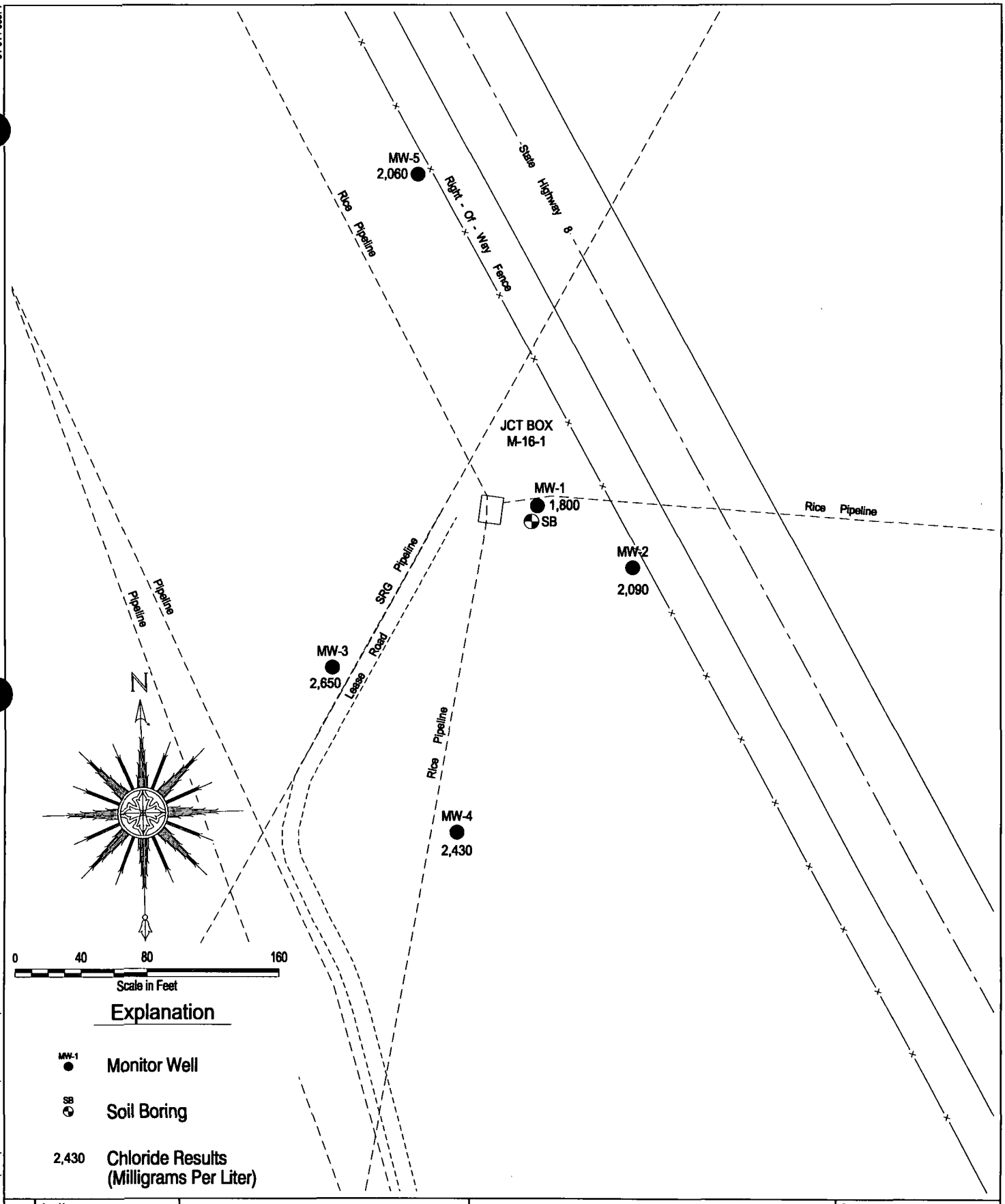
Rice Operating Company
Eunice Monument Eumont (EME) SWD System – Jct. M-16-1

Soil Sample Locations
Field Results TPH (Mega TPH Meter Reading)
Chlorides (mg/Kg)

Lea County, New Mexico

Project Number	MT000856.0001
Drawing Date	26 January 2007
Figure	3



Area Manager	A. Schmidt
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Rice Operating Company
Eunice Monument Eumont (EME) SWD System – Jct. M-16-1

October 2006 Groundwater Sampling Results Chlorides (mg/L)

Lea County, New Mexico

Project Number	MT000856.0001
Drawing Date	26 January 2007
Figure	4

31-014-00874

Table 1
Soil Sample Analytical Results
December 11, 2001

Sample ID and Depth	Field Chloride (mg/kg)
Source 6' bgs	150
Source 8' bgs	275
Source 10' bgs	500
Source 12' bgs	350
Source 14' bgs	200
10'N of valve 8 'bgs	125
10'N of valve 10'bgs	325
10'N of valve 12'bgs	300
15'N of valve 10'bgs	570
15'N of valve 12'bgs	50
20'N of valve 10'bgs	800
25'N of valve 10'bgs	600
30'N of valve 10'bgs	725
13' E of valve 8'bgs	225
13' E of valve 10'bgs	375
13' E of valve 12'bgs	800
20' E of valve 8'bgs	125
20' E of valve 10'bgs	250
20' E of valve 12'bgs	700
25' E of valve 12'bgs	200
15' S of valve 8' bgs	150
15' S of valve 10' bgs	300
15' S of valve 12' bgs	875
20' S of valve 10' bgs	600
20' S of valve 12' bgs	425
25' S of valve 10' bgs	450
25' S of valve 12' bgs	225
30' S of valve 8' bgs	50
30' S of valve 10' bgs	50
30' S of valve 12' bgs	150
10' W of valve 8'bgs	225
10' W of valve 10'bgs	375
10' W of valve 12'bgs	100
15' W of valve 10'bgs	150

Bgs- below ground surface
Mg/kg- milligrams per kilogram

Table 1 (con't)
Soil Sample Analytical Results
December 20, 2001

Sample ID and Depth	Field TPH Mega TPH Reading	Field Chlorides (mg/kg)
SB 6-8' bgs	16	50
SB 8-10' bgs	15	75
SB 10-12' bgs	15	400
SB 12-14' bgs	18	275
SB 14-16' bgs	14	50
SB 16-18' bgs	4,100	175
SB 18-20' bgs	9,600	50

Bgs- below ground surface
Mg/kg- milligrams per kilogram

Table 1 (con't)
Soil Sample Laboratory Analytical Results
January 10, 2002

Sample ID and Depth	GRO (mg/kg)	DRO (mg/kg)	Chlorides (mg/kg)
SB @25' bgs	<50	<50	427

Bgs- below ground surface
Mg/kg- milligrams per kilogram

TABLE 2

RICE *Operating Company*
Monitor Well Data Sheet

EME jct. M-16-1
unit 'M', Sec. 16, T20S, R37E

NMOCD Case #1R0427-93

2-inch well

(ft) (gal) All concentrations are in mg/L

MW #	DEPTH TO WATER *	TOTAL DEPTH	WELL VOLUME	VOLUME PURGED	SAMPLE DATE	Cl⁻	TDS	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	SULFATE	COMMENTS
1	22.60	35.10	2.000	6.10	01/10/02	2079	8016	<0.002	<0.002	<0.002	<0.006	3420	
1	23.78	25.81	0.325	1.00	05/13/02	2070	7620	<0.001	<0.001	<0.001	<0.001	2220	
1	23.08	34.80	1.875	5.75	08/23/02	2040	7740	<0.001	<0.001	<0.001	<0.001	2380	
1	23.53	34.69	1.786	5.50	11/12/02	2130	7230	<0.001	<0.001	<0.001	<0.001	2460	
1	23.20	34.49	1.800	5.40	02/27/03	1960	7520	<0.001	<0.001	<0.001	<0.001	1980	
1	23.10	34.50	1.824	5.40	05/22/03	2060	7350	<0.001	<0.001	<0.001	<0.001	2470	
1	23.83	34.25	1.660	5.00	08/22/03	2170	7390	<0.001	<0.001	<0.001	<0.001	2170	
1	24.07	34.34	1.640	4.90	11/20/03	1990	7400	<0.001	<0.001	<0.001	<0.001	2300	
1	24.90	34.25	1.490	4.47	02/18/04	2479	7368	<0.002	<0.002	<0.002	<0.006	1106	
1	22.75	34.25	1.840	5.50	05/26/04	1919	6784	<0.002	<0.002	<0.002	<0.006	1889	
1	23.18	31.40	1.315	3.95	09/07/04	2130	7200	<0.001	<0.001	<0.001	<0.001	2180	
1	22.45	31.40	1.430	4.30	11/24/04	2210	8020	<0.001	0.000766	0.00291	0.01019	2460	lt. odor; clear
1	XXX	XXX	XXX	XXX	03/22/05	2470	7810	<0.001	<0.001	<0.001	<0.001	2600	
1	21.00	32.00	XXX	5.61	06/28/05	2310	7230	<0.001	<0.001	<0.001	<0.001	2480	
1	21.39	32.00	XXX	5.09	09/06/05	2250	6950	<0.001	<0.001	<0.001	<0.001	1990	
1	21.35	31.50	1.600	5.00	11/02/05	1700	6600	<0.001	<0.001	<0.001	<0.001	1630	Clear with no odor
1	21.27	31.50	1.600	5.00	02/01/06	1960	6340	<0.001	<0.001	<0.001	<0.001	1740	Clear with no odor
1	21.14	31.50	1.700	10.00	05/03/06	1690	6420	<0.001	<0.001	<0.001	<0.001	1510	
1	21.95	31.50	1.500	10.00	7/25/2006	1830	6435	<0.001	<0.001	<0.001	<0.001	2010	
1	21.43	31.50	1.600	8.00	10/20/06	1800	5990	<0.001	<0.001	<0.001	<0.001	2230	Clear, no odor

** Depth to water measured from top of casing*
Casing is 2.958 ft

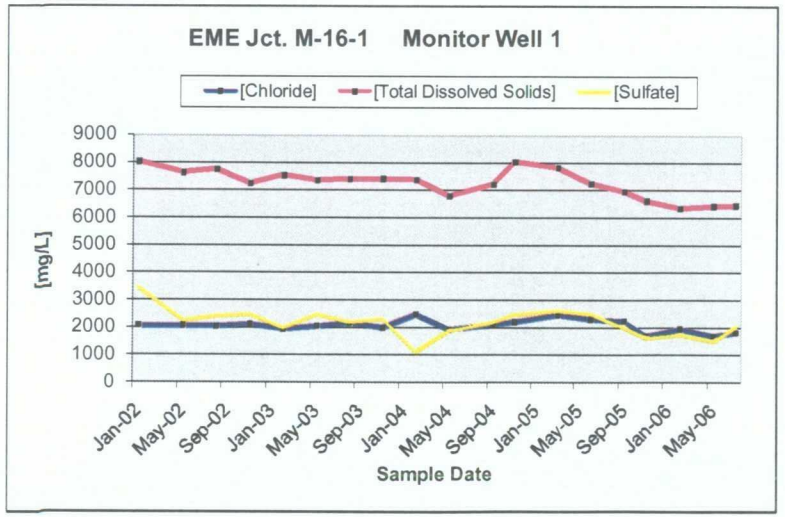


TABLE 2

RICE *Operating Company*
Monitor Well Data Sheet

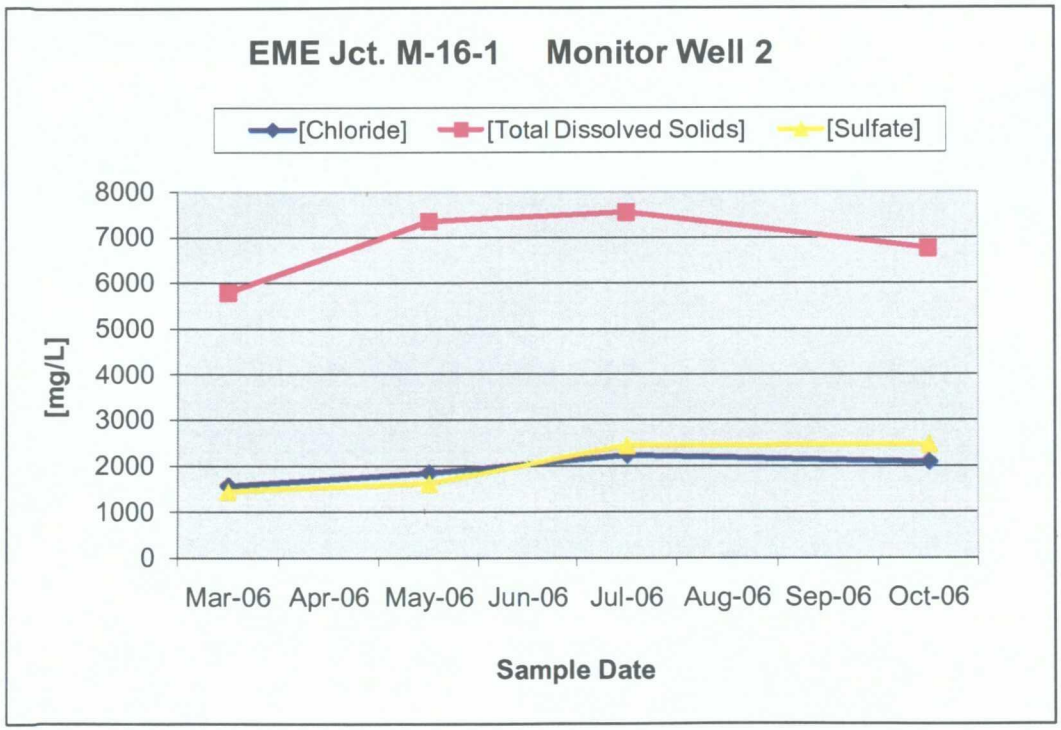
EME jct. M-16-1
unit 'M', Sec. 16, T20S, R37E

NMOCD Case # 1R0427-93

2-inch well

(ft) (gal) All concentrations are in mg/L

MW #	DEPTH TO WATER *	TOTAL DEPTH	WELL VOLUME	VOLUME PURGED	SAMPLE DATE	Cl^-	TDS	BENZENE	TOLUENE	ETHYL BENZEN	TOTAL XYLENE	SULFATE	COMMENTS
2	20.81	32.35	1.800	6.00	03/08/06	1570	5780	<0.001	<0.001	<0.001	<0.001	1450	
2	20.75	32.35	1.900	10.00	05/03/06	1850	7330	<0.001	<0.001	<0.001	<0.001	1620	
2	21.58	32.35	1.700	10.00	07/25/06	2240	7535	<0.001	<0.001	<0.001	<0.001	2440	
2	21.02	32.35	1.800	8.00	10/20/06	2090	6740	<0.001	<0.001	<0.001	<0.001	2470	



** Depth to water measured from top of casing*
Casing is 2.958 ft

TABLE 2

RICE *Operating Company*
Monitor Well Data Sheet

EME jct. M-16-1
unit 'M', Sec. 16, T20S, R37E

NMOCD Case # 1R0427-93

2-inch well

(ft) (gal) All concentrations are in mg/L

MW #	DEPTH TO WATER *	TOTAL DEPTH	WELL VOLUME	VOLUME PURGED	SAMPLE DATE	Cl^-	TDS	BENZENE	TOLUENE	ETHYL BENZEN	TOTAL XYLENE	SULFATE	COMMENTS
3	18.73	27.53	1.400	4.50	03/08/06	2860	8960	<0.001	<0.001	<0.001	<0.001	2220	
3	18.69	27.53	1.400	10.00	05/03/06	2540	8350	<0.001	<0.001	<0.001	<0.001	1860	
3	19.44	27.53	1.300	10.00	07/25/06	2940	7840	<0.001	<0.001	<0.001	<0.001	2620	
3	18.96	27.53	1.400	6.00	0/20/06	2650	7960	<0.001	<0.001	<0.001	<0.001	2600	

** Depth to water measured from top of casing*
Casing is 2.958 ft

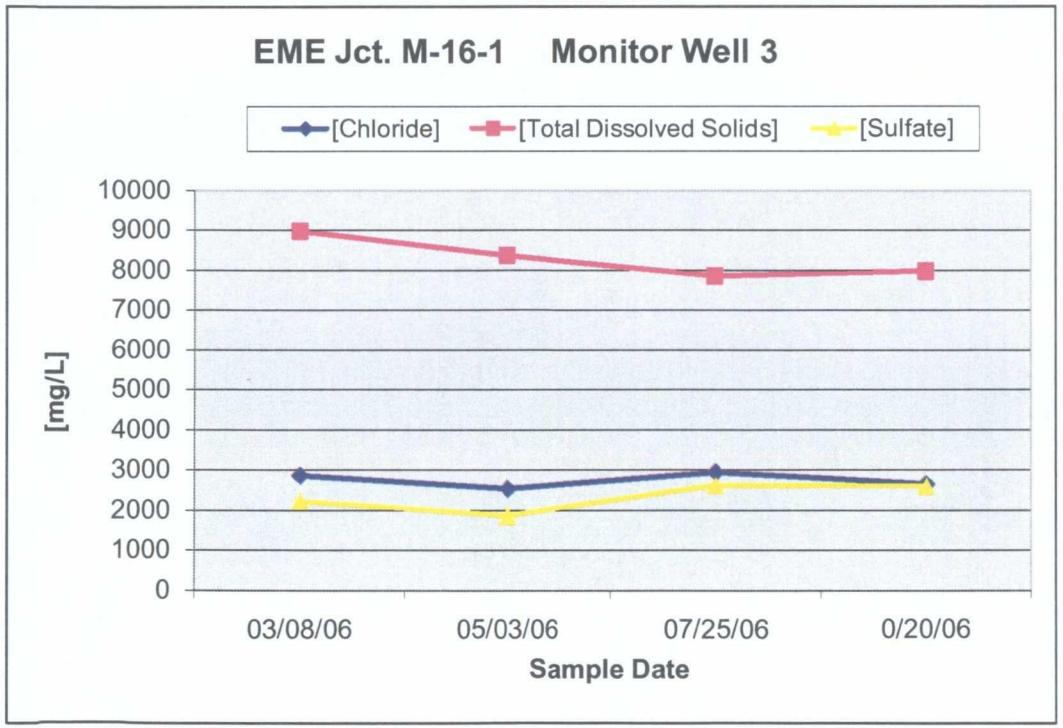


TABLE 2

RICE *Operating Company*
Monitor Well Data Sheet

EME jct. M-16-1
unit 'M', Sec. 16, T20S, R37E

NMOCD Case # 1R0427-93

2-inch well

(ft) (gal) All concentrations are in mg/L

MW #	DEPTH TO WATER *	TOTAL DEPTH	WELL VOLUME	VOLUME PURGED	SAMPLE DATE	Cl^-	TDS	BENZENE	TOLUENE	ETHYL BENZEN	TOTAL XYLENE	SULFATE	COMMENTS
4	20.82	31.40	1.700	10.00	06/13/06	2680	7820	<0.001	<0.001	<0.001	<0.001	2220	
4	21.08	31.40	1.700	10.00	07/25/06	2500	7030	<0.001	<0.001	<0.001	<0.001	2530	
4	20.59	31.40	1.700	8.00	10/20/06	2430	7470	<0.001	<0.001	<0.001	<0.001	2680	

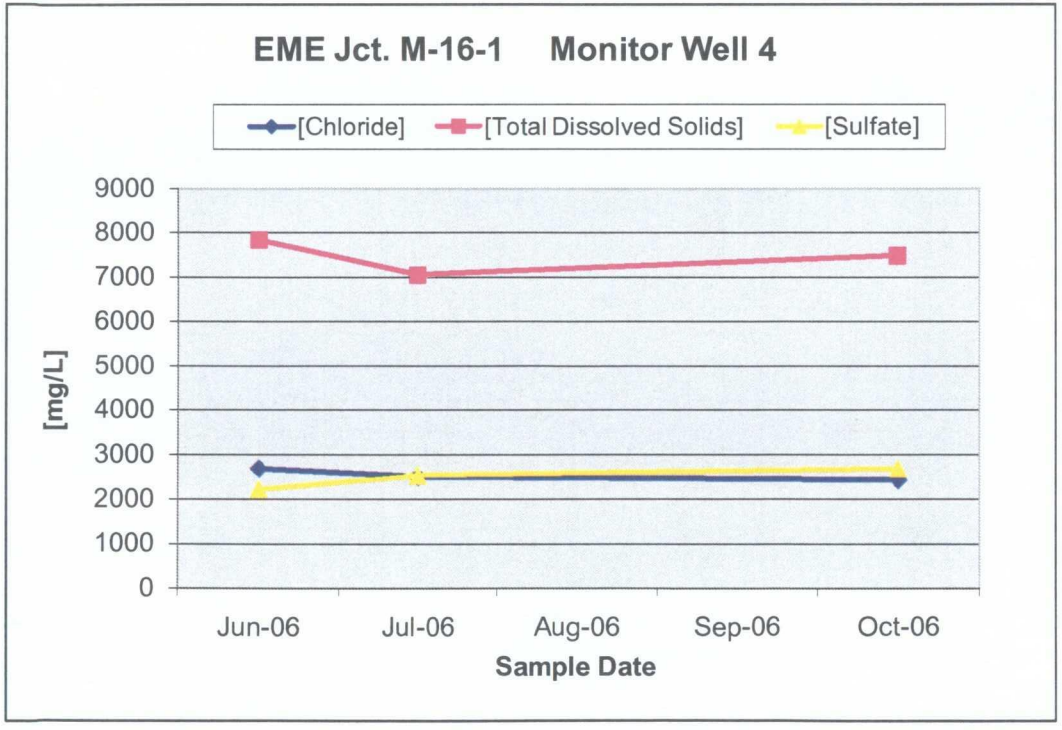


TABLE 2

RICE *Operating Company*
Monitor Well Data Sheet

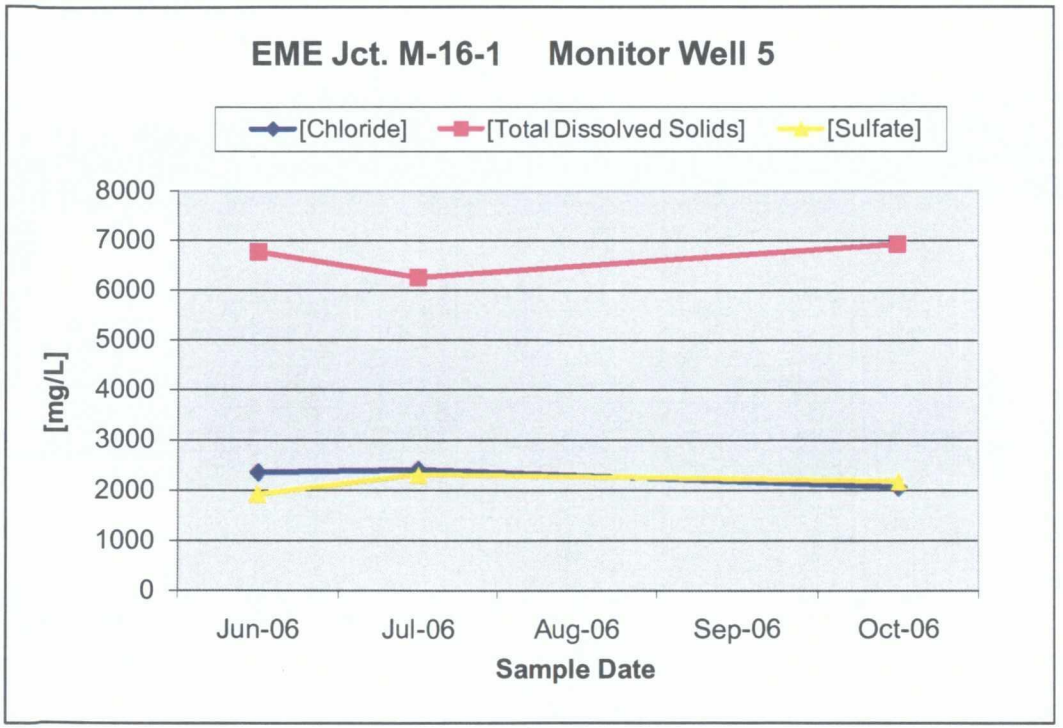
EME jct. M-16-1
unit 'M', Sec. 16, T20S, R37E

NMOCD Case # 1R0427-93

2-inch well

(ft) (gal) All concentrations are in mg/L

MW #	DEPTH TO WATER *	TOTAL DEPTH	WELL VOLUME	VOLUME PURGED	SAMPLE DATE	Cl^-	TDS	BENZENE	TOLUENE	ETHYL BENZEN	TOTAL XYLENE	SULFATE	COMMENTS
5	20.91	33.50	2.000	10.00	06/13/06	2350	6760	<0.001	<0.001	<0.001	<0.001	1920	
5	21.19	33.50	2.000	10.00	07/25/06	2400	6245	<0.001	<0.001	<0.001	<0.001	2310	
5	20.70	33.50	2.000	10.00	10/20/06	2060	6910	<0.001	<0.001	<0.001	<0.001	2170	



Appendix A

Soil Boring Lithology Log

Atkins Engineering Associates, Inc. 2904 W. 2nd St., Roswell, NM 88202-3156	LOG OF BORING Rice M-16 ~ 1 TH1 (Page 1 of 1)
Rice Operating Company 122 West Taylor Hobbs, New Mexico 88240 Contact: Donnie Anderson Job #Riceoil.air.01	Date : 12-20-01 Drill Start : 830 Drill End : 0955 Site Location : 4 mi. South of Monument, NM Auger Type : Hollow Stem Logged By : Mort Bates Boring Location : South side of pit

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION	Lab
0		SP		Poorly graded sand, tan, loose, dry	
20		SP		Poorly graded sand w/caliche, tan, firm, dry	
23		SS		Sandstone, tan, firm, dry	
25		SP		Poorly graded sand, tan, loose, moist	
35					
40					

Backfill cuttings

Bentonite seal

12-21-2001 C:\MTECH46\RICEOIL\AIR\m-161-1.bor

ARCADIS

Appendix B

Monitor Well Logs

WELL LOG

WELL NO.
M-16-1 MW-2

ARCADIS
1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000856.0001
CLIENT NAME: Rice Operating Company
PROJECT NAME: Junction M-16-1 EME SWD System
SITE LOCATION: Lea County, New Mexico
DRILLING CO: White Drilling Co.
DRILLING METHOD: Rotary/Air
SAMPLE METHOD: Shovel
DATE BEGUN: 2/28/06 DATE COMPLETED: 2/28/06
DRILLER: R. Allen ELEVATION (SURF.):
LOGGER: R. Lang ELEVATION (T.O.C.):
FILE NAME: M-16-1 MW-2.dat UNIQUE NUMBER: 31-014-00840

STATIC WATER LEVEL: MEAS. PT.: T.O.C. DATE:
HOLE SIZE(S): 6 1/4" TOTAL DEPTH: -30.0'
SURFACE COMPLETION: 8" Locking Steel Sleeve, 4'x4'x6" Conc. Slab

	TYPES	DEPTHS
GROUT TYPE:	Portland Cement	-5.0' to Surface
SEAL TYPE:	Bentonite Chips	-8.0' to -5.0'
SCREEN PACK:	8/16 Sand	-30.0' to -8.0'
CASING TYPE:	2" Diameter Sch. 40 PVC Blank	-10.0' to Surface
	—	—
WELL SCREEN:	2" Diameter Sch. 40 PVC, 0.020" slots	-30.0' to -10.0'
PLUG BACK:	—	—

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0									SAND 7.5YR 6/2 pinkish gray, fine grained, subangular, well sorted, loose, argillaceous, CALICHE nodules, dry.	
-5		Shovel								
-10		Shovel								
-15		Shovel							Damp at -17.0'.	
-20		Shovel								
-25		Shovel								
-30										

WELL LOG

WELL NO.
M-16-1 MW-3

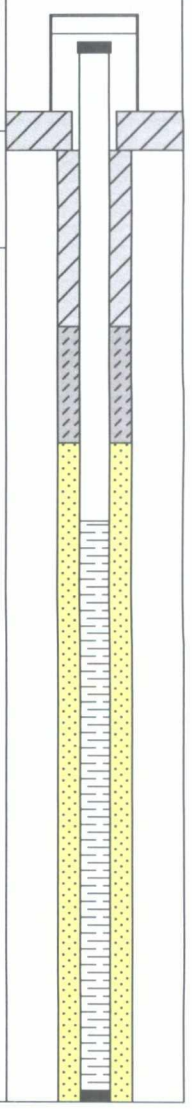
ARCADIS
1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000856.0001
CLIENT NAME: Rice Operating Company
PROJECT NAME: Junction M-16-1 EME SWD System
SITE LOCATION: Lea County, New Mexico
DRILLING CO: White Drilling Co.
DRILLING METHOD: Rotary/Air
SAMPLE METHOD: Shovel
DATE BEGUN: 3/1/06 DATE COMPLETED: 3/1/06
DRILLER: R. Allen ELEVATION (SURF.):
LOGGER: R. Lang ELEVATION (T.O.C.):
FILE NAME: M-16-1 MW-3.dat UNIQUE NUMBER: 31-014-00841

STATIC WATER LEVEL: MEAS. PT.: T.O.C. DATE:
HOLE SIZE(S): 6 1/4" TOTAL DEPTH: -25.0
SURFACE COMPLETION: 8" Locking Steel Sleeve, 4'x4'x6" Conc. Slab

	TYPES	DEPTHS
GROUT TYPE:	Portland Cement	-5.0' to Surface
SEAL TYPE:	Bentonite Chips	-8.0' to -5.0'
SCREEN PACK:	8/16 Sand	-25.0' to -8.0'
CASING TYPE:	2" Diameter Sch. 40 PVC Blank	-10.0' to Surface
	—	—
WELL SCREEN:	2" Diameter Sch. 40 PVC, 0.020" slots	-25.0' to -10.0'
PLUG BACK:	—	—

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0									SAND 10 YR 7/4 very pale brown, fine grained, well sorted, loose, dry, CALICHE nodules.	
-5		Shovel							SAND 10 YR 8/4 very pale brown, fine grained, well sorted, loose, dry.	
-10		Shovel								
-15		Shovel							Wet at -17.0'.	
-20		Shovel								
-25										



WELL LOG

WELL NO.
M-16-1 MW-4

ARCADIS
1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000856.0001
CLIENT NAME: Rice Operating Company
PROJECT NAME: Junction M-16-1 EME SWD System
SITE LOCATION: Lea County, New Mexico
DRILLING CO: White Drilling Co.
DRILLING METHOD: Rotary/Air
SAMPLE METHOD: Shovel
DATE BEGUN: 6/1/06 DATE COMPLETED: 6/1/06
DRILLER: R. Allen ELEVATION (SURF.):
LOGGER: R. Lang ELEVATION (T.O.C.):
FILE NAME: M-16-1 MW-4. DAT UNIQUE NUMBER: 31-014-00852

STATIC WATER LEVEL: MEAS. PT.: T.O.C. DATE:
HOLE SIZE(S): 6 1/4" TOTAL DEPTH: -30.0'
SURFACE COMPLETION: 6" Locking Steel Sleeve, 2'x2'x4" Conc. Slab

	TYPES	DEPTHS
GROUT TYPE:	Portland Cement	-6.0' to Surface
SEAL TYPE:	Bentonite Chips	-8.0' to -6.0'
SCREEN PACK:	8/16 Sand	-30.0' to -8.0'
CASING TYPE:	2" Diameter Sch. 40 PVC Blank	-10.0' to Surface
	—	—
WELL SCREEN:	2" Diameter Sch. 40 PVC, 0.020" slots	-30.0' to -10.0'
PLUG BACK:	—	—

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0									SANDSTONE 7.5YR 8/2 pinkish white, medium to fine grained, subrounded to subangular, well sorted, very soft.	
-5		Shovel								
-10		Shovel								
-15		Shovel								
-20		Shovel								
-25		Shovel								
-30										

WELL LOG

WELL NO.
M-16-1 MW-5

ARCADIS
1004 N. Big Spring St. Suite 300, Midland, TX 79701-3383 Tel: 432/687-5400 Fax: 432/687-5401

PROJECT NUMBER: MT000856.0001
CLIENT NAME: Rice Operating Company
PROJECT NAME: Junction M-16-1 EME SWD System
SITE LOCATION: Lea County, New Mexico
DRILLING CO: White Drilling Co.
DRILLING METHOD: Rotary/Air
SAMPLE METHOD: Shovel
DATE BEGUN: 6/1/06 DATE COMPLETED: 6/1/06
DRILLER: R. Allen ELEVATION (SURF.):
LOGGER: R. Lang ELEVATION (T.O.C.):
FILE NAME: M-16-1 MW-5. DAT UNIQUE NUMBER: 31-014-00853

STATIC WATER LEVEL: MEAS. PT.: T.O.C. DATE:
HOLE SIZE(S): 6 1/4" TOTAL DEPTH: -30.0'
SURFACE COMPLETION: 6" Locking Steel Sleeve, 2'x2'x4" Conc. Slab

	TYPES	DEPTHS
GROUT TYPE:	Portland Cement	-6.0' to Surface
SEAL TYPE:	Bentonite Chips	-8.0' to -6.0'
SCREEN PACK:	8/16 Sand	-30.0' to -8.0'
CASING TYPE:	2" Diameter Sch. 40 PVC Blank	-10.0' to Surface
	—	—
WELL SCREEN:	2" Diameter Sch. 40 PVC, 0.020" slots	-30.0' to -10.0'
PLUG BACK:	—	—

DEPTH	SAMPLED	SAMPLING METHOD	ANALYZED	MOISTURE	RECOVERY	OVM READING	U. S. C. S. CLASS	LITHOLOGY	DESCRIPTION	WELL INSTALLATION
0									SANDSTONE 2.5YR 7/4 light reddish brown, medium grained to silty, subangular, poorly sorted, very soft.	
-5		Shovel								
-10		Shovel							SANDSTONE 5YR 7/4 pink, medium grained, subrounded, very well sorted, very soft to loose.	
-15		Shovel								
-20		Shovel								
-25		Shovel								
-30										

ARCADIS

Appendix C

2006 Laboratory Analytical Results

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Kristin Farris-Pope

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: EME Jct. M-16-1

Project Number: None Given

Location: T20S-R37E-Sec 16M, Lea County, NM

Lab Order Number: 6J23008

Report Date: 10/31/06

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: EME Jct. M-16-1
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well #1	6J23008-01	Water	10/20/06 12:05	10-23-2006 12:00
Monitor Well #2	6J23008-02	Water	10/20/06 10:10	10-23-2006 12:00
Monitor Well #3	6J23008-03	Water	10/20/06 13:00	10-23-2006 12:00
Monitor Well #4	6J23008-04	Water	10/20/06 14:10	10-23-2006 12:00
Monitor Well #5	6J23008-05	Water	10/20/06 09:05	10-23-2006 12:00

Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6J23008-01) Water									
Benzene	ND	0.00100	mg/L	1	EJ62606	10/26/06	10/27/06	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		*80.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*82.0 %*	*80-120*		"	"	"	"	
Monitor Well #2 (6J23008-02) Water									
Benzene	ND	0.00100	mg/L	1	EJ62606	10/26/06	10/27/06	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		*83.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*85.5 %*	*80-120*		"	"	"	"	
Monitor Well #3 (6J23008-03) Water									
Benzene	ND	0.00100	mg/L	1	EJ62606	10/26/06	10/29/06	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		*95.5 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*84.8 %*	*80-120*		"	"	"	"	
Monitor Well #4 (6J23008-04) Water									
Benzene	ND	0.00100	mg/L	1	EJ62606	10/26/06	10/29/06	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		*104 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.2 %*	*80-120*		"	"	"	"	

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

Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #5 (6J23008-05) Water									
Benzene	ND	0.00100	mg/L	1	EJ62606	10/26/06	10/29/06	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		*100 %*	*80-120*		"	"	"	"	

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Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6J23008-01) Water									
Total Alkalinity	**456**	4.00	mg/L	2	EJ62401	10/25/06	10/25/06	EPA 310.1M	
Chloride	**1800**	50.0	"	100	EJ62404	10/24/06	10/24/06	EPA 300.0	
Total Dissolved Solids	**5990**	10.0	"	1	EJ62601	10/25/06	10/26/08	EPA 160.1	
Sulfate	**2230**	50.0	"	100	EJ62404	10/24/06	10/24/06	EPA 300.0	
Monitor Well #2 (6J23008-02) Water									
Total Alkalinity	**368**	4.00	mg/L	2	EJ62401	10/25/06	10/25/06	EPA 310.1M	
Chloride	**2090**	50.0	"	100	EJ62404	10/24/06	10/24/06	EPA 300.0	
Total Dissolved Solids	**6740**	10.0	"	1	EJ62601	10/25/06	10/26/08	EPA 160.1	
Sulfate	**2470**	50.0	"	100	EJ62404	10/24/06	10/24/06	EPA 300.0	
Monitor Well #3 (6J23008-03) Water									
Total Alkalinity	**412**	4.00	mg/L	2	EJ62401	10/25/06	10/25/06	EPA 310.1M	
Chloride	**2650**	50.0	"	100	EJ62404	10/24/06	10/24/06	EPA 300.0	
Total Dissolved Solids	**7960**	10.0	"	1	EJ62601	10/25/06	10/26/08	EPA 160.1	
Sulfate	**2600**	50.0	"	100	EJ62404	10/24/06	10/24/06	EPA 300.0	
Monitor Well #4 (6J23008-04) Water									
Total Alkalinity	**448**	4.00	mg/L	2	EJ62401	10/25/06	10/25/06	EPA 310.1M	
Chloride	**2430**	50.0	"	100	EJ62404	10/24/06	10/24/06	EPA 300.0	
Total Dissolved Solids	**7470**	10.0	"	1	EJ62601	10/25/06	10/26/08	EPA 160.1	
Sulfate	**2680**	50.0	"	100	EJ62404	10/24/06	10/24/06	EPA 300.0	
Monitor Well #5 (6J23008-05) Water									
Total Alkalinity	**404**	4.00	mg/L	2	EJ62401	10/25/06	10/25/06	EPA 310.1M	
Chloride	**2060**	50.0	"	100	EJ62404	10/24/06	10/24/06	EPA 300.0	
Total Dissolved Solids	**6910**	10.0	"	1	EJ62601	10/25/06	10/26/08	EPA 160.1	
Sulfate	**2170**	50.0	"	100	EJ62404	10/24/06	10/24/06	EPA 300.0	

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Rice Operating Co. 122 W. Taylor Hobbs NM, 88240	Project: EME Jct. M-16-1 Project Number: None Given Project Manager: Kristin Farris-Pope	Fax: (505) 397-1471

Total Metals by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (6J23008-01) Water									
Calcium	**245**	4.05	mg/L	50	EJ62513	10/25/06	10/25/06	EPA 6010B	
Magnesium	**160**	1.80	"	"	"	"	"	"	
Potassium	**33.7**	0.600	"	10	"	"	"	"	
Sodium	**1690**	10.8	"	250	"	"	"	"	
Monitor Well #2 (6J23008-02) Water									
Calcium	**376**	4.05	mg/L	50	EJ62513	10/25/06	10/25/06	EPA 6010B	
Magnesium	**230**	1.80	"	"	"	"	"	"	
Potassium	**42.4**	0.600	"	10	"	"	"	"	
Sodium	**1850**	10.8	"	250	"	"	"	"	
Monitor Well #3 (6J23008-03) Water									
Calcium	**356**	4.05	mg/L	50	EJ62513	10/25/06	10/25/06	EPA 6010B	
Magnesium	**222**	1.80	"	"	"	"	"	"	
Potassium	**44.7**	0.600	"	10	"	"	"	"	
Sodium	**2370**	10.8	"	250	"	"	"	"	
Monitor Well #4 (6J23008-04) Water									
Calcium	**341**	4.05	mg/L	50	EJ62513	10/25/06	10/25/06	EPA 6010B	
Magnesium	**262**	1.80	"	"	"	"	"	"	
Potassium	**41.1**	0.600	"	10	"	"	"	"	
Sodium	**2260**	10.8	"	250	"	"	"	"	
Monitor Well #5 (6J23008-05) Water									
Calcium	**315**	4.05	mg/L	50	EJ62513	10/25/06	10/25/06	EPA 6010B	
Magnesium	**218**	1.80	"	"	"	"	"	"	
Potassium	**39.9**	0.600	"	10	"	"	"	"	
Sodium	**1960**	10.8	"	250	"	"	"	"	

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: EME Jct. M-16-1
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

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 EJ62606 - EPA 5030C (GC)										
Blank (EJ62606-BLK1)				Prepared: 10/26/06 Analyzed: 10/27/06						
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	*33.1*		*ug/l*	*40.0*		*82.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*32.8*		*"*	*40.0*		*82.0*	*80-120*			
LCS (EJ62606-BS1)				Prepared: 10/26/06 Analyzed: 10/27/06						
Benzene	0.0439	0.00100	mg/L	0.0500		87.8	80-120			
Toluene	0.0444	0.00100	"	0.0500		88.8	80-120			
Ethylbenzene	0.0423	0.00100	"	0.0500		84.6	80-120			
Xylene (p/m)	0.0834	0.00100	"	0.100		83.4	80-120			
Xylene (o)	0.0428	0.00100	"	0.0500		85.6	80-120			
Surrogate: a,a,a-Trifluorotoluene	*35.0*		*ug/l*	*40.0*		*87.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*35.0*		*"*	*40.0*		*87.5*	*80-120*			
Calibration Check (EJ62606-CCV1)				Prepared: 10/26/06 Analyzed: 10/29/06						
Benzene	59.5		ug/l	50.0		119	80-120			
Toluene	56.1		"	50.0		112	80-120			
Ethylbenzene	58.4		"	50.0		117	80-120			
Xylene (p/m)	116		"	100		116	80-120			
Xylene (o)	59.0		"	50.0		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	*37.1*		*"*	*40.0*		*92.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*42.0*		*"*	*40.0*		*105*	*80-120*			
Matrix Spike (EJ62606-MS1)	**Source: 6J23009-01**			Prepared: 10/26/06 Analyzed: 10/29/06						
Benzene	0.0563	0.00100	mg/L	0.0500	ND	113	80-120			
Toluene	0.0560	0.00100	"	0.0500	ND	112	80-120			
Ethylbenzene	0.0593	0.00100	"	0.0500	ND	119	80-120			
Xylene (p/m)	0.115	0.00100	"	0.100	ND	115	80-120			
Xylene (o)	0.0501	0.00100	"	0.0500	ND	100	80-120			
Surrogate: a,a,a-Trifluorotoluene	*39.4*		*ug/l*	*40.0*		*98.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*44.4*		*"*	*40.0*		*111*	*80-120*			

Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

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 EJ62606 - EPA 5030C (GC)										
Matrix Spike Dup (EJ62606-MSD1)	**Source: 6J23009-01**			Prepared: 10/26/06 Analyzed: 10/29/06						
Benzene	0.0488	0.00100	mg/L	0.0500	ND	97.6	80-120	14.6	20	
Toluene	0.0459	0.00100	"	0.0500	ND	91.8	80-120	19.8	20	
Ethylbenzene	0.0481	0.00100	"	0.0500	ND	96.2	80-120	21.2	20	QR-02
Xylene (p/m)	0.0984	0.00100	"	0.100	ND	98.4	80-120	15.6	20	
Xylene (o)	0.0521	0.00100	"	0.0500	ND	104	80-120	3.92	20	
Surrogate: a,a,a-Trifluorotoluene	*34.3*		*ug/l*	*40.0*		*85.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*42.0*		*"*	*40.0*		*105*	*80-120*			

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: EME Jct. M-16-1
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

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 EJ62401 - General Preparation (WetChem)										
Blank (EJ62401-BLK1)				Prepared & Analyzed: 10/24/06						
Total Alkalinity	ND	2.00	mg/L							
Duplicate (EJ62401-DUP1)	Source: 6J19010-01			Prepared & Analyzed: 10/24/06						
Total Alkalinity	270	2.00	mg/L		272			0.738	20	
Reference (EJ62401-SRM1)				Prepared & Analyzed: 10/24/06						
Total Alkalinity	248		mg/L	250		99.2	90-110			
Batch EJ62404 - General Preparation (WetChem)										
Blank (EJ62404-BLK1)				Prepared & Analyzed: 10/24/06						
Chloride	ND	0.500	mg/L							
Sulfate	ND	0.500	"							
LCS (EJ62404-BS1)				Prepared & Analyzed: 10/24/06						
Chloride	11.3	0.500	mg/L	10.0		113	80-120			
Sulfate	10.6	0.500	"	10.0		106	80-120			
Calibration Check (EJ62404-CCV1)				Prepared & Analyzed: 10/24/06						
Sulfate	11.0		mg/L	10.0		110	80-120			
Chloride	11.8		"	10.0		118	80-120			
Duplicate (EJ62404-DUP1)	Source: 6J19026-03			Prepared & Analyzed: 10/24/06						
Sulfate	23.2	5.00	mg/L		22.8			1.74	20	
Chloride	69.5	5.00	"		77.5			10.9	20	
Duplicate (EJ62404-DUP2)	Source: 6J24001-01			Prepared & Analyzed: 10/24/06						
Sulfate	44.0	25.0	mg/L		45.3			2.91	20	
Chloride	1570	25.0	"		1640			4.36	20	

Rice Operating Co. 122 W. Taylor Hobbs NM, 88240	Project: EME Jct. M-16-1 Project Number: None Given Project Manager: Kristin Farris-Pope	Fax: (505) 397-1471

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 EJ62404 - General Preparation (WetChem)										
Matrix Spike (EJ62404-MS1)		**Source: 6J19026-03**		Prepared & Analyzed: 10/24/06						
Chloride	192	5.00	mg/L	100	77.5	114	80-120			
Sulfate	124	5.00	"	100	22.8	101	80-120			
Matrix Spike (EJ62404-MS2)		**Source: 6J24001-01**		Prepared & Analyzed: 10/24/06						
Chloride	2240	25.0	mg/L	500	1640	120	80-120			
Sulfate	540	25.0	"	500	45.3	98.9	80-120			
Batch EJ62601 - Filtration Preparation										
Duplicate (EJ62601-DUP1)		**Source: 6J23008-01**		Prepared: 10/25/06 Analyzed: 10/26/08						
Total Dissolved Solids	6280	10.0	mg/L		5990			4.73	5	
Duplicate (EJ62601-DUP2)		**Source: 6J25004-01**		Prepared: 10/25/06 Analyzed: 10/26/08						
Total Dissolved Solids	1040	10.0	mg/L		1010			2.93	5	

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Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

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 EJ62513 - 6010B/No Digestion										
Blank (EJ62513-BLK1)				Prepared & Analyzed: 10/25/06						
Calcium	ND	0.0810	mg/L							
Magnesium	ND	0.0360	"							
Potassium	ND	0.0600	"							
Sodium	ND	0.0430	"							
Calibration Check (EJ62513-CCV1)				Prepared & Analyzed: 10/25/06						
Calcium	2.23		mg/L	2.00		112	85-115			
Magnesium	2.29		"	2.00		114	85-115			
Potassium	1.74		"	2.00		87.0	85-115			
Sodium	2.13		"	2.00		106	85-115			
Duplicate (EJ62513-DUP1)	**Source: 6J19026-03**			Prepared & Analyzed: 10/25/06						
Calcium	53.8	0.810	mg/L		54.7			1.66	20	
Magnesium	21.4	0.360	"		21.5			0.466	20	
Potassium	12.0	0.600	"		12.2			1.65	20	
Sodium	27.4	0.430	"		27.0			1.47	20	

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: EME Jct. M-16-1
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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: 10/31/2006

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79768
Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Kristin Farris Pope kpope@riceswd.com
Company Name: RICE Operating Company
Company Address: 122 W. Taylor Street
City/State/Zip: Hobbs, New Mexico 88240
Telephone No: (505) 393-9174 Fax No: (505) 397-1471
Sampler Signature: Rozanne Johnson (505) 631-9310
Email: rozanne@valornet.com

Project Name: EME Junction M-16-1
Project Number:
Project Loc: T20S-R37E-Sec16M, Lea County NM
PO Number:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO3	HCl (2) 40 ml glass vials	NaOH	H2SO4	None (1) 1 Liter HDPE	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify)	Analyze For: TPH: 418.1 8015M 8025 1005	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	TCLP	TOTAL	Total Dissolved Solids				RUSH TAT (Pre-Schedule)	Standard TAT
01	Monitor Well #1	10/20/2006	12:05	3	X		2			1		X					X	X					X			X					X
02	Monitor Well #2	10/20/2006	10:10	3	X		2			1		X					X	X					X			X					X
03	Monitor Well #3	10/20/2006	13:00	3	X		2			1		X					X	X					X			X					X
04	Monitor Well #4	10/20/2006	14:10	3	X		2			1		X					X	X					X			X					X
05	Monitor Well #5	10/20/2006	9:05	3	X		2			1		X					X	X					X			X					X

Special Instructions:
PLEASE Email RESULTS TO: kpope@riceswd.com; mfranks@riceswd.com
rozanne@valornet.com

Sample Containers Intact? Y N
Labels on container? Y N
Custody Seals: Containers / Cooler
Temperature Upon Receipt:

Laboratory Comments:
4.0

Relinquished by:	Date	Time	Received by:	Date	Time
Rozanne Johnson	10-23-06	6:20	James Johnson	10-23-06	6:11
Relinquished by: James Johnson	10-23-06	12:00	Received by ELOT:	10/23/06	12:00

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Rice Dp.

Date/ Time: 10/23/06 12:00

Lab ID # : 52300f

Initials: UK

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	4.0 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken:

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Kristen Farris-Pope
Rice Operating Company
122 W Taylor Street
Hobbs, NM, 88240

Report Date: August 17, 2006

Work Order: 6072814

Project Location: Lea County,NM
Project Name: EME Junction M-16-1
Project Number: EME Junction M-16-1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
97135	MW-1	water	2006-07-25	08:45	2006-07-26
97136	MW-2	water	2006-07-25	09:40	2006-07-26
97137	MW-3	water	2006-07-25	10:35	2006-07-26
97138	MW-4	water	2006-07-25	11:55	2006-07-26
97139	MW-5	water	2006-07-25	13:10	2006-07-26

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 97135 - MW-1

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	28763	Date Analyzed:	2006-08-07	Analyzed By:	LJ
Prep Batch:	25162	Sample Preparation:	2006-08-07	Prepared By:	LJ

Parameter	Flag	RL Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		**386**	mg/L as CaCo3	1	4.00
Total Alkalinity		**386**	mg/L as CaCo3	1	4.00

Sample: 97135 - MW-1

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	28457	Date Analyzed:	2006-07-28	Analyzed By:	KB
Prep Batch:	24898	Sample Preparation:	2006-07-28	Prepared By:	KB

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0904	mg/L	1	0.100	90	66.2 - 127.7
4-Bromofluorobenzene (4-BFB)	[1]	0.0651	mg/L	1	0.100	65	70.6 - 129.2

Sample: 97135 - MW-1

Analysis:	Cations	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	28607	Date Analyzed:	2006-08-02	Analyzed By:	TP
Prep Batch:	24949	Sample Preparation:	2006-07-31	Prepared By:	TS

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Calcium		**302**	mg/L	10	0.500
Dissolved Potassium		**52.2**	mg/L	1	1.00
Dissolved Magnesium		**188**	mg/L	10	1.00
Dissolved Sodium		**1660**	mg/L	100	1.00

Sample: 97135 - MW-1

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	28552	Date Analyzed:	2006-07-31	Analyzed By:	WB
Prep Batch:	24973	Sample Preparation:	2006-07-29	Prepared By:	WB

[1] BFB surrogate recovery outside normal limits. ICV/CCV and TFT surrogate recovery show the method to be in control.

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**1830**		mg/L	50	0.500
Sulfate		**2010**		mg/L	50	0.500

Sample: 97135 - MW-1

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	28666	Date Analyzed:	2006-08-01	Analyzed By:	SM
Prep Batch:	25064	Sample Preparation:	2009-07-31	Prepared By:	SM

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Dissolved Solids		**6435**		mg/L	5	10.00

Sample: 97136 - MW-2

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	28763	Date Analyzed:	2006-08-07	Analyzed By:	LJ
Prep Batch:	25162	Sample Preparation:	2006-08-07	Prepared By:	LJ

Parameter	Flag	Result	RL	Units	Dilution	RL
Hydroxide Alkalinity		<1.00		mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00		mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		**338**		mg/L as CaCo3	1	4.00
Total Alkalinity		**338**		mg/L as CaCo3	1	4.00

Sample: 97136 - MW-2

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	28457	Date Analyzed:	2006-07-28	Analyzed By:	KB
Prep Batch:	24898	Sample Preparation:	2006-07-28	Prepared By:	KB

Parameter	Flag	Result	RL	Units	Dilution	RL
MTBE		<0.00100		mg/L	1	0.00100
Benzene		<0.00100		mg/L	1	0.00100
Toluene		<0.00100		mg/L	1	0.00100
Ethylbenzene		<0.00100		mg/L	1	0.00100
Xylene		<0.00100		mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0895	mg/L	1	0.100	90	66.2 - 127.7
4-Bromofluorobenzene (4-BFB)	[2]	0.0621	mg/L	1	0.100	62	70.6 - 129.2

[2]BFB surrogate recovery outside normal limits. ICV/CCV and TFT surrogate recovery show the method to be in control.

Sample: 97136 - MW-2

Analysis:	Cations	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	28607	Date Analyzed:	2006-08-02	Analyzed By:	TP
Prep Batch:	24949	Sample Preparation:	2006-07-31	Prepared By:	TS

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Calcium		**389**		mg/L	10	0.500
Dissolved Potassium		**60.4**		mg/L	1	1.00
Dissolved Magnesium		**244**		mg/L	10	1.00
Dissolved Sodium		**1830**		mg/L	100	1.00

Sample: 97136 - MW-2

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	28552	Date Analyzed:	2006-07-31	Analyzed By:	WB
Prep Batch:	24973	Sample Preparation:	2006-07-29	Prepared By:	WB

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**2240**		mg/L	50	0.500
Sulfate		**2440**		mg/L	50	0.500

Sample: 97136 - MW-2

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	28667	Date Analyzed:	2006-08-01	Analyzed By:	SM
Prep Batch:	25065	Sample Preparation:	2009-07-31	Prepared By:	SM

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Dissolved Solids		**7535**		mg/L	5	10.00

Sample: 97137 - MW-3

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	28763	Date Analyzed:	2006-08-07	Analyzed By:	LJ
Prep Batch:	25162	Sample Preparation:	2006-08-07	Prepared By:	LJ

Parameter	Flag	Result	RL	Units	Dilution	RL
Hydroxide Alkalinity		<1.00		mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00		mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		**404**		mg/L as CaCo3	1	4.00
Total Alkalinity		**404**		mg/L as CaCo3	1	4.00

Sample: 97137 - MW-3

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	28457	Date Analyzed:	2006-07-28	Analyzed By:	KB
Prep Batch:	24898	Sample Preparation:	2006-07-28	Prepared By:	KB

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.00100		mg/L	1	0.00100
Toluene		<0.00100		mg/L	1	0.00100
Ethylbenzene		<0.00100		mg/L	1	0.00100
Xylene		<0.00100		mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0887	mg/L	1	0.100	89	66.2 - 127.7
4-Bromofluorobenzene (4-BFB)	[3]	0.0596	mg/L	1	0.100	60	70.6 - 129.2

Sample: 97137 - MW-3

Analysis:	Cations	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	28607	Date Analyzed:	2006-08-02	Analyzed By:	TP
Prep Batch:	24949	Sample Preparation:	2006-07-31	Prepared By:	TS

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Calcium		**343**		mg/L	10	0.500
Dissolved Potassium		**60.1**		mg/L	1	1.00
Dissolved Magnesium		**228**		mg/L	10	1.00
Dissolved Sodium		**1900**		mg/L	100	1.00

Sample: 97137 - MW-3

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	29104 [a]	Date Analyzed:	2006-08-16	Analyzed By:	WB
Prep Batch:	25429	Sample Preparation:	2006-08-15	Prepared By:	WB

[a]Matrix not reported %IA Cl is 124 and SO4 123 and RPD is 2 for CL and 2 for SO4.

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**2940**		mg/L	100	0.500
Sulfate		**2620**		mg/L	100	0.500

Sample: 97137 - MW-3

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	28667	Date Analyzed:	2006-08-01	Analyzed By:	SM
Prep Batch:	25065	Sample Preparation:	2009-07-31	Prepared By:	SM

[3]BFB surrogate recovery outside normal limits. ICV/CCV and TFT surrogate recovery show the method to be in control.

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		**7840**	mg/L	10	10.00

Sample: 97138 - MW-4

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	28763	Date Analyzed:	2006-08-07	Analyzed By:	LJ
Prep Batch:	25162	Sample Preparation:	2006-08-07	Prepared By:	LJ

Parameter	Flag	RL Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		**410**	mg/L as CaCo3	1	4.00
Total Alkalinity		**410**	mg/L as CaCo3	1	4.00

Sample: 97138 - MW-4

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	28457	Date Analyzed:	2006-07-28	Analyzed By:	KB
Prep Batch:	24898	Sample Preparation:	2006-07-28	Prepared By:	KB

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.00100	mg/L	1	0.00100
Toluene		<0.00100	mg/L	1	0.00100
Ethylbenzene		<0.00100	mg/L	1	0.00100
Xylene		<0.00100	mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0888	mg/L	1	0.100	89	66.2 - 127.7
4-Bromofluorobenzene (4-BFB)	[4]	0.0603	mg/L	1	0.100	60	70.6 - 129.2

Sample: 97138 - MW-4

Analysis:	Cations	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	28607	Date Analyzed:	2006-08-02	Analyzed By:	TP
Prep Batch:	24949	Sample Preparation:	2006-07-31	Prepared By:	TS

Parameter	Flag	RL Result	Units	Dilution	RL
Dissolved Calcium		**346**	mg/L	10	0.500
Dissolved Potassium		**54.9**	mg/L	1	1.00
Dissolved Magnesium		**251**	mg/L	10	1.00
Dissolved Sodium		**1840**	mg/L	100	1.00

[4]BFB surrogate recovery outside normal limits. ICV/CCV and TFT surrogate recovery show the method to be in control.

Sample: 97138 - MW-4

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	29113	Date Analyzed:	2006-08-16	Analyzed By:	WB
Prep Batch:	25430	Sample Preparation:	2006-08-15	Prepared By:	WB

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**2500**		mg/L	100	0.500
Sulfate		**2530**		mg/L	100	0.500

Sample: 97138 - MW-4

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	28667	Date Analyzed:	2006-08-01	Analyzed By:	SM
Prep Batch:	25065	Sample Preparation:	2009-07-31	Prepared By:	SM

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Dissolved Solids		**7030**		mg/L	10	10.00

Sample: 97139 - MW-5

Analysis:	Alkalinity	Analytical Method:	SM 2320B	Prep Method:	N/A
QC Batch:	28763	Date Analyzed:	2006-08-07	Analyzed By:	LJ
Prep Batch:	25162	Sample Preparation:	2006-08-07	Prepared By:	LJ

Parameter	Flag	Result	RL	Units	Dilution	RL
Hydroxide Alkalinity		<1.00		mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00		mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		**384**		mg/L as CaCo3	1	4.00
Total Alkalinity		**384**		mg/L as CaCo3	1	4.00

Sample: 97139 - MW-5

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	28457	Date Analyzed:	2006-07-28	Analyzed By:	KB
Prep Batch:	24898	Sample Preparation:	2006-07-28	Prepared By:	KB

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.00100		mg/L	1	0.00100
Toluene		<0.00100		mg/L	1	0.00100
Ethylbenzene		<0.00100		mg/L	1	0.00100
Xylene		<0.00100		mg/L	1	0.00100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0882	mg/L	1	0.100	88	66.2 - 127.7

continued...

sample continued ...

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)	[5]	0.0601	mg/L	1	0.100	60	70.6 - 129.2

Sample: 97139 - MW-5

Analysis:	Cations	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	28607	Date Analyzed:	2006-08-02	Analyzed By:	TP
Prep Batch:	24949	Sample Preparation:	2006-07-31	Prepared By:	TS

Parameter	Flag	Result	RL	Units	Dilution	RL
Dissolved Calcium		**306**		mg/L	10	0.500
Dissolved Potassium		**56.6**		mg/L	1	1.00
Dissolved Magnesium		**209**		mg/L	10	1.00
Dissolved Sodium		**1650**		mg/L	100	1.00

Sample: 97139 - MW-5

Analysis:	Ion Chromatography	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	28553	Date Analyzed:	2006-07-31	Analyzed By:	WB
Prep Batch:	24974	Sample Preparation:	2006-07-29	Prepared By:	WB

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**2400**		mg/L	50	0.500
Sulfate		**2310**		mg/L	50	0.500

Sample: 97139 - MW-5

Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	28667	Date Analyzed:	2006-08-01	Analyzed By:	SM
Prep Batch:	25065	Sample Preparation:	2009-07-31	Prepared By:	SM

Parameter	Flag	Result	RL	Units	Dilution	RL
Total Dissolved Solids		**6245**		mg/L	5	10.00

Method Blank (1) QC Batch: 28457

QC Batch:	28457	Date Analyzed:	2006-07-28	Analyzed By:	KB
Prep Batch:	24898	QC Preparation:	2006-07-28	Prepared By:	KB

continued ...

[5]BFB surrogate recovery outside normal limits. *ICV/CCV* and TFT surrogate recovery show the method to be in control.

method blank continued . . .

Parameter	Flag	MDL Result	Units	RL

Parameter	Flag	MDL Result	Units	RL
MTBE		<0.000193	mg/L	0.01
Benzene		<0.000255	mg/L	0.001
Toluene		<0.000210	mg/L	0.001
Ethylbenzene		<0.000317	mg/L	0.001
Xylene		<0.000603	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0915	mg/L	1	0.100	92	79.3 - 116
4-Bromofluorobenzene (4-BFB)		0.0654	mg/L	1	0.100	65	47.6 - 122

Method Blank (1) QC Batch: 28552

QC Batch:	28552	Date Analyzed:	2006-07-31	Analyzed By:	WB
Prep Batch:	24973	QC Preparation:	2006-07-29	Prepared By:	WB

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.0181	mg/L	0.5
Sulfate		<0.0485	mg/L	0.5

Method Blank (1) QC Batch: 28553

QC Batch:	28553	Date Analyzed:	2006-07-31	Analyzed By:	WB
Prep Batch:	24974	QC Preparation:	2006-07-29	Prepared By:	WB

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.0181	mg/L	0.5
Sulfate		<0.0485	mg/L	0.5

Method Blank (1) QC Batch: 28607

QC Batch:	28607	Date Analyzed:	2006-08-02	Analyzed By:	TP
Prep Batch:	24949	QC Preparation:	2006-07-31	Prepared By:	TS

Parameter	Flag	MDL Result	Units	RL
Dissolved Calcium		0.175	mg/L	0.5
Dissolved Potassium		0.614	mg/L	1
Dissolved Magnesium		0.935	mg/L	1
Dissolved Sodium		0.947	mg/L	1

Method Blank (1) QC Batch: 28666

QC Batch:	28666	Date Analyzed:	2006-08-01	Analyzed By:	SM
Prep Batch:	25064	QC Preparation:	2006-07-31	Prepared By:	SM

Parameter	Flag	MDL Result	Units	RL
Total Dissolved Solids		<5.000	mg/L	10

Method Blank (1) QC Batch: 28667

QC Batch:	28667	Date Analyzed:	2006-08-01	Analyzed By:	SM
Prep Batch:	25065	QC Preparation:	2006-07-31	Prepared By:	SM

Parameter	Flag	MDL Result	Units	RL
Total Dissolved Solids		<5.000	mg/L	10

Method Blank (1) QC Batch: 28763

QC Batch:	28763	Date Analyzed:	2006-08-07	Analyzed By:	LJ
Prep Batch:	25162	QC Preparation:	2006-08-07	Prepared By:	LJ

Parameter	Flag	MDL Result	Units	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.00	mg/L as CaCo3	4
Total Alkalinity		<4.00	mg/L as CaCo3	4

Method Blank (1) QC Batch: 29104

QC Batch:	29104	Date Analyzed:	2006-08-16	Analyzed By:	WB
Prep Batch:	25429	QC Preparation:	2006-08-15	Prepared By:	WB

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.0181	mg/L	0.5
Sulfate		<0.0485	mg/L	0.5

Method Blank (1) QC Batch: 29113

QC Batch:	29113	Date Analyzed:	2006-08-16	Analyzed By:	WB
Prep Batch:	25430	QC Preparation:	2006-08-15	Prepared By:	WB

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.0181	mg/L	0.5
Sulfate		<0.0485	mg/L	0.5

Duplicates (1)

QC Batch: 28666 | Date Analyzed: 2006-08-01 | Analyzed By: SM
Prep Batch: 25064 | QC Preparation: 2006-07-31 | Prepared By: SM

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	7235	6435	mg/L	5	12	17.2

Duplicates (1)

QC Batch: 28667 | Date Analyzed: 2006-08-01 | Analyzed By: SM
Prep Batch: 25065 | QC Preparation: 2006-07-31 | Prepared By: SM

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	1344	1298	mg/L	2	4	17.2

Duplicates (1)

QC Batch: 28763 | Date Analyzed: 2006-08-07 | Analyzed By: LJ
Prep Batch: 25162 | QC Preparation: 2006-08-07 | Prepared By: LJ

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	20
Carbonate Alkalinity	<1.00	<1.00	mg/L as CaCo3	1	0	20
Bicarbonate Alkalinity	170	174	mg/L as CaCo3	1	2	12.6
Total Alkalinity	170	174	mg/L as CaCo3	1	2	11.5

Laboratory Control Spike (LCS-1)

QC Batch: 28457 | Date Analyzed: 2006-07-28 | Analyzed By: KB
Prep Batch: 24898 | QC Preparation: 2006-07-28 | Prepared By: KB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
MTBE	0.0958	mg/L	1	0.100	<0.000193	96	82.3 - 110
Benzene	0.0958	mg/L	1	0.100	<0.000255	96	82.2 - 119
Toluene	0.0943	mg/L	1	0.100	<0.000210	94	81.2 - 119
Ethylbenzene	0.0926	mg/L	1	0.100	<0.000317	93	80 - 122
Xylene	0.284	mg/L	1	0.300	<0.000603	95	81.3 - 122

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
MTBE	0.0930	mg/L	1	0.100	<0.000193	96	82.3 - 110	3	20
Benzene	0.0950	mg/L	1	0.100	<0.000255	96	82.2 - 119	1	20
Toluene	0.0940	mg/L	1	0.100	<0.000210	94	81.2 - 119	0	20

continued ...

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene	0.0925	mg/L	1	0.100	<0.000317	93	80 - 122	0	20
Xylene	0.284	mg/L	1	0.300	<0.000603	95	81.3 - 122	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0910	0.0909	mg/L	1	0.100	91	91	81.8 - 114
4-Bromofluorobenzene (4-BFB)	0.101	0.101	mg/L	1	0.100	101	101	72.7 - 116

Laboratory Control Spike (LCS-1)

QC Batch: 28552 | Date Analyzed: 2006-07-31 | Analyzed By: WB
Prep Batch: 24973 | QC Preparation: 2006-07-29 | Prepared By: WB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11.8	mg/L	1	12.5	<0.0181	95	90 - 110
Sulfate	11.9	mg/L	1	12.5	<0.0485	95	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	12.0	mg/L	1	12.5	<0.0181	95	90 - 110	1	20
Sulfate	12.0	mg/L	1	12.5	<0.0485	95	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 28553 | Date Analyzed: 2006-07-31 | Analyzed By: WB
Prep Batch: 24974 | QC Preparation: 2006-07-29 | Prepared By: WB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	12.0	mg/L	1	12.5	<0.0181	96	90 - 110
Sulfate	12.1	mg/L	1	12.5	<0.0485	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	12.0	mg/L	1	12.5	<0.0181	96	90 - 110	0	20
Sulfate	12.0	mg/L	1	12.5	<0.0485	97	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 28607 | Date Analyzed: 2006-08-02 | Analyzed By: TP
Prep Batch: 24949 | QC Preparation: 2006-07-31 | Prepared By: TS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium	53.7	mg/L	1	50.0	<0.0950	107	85 - 115
Dissolved Potassium	49.7	mg/L	1	50.0	<0.377	99	85 - 113
Dissolved Magnesium	49.5	mg/L	1	50.0	<0.704	99	85 - 113
Dissolved Sodium	48.7	mg/L	1	50.0	<0.261	97	85 - 111

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium	52.6	mg/L	1	50.0	<0.0950	107	85 - 115	2	20
Dissolved Potassium	49.0	mg/L	1	50.0	<0.377	99	85 - 113	1	20
Dissolved Magnesium	51.4	mg/L	1	50.0	<0.704	99	85 - 113	4	20
Dissolved Sodium	49.8	mg/L	1	50.0	<0.261	97	85 - 111	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 29104 | Date Analyzed: 2006-08-16 | Analyzed By: WB
Prep Batch: 25429 | QC Preparation: 2006-08-15 | Prepared By: WB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11.9	mg/L	1	12.5	<0.0181	95	90 - 110
Sulfate	11.3	mg/L	1	12.5	<0.0485	90	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11.6	mg/L	1	12.5	<0.0181	95	90 - 110	3	20
Sulfate	11.3	mg/L	1	12.5	<0.0485	90	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 29113 | Date Analyzed: 2006-08-16 | Analyzed By: WB
Prep Batch: 25430 | QC Preparation: 2006-08-15 | Prepared By: WB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11.8	mg/L	1	12.5	<0.0181	94	90 - 110
Sulfate	11.3	mg/L	1	12.5	<0.0485	90	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11.9	mg/L	1	12.5	<0.0181	94	90 - 110	1	20
Sulfate	11.5	mg/L	1	12.5	<0.0485	90	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 97188

QC Batch: 28457
Prep Batch: 24898

Date Analyzed: 2006-07-28
QC Preparation: 2006-07-28

Analyzed By: KB
Prepared By: KB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
MTBE	0.0968	mg/L	1	0.100	<0.000193	97	68.6 - 122
Benzene	0.0965	mg/L	1	0.100	<0.000255	96	70.9 - 126
Toluene	0.0961	mg/L	1	0.100	<0.000210	96	70.8 - 125
Ethylbenzene	0.0956	mg/L	1	0.100	<0.000317	96	74.8 - 125
Xylene	0.291	mg/L	1	0.300	<0.000603	97	75.7 - 126

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
MTBE	[6]	NA	mg/L	1	0.100	<0.000193	0	68.6 - 122	200	20
Benzene	[7]	NA	mg/L	1	0.100	<0.000255	0	70.9 - 126	200	20
Toluene	[8]	NA	mg/L	1	0.100	<0.000210	0	70.8 - 125	200	20
Ethylbenzene	[9]	NA	mg/L	1	0.100	<0.000317	0	74.8 - 125	200	20
Xylene	[10]	NA	mg/L	1	0.300	<0.000603	0	75.7 - 126	200	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	[11]	0.0916	NA	mg/L	1	0.1	92	0	73.6 - 121
4-Bromofluorobenzene (4-BFB)	[12]	0.102	NA	mg/L	1	0.1	102	0	81.8 - 114

Matrix Spike (MS-1) Spiked Sample: 97132

QC Batch: 28552
Prep Batch: 24973

Date Analyzed: 2006-07-31
QC Preparation: 2006-07-29

Analyzed By: WB
Prepared By: WB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	8800	mg/L	500	12.5	2890	94	25.4 - 171
Sulfate	6870	mg/L	500	12.5	566	101	0 - 677

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	8820	mg/L	500	12.5	2890	95	25.4 - 171	0	20
Sulfate	6780	mg/L	500	12.5	566	99	0 - 677	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

[6]RPD is out of range because a matrix spike duplicate was not prepared.
[7]RPD is out of range because a matrix spike duplicate was not prepared.
[8]RPD is out of range because a matrix spike duplicate was not prepared.
[9]RPD is out of range because a matrix spike duplicate was not prepared.
[10]RPD is out of range because a matrix spike duplicate was not prepared.
[11]RPD is out of range because a matrix spike duplicate was not prepared.
[12]RPD is out of range because a matrix spike duplicate was not prepared.

Matrix Spike (MS-1) Spiked Sample: 96738

QC Batch: 28553
Prep Batch: 24974

Date Analyzed: 2006-07-31
QC Preparation: 2006-07-29

Analyzed By: WB
Prepared By: WB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	280	mg/L	5	12.5	223	91	25.4 - 171
Sulfate	451	mg/L	5	12.5	400	82	0 - 677

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	274	mg/L	5	12.5	223	82	25.4 - 171	2	20
Sulfate	443	mg/L	5	12.5	400	69	0 - 677	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 97133

QC Batch: 28607
Prep Batch: 24949

Date Analyzed: 2006-08-02
QC Preparation: 2006-07-31

Analyzed By: TP
Prepared By: TS

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Calcium		420	mg/L	1	50.0	362	116	68.4 - 138
Dissolved Potassium	[13]	95.5	mg/L	1	50.0	56.3	78	82 - 129
Dissolved Magnesium		344	mg/L	1	50.0	291	106	61.2 - 135
Dissolved Sodium	[14]	1420	mg/L	100	50.0	1320	2	81.8 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dissolved Calcium		416	mg/L	1	50.0	362	108	68.4 - 138	1	20
Dissolved Potassium		101	mg/L	1	50.0	56.3	89	82 - 129	6	20
Dissolved Magnesium		333	mg/L	1	50.0	291	84	61.2 - 135	3	20
Dissolved Sodium	[15]	1480	mg/L	100	50.0	1320	3	81.8 - 125	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 97138

QC Batch: 29113
Prep Batch: 25430

Date Analyzed: 2006-08-16
QC Preparation: 2006-08-15

Analyzed By: WB
Prepared By: WB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	3680	mg/L	100	12.5	2497	95	25.4 - 171

continued ...

[13]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[14]Matrix spike recoveries out of control limits due to matrix spike being diluted out. Use LCS/LCSD to demonstrate analysis is under control.
[15]Matrix spike recoveries out of control limits due to matrix spike being diluted out. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfate	3760	mg/L	100	12.5	2530	98	0 - 677

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	3690	mg/L	100	12.5	2497	96	25.4 - 171	0	20
Sulfate	3750	mg/L	100	12.5	2530	98	0 - 677	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 28457 Date Analyzed: 2006-07-28 Analyzed By: KB

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.100	0.0936	94	85 - 115	2006-07-28
Benzene		mg/L	0.100	0.0950	95	85 - 115	2006-07-28
Toluene		mg/L	0.100	0.0942	94	85 - 115	2006-07-28
Ethylbenzene		mg/L	0.100	0.0926	93	85 - 115	2006-07-28
Xylene		mg/L	0.300	0.285	95	85 - 115	2006-07-28

Standard (CCV-1)

QC Batch: 28457 Date Analyzed: 2006-07-28 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.100	0.0953	95	85 - 115	2006-07-28
Benzene		mg/L	0.100	0.0963	96	85 - 115	2006-07-28
Toluene		mg/L	0.100	0.0945	94	85 - 115	2006-07-28
Ethylbenzene		mg/L	0.100	0.0930	93	85 - 115	2006-07-28
Xylene		mg/L	0.300	0.285	95	85 - 115	2006-07-28

Standard (ICV-1)

QC Batch: 28552 Date Analyzed: 2006-07-31 Analyzed By: WB

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.9	95	90 - 110	2006-07-31
Sulfate		mg/L	12.5	12.1	97	90 - 110	2006-07-31

Standard (CCV-1)

QC Batch: 28552 Date Analyzed: 2006-07-31 Analyzed By: WB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	12.1	97	90 - 110	2006-07-31
Sulfate		mg/L	12.5	12.0	96	90 - 110	2006-07-31

Standard (ICV-1)

QC Batch: 28553 Date Analyzed: 2006-07-31 Analyzed By: WB

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	12.1	97	90 - 110	2006-07-31
Sulfate		mg/L	12.5	12.0	96	90 - 110	2006-07-31

Standard (CCV-1)

QC Batch: 28553 Date Analyzed: 2006-07-31 Analyzed By: WB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	12.2	98	90 - 110	2006-07-31
Sulfate		mg/L	12.5	12.1	97	90 - 110	2006-07-31

Standard (ICV-1)

QC Batch: 28607 Date Analyzed: 2006-08-02 Analyzed By: TP

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	50.0	50.5	101	90 - 110	2006-08-02
Dissolved Potassium		mg/L	50.0	48.6	97	90 - 110	2006-08-02
Dissolved Magnesium		mg/L	50.0	50.7	101	90 - 110	2006-08-02
Dissolved Sodium		mg/L	50.0	50.4	101	90 - 110	2006-08-02

Standard (CCV-1)

QC Batch: 28607 Date Analyzed: 2006-08-02 Analyzed By: TP

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	50.0	50.8	102	90 - 110	2006-08-02
Dissolved Potassium		mg/L	50.0	47.2	94	90 - 110	2006-08-02
Dissolved Magnesium		mg/L	50.0	49.0	98	90 - 110	2006-08-02
Dissolved Sodium		mg/L	50.0	48.9	98	90 - 110	2006-08-02

Standard (ICV-1)

QC Batch: 28666 Date Analyzed: 2006-08-01 Analyzed By: SM

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	982.0	98	90 - 110	2006-08-01

Standard (CCV-1)

QC Batch: 28666 Date Analyzed: 2006-08-01 Analyzed By: SM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1003	100	90 - 110	2006-08-01

Standard (ICV-1)

QC Batch: 28667 Date Analyzed: 2006-08-01 Analyzed By: SM

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	999.0	100	90 - 110	2006-08-01

Standard (CCV-1)

QC Batch: 28667 Date Analyzed: 2006-08-01 Analyzed By: SM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1003	100	90 - 110	2006-08-01

Standard (ICV-1)

QC Batch: 28763 Date Analyzed: 2006-08-07 Analyzed By: LJ

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Alkalinity		mg/L as CaCo3	250	236	94	90 - 110	2006-08-07

Standard (CCV-1)

QC Batch: 28763 Date Analyzed: 2006-08-07 Analyzed By: LJ

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Alkalinity		mg/L as CaCo3	250	240	96	90 - 110	2006-08-07

Standard (ICV-1)

QC Batch: 29104 Date Analyzed: 2006-08-16 Analyzed By: WB

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	12.5	100	90 - 110	2006-08-16
Sulfate		mg/L	12.5	12.2	98	90 - 110	2006-08-16

Standard (CCV-1)

QC Batch: 29104 Date Analyzed: 2006-08-16 Analyzed By: WB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.6	93	90 - 110	2006-08-16
Sulfate		mg/L	12.5	11.3	90	90 - 110	2006-08-16

Standard (ICV-1)

QC Batch: 29113 Date Analyzed: 2006-08-16 Analyzed By: WB

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.6	93	90 - 110	2006-08-16
Sulfate		mg/L	12.5	11.3	90	90 - 110	2006-08-16

Standard (CCV-1)

QC Batch: 29113 Date Analyzed: 2006-08-16 Analyzed By: WB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	11.8	94	90 - 110	2006-08-16
Sulfate		mg/L	12.5	11.4	91	90 - 110	2006-08-16

6701 Aberdeen Ave, Ste 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon Way, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 6072814

Company Name:	Phone #:
RICE Operating Company	(505)393-9174
Address: (Street, City, Zip)	Fax #:
122 W Taylor Street - Hobbs, New Mexico 88240	(505) 397-1471
Contact Person:	
Kristin Farris - Pope, Project Scientist	kpope@riceswd.com
Invoice to: (If different from above)	
Project #: None Given	Project Name: EME Junction M-16-1
Project Location: Lea County - New Mexico	Sampler Signature: Rozanne Johnson (505)631-9310 rozanne@valornet.com

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCL	HNO_3	$NaHSO_4$	H_2SO_4	ICE	NONE	SAMPLING: DATE 2006	TIME
97135	Monitor Well #1	2	40 ml	X					X				X		7-25	8:45
	Monitor Well #1	1	1L	X									X		7-25	8:45
36	Monitor Well #2	2	40 ml	X					X				X		7-25	9:40
	Monitor Well #2	1	1L	X									X		7-25	9:40
37	Monitor Well #3	2	40 ml	X					X				X		7-25	10:35
	Monitor Well #3	1	1L	X									X		7-25	10:35
38	Monitor Well #4	2	40 ml	X					X				X		7-25	11:55
	Monitor Well #4	1	1L	X									X		7-25	11:55
39	Monitor Well #5	2	40 ml	X					X				X		7-25	13:10
	Monitor Well #5	1	1L	X									X		7-25	13:10

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SSSSO4, CO3, HCO3)	Total Dissolved Solids		Turn Around Time if different from standard	Hold
	X															X	X	X			
																X	X	X			
	X																				
																X	X	X			
	X																				
																X	X	X			
	X																				
																X	X	X			
	X																				
																X	X	X			

Relinquished by: Rozanne Johnson Date: 7/26/06 Time: 13:00
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received at Laboratory by: Megan McCord Date: 7/26/06 Time: 1345

LAB USE ONLY
Intact (Y/N)
Headspace Y/N
Temp 4°C
Log-in Review

REMARKS: Please email the results to:
kpope@riceswd.com
mfranks @ riceswd.com
rozanne@valornet.com
☐ check if special reporting limits needed

Carrier # Blue 769176653

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of COC

Cation-Anion Balance Sheet

DATE: 8/16/2006

Sample #	Calcium ppm	Magnesium ppm	Sodium ppm	Potassium ppm	Alkalinity ppm	Sulfate ppm	Chloride ppm	Nitrate ppm	Fluoride ppm	TDS ppm	EC µMHOs/cm
97135	302	188	1660	52.2	386	2010	1830			6435	
97136	389	244	1830	60.4	338	2440	2240			7535	
97137	343	228	1900	60.1	404	2620	2940			7840	
97138	346	251	1840	54.9	410	2530	2500			7030	
97139	306	209	1650	56.5	384	2310	2400			6240	

Sample #	Calcium in meq/L	Magnesium in meq/L	Sodium in meq/L	Potassium in meq/L	Alkalinity in meq/L	Sulfate in meq/L	Chloride in meq/L	Nitrate in meq/L	Fluoride in meq/L	**Total Cations in meq/L**	**Total Anions in meq/L**	**Percentage Error**
97135	15.07	15.47	72.21	1.34	7.72	41.85	51.62			104.09	101.19	2.8
97136	19.41	20.08	79.61	1.55	6.76	50.80	63.19			120.64	120.75	0.1
97137	17.12	18.76	82.65	1.54	8.08	54.55	82.94			120.07	145.57	19.2
97138	17.27	20.65	80.04	1.40	8.20	52.67	70.53			119.36	131.40	9.6
97139	15.27	17.20	71.78	1.45	7.68	48.09	67.70			105.69	123.48	15.5

	EC/Cation	EC/Anion				
97135			range	0	to	0
97136			range	0	to	0
97137			range	0	to	0
97138			range	0	to	0
97139			range	0	to	0

TDS/EC	TDS/Cat	TDS/Anion	
	0.62	0.64	needs to be 0.55-0.77
	0.62	0.62	needs to be 0.55-0.77
	0.65	0.54	needs to be 0.55-0.77
	0.59	0.54	needs to be 0.55-0.77
	0.59	0.51	needs to be 0.55-0.77

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Kristin Farris-Pope

Rice Operating Co.

122 W. Taylor

Hobbs, NM 88240

Project: EME Jct. M-16-1

Project Number: None Given

Location: Lea County

Lab Order Number: 6F15001

Report Date: 06/26/06

Rice Operating Co. 122 W. Taylor Hobbs NM, 88240	Project: EME Jct. M-16-1 Project Number: None Given Project Manager: Kristin Farris-Pope	Fax: (505) 397-1471

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well #4	6F15001-01	Water	06/13/06 09:45	06/15/06 07:50
Monitor Well #5	6F15001-02	Water	06/13/06 11:00	06/15/06 07:50

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

Rice Operating Co. 122 W. Taylor Hobbs NM, 88240	Project: EME Jct. M-16-1 Project Number: None Given Project Manager: Kristin Farris-Pope	Fax: (505) 397-1471

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #4 (6F15001-01) Water									
Benzene	ND	0.00100	mg/L	1	EF61921	06/19/06	06/20/06	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		*101 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*95.5 %*	*80-120*		"	"	"	"	
Monitor Well #5 (6F15001-02) Water									
Benzene	ND	0.00100	mg/L	1	EF61921	06/19/06	06/20/06	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		*106 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.5 %*	*80-120*		"	"	"	"	

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

Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #4 (6F15001-01) Water									
Total Alkalinity	**386**	2.00	mg/L	1	EF62316	06/22/06	06/22/06	EPA 310.1M	
Chloride	**2680**	50.0	"	100	EF61712	06/17/06	06/17/06	EPA 300.0	
Total Dissolved Solids	**7820**	5.00	"	1	EF61918	06/15/06	06/16/06	EPA 160.1	
Sulfate	**2220**	50.0	"	100	EF61712	06/17/06	06/17/06	EPA 300.0	
Monitor Well #5 (6F15001-02) Water									
Total Alkalinity	**344**	2.00	mg/L	1	EF62316	06/22/06	06/22/06	EPA 310.1M	
Chloride	**2350**	50.0	"	100	EF61712	06/17/06	06/17/06	EPA 300.0	
Total Dissolved Solids	**6760**	5.00	"	1	EF61918	06/15/06	06/16/06	EPA 160.1	
Sulfate	**1920**	50.0	"	100	EF61712	06/17/06	06/17/06	EPA 300.0	

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

Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

Total Metals by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #4 (6F15001-01) Water									
Calcium	**320**	0.500	mg/L	50	EF61505	06/15/06	06/15/06	EPA 200.7	
Magnesium	**229**	0.0500	"	"	"	"	"	"	
Potassium	**38.5**	0.500	"	10	"	"	"	"	
Sodium	**1760**	5.00	"	500	"	"	"	"	
Monitor Well #5 (6F15001-02) Water									
Calcium	**296**	0.500	mg/L	50	EF61505	06/15/06	06/15/06	EPA 200.7	
Magnesium	**206**	0.0500	"	"	"	"	"	"	
Potassium	**34.1**	0.500	"	10	"	"	"	"	
Sodium	**1790**	5.00	"	500	"	"	"	"	

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

Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

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 EF61921 - EPA 5030C (GC)										
Blank (EF61921-BLK1)				Prepared: 06/19/06 Analyzed: 06/20/06						
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	*38.4*		*ug/l*	*40.0*		*96.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*38.4*		"	*40.0*		*96.0*	*80-120*			
LCS (EF61921-BS1)				Prepared: 06/19/06 Analyzed: 06/20/06						
Benzene	0.0529	0.00100	mg/L	0.0500		106	80-120			
Toluene	0.0579	0.00100	"	0.0500		116	80-120			
Ethylbenzene	0.0565	0.00100	"	0.0500		113	80-120			
Xylene (p/m)	0.119	0.00100	"	0.100		119	80-120			
Xylene (o)	0.0589	0.00100	"	0.0500		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	*41.6*		*ug/l*	*40.0*		*104*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*40.7*		"	*40.0*		*102*	*80-120*			
Calibration Check (EF61921-CCV1)				Prepared: 06/19/06 Analyzed: 06/20/06						
Benzene	58.0		ug/l	50.0		116	80-120			
Toluene	59.2		"	50.0		118	80-120			
Ethylbenzene	57.5		"	50.0		115	80-120			
Xylene (p/m)	119		"	100		119	80-120			
Xylene (o)	59.0		"	50.0		118	80-120			
Surrogate: a,a,a-Trifluorotoluene	*44.1*		"	*40.0*		*110*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*38.4*		"	*40.0*		*96.0*	*80-120*			
Matrix Spike (EF61921-MS1)	**Source: 6F15001-01**			Prepared: 06/19/06 Analyzed: 06/20/06						
Benzene	0.0488	0.00100	mg/L	0.0500	ND	97.6	80-120			
Toluene	0.0539	0.00100	"	0.0500	ND	108	80-120			
Ethylbenzene	0.0501	0.00100	"	0.0500	ND	100	80-120			
Xylene (p/m)	0.115	0.00100	"	0.100	ND	115	80-120			
Xylene (o)	0.0576	0.00100	"	0.0500	ND	115	80-120			
Surrogate: a,a,a-Trifluorotoluene	*37.6*		*ug/l*	*40.0*		*94.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*41.7*		"	*40.0*		*104*	*80-120*			

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Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: EME Jct. M-16-1
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

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 EF61921 - EPA 5030C (GC)										
Matrix Spike Dup (EF61921-MSD1)	**Source: 6F15001-01**			Prepared: 06/19/06 Analyzed: 06/20/06						
Benzene	0.0484	0.00100	mg/L	0.0500	ND	96.8	80-120	0.823	20	
Toluene	0.0469	0.00100	"	0.0500	ND	93.8	80-120	14.1	20	
Ethylbenzene	0.0451	0.00100	"	0.0500	ND	90.2	80-120	10.3	20	
Xylene (p/m)	0.0979	0.00100	"	0.100	ND	97.9	80-120	16.1	20	
Xylene (o)	0.0497	0.00100	"	0.0500	ND	99.4	80-120	14.6	20	
Surrogate: a,a,a-Trifluorotoluene	*33.7*		*ug/l*	*40.0*		*84.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*39.1*		*"*	*40.0*		*97.8*	*80-120*			

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: EME Jct. M-16-1
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

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 EF61712 - General Preparation (WetChem)										
Blank (EF61712-BLK1)				Prepared & Analyzed: 06/17/06						
Chloride	ND	0.500	mg/L							
Sulfate	ND	0.500	"							
LCS (EF61712-BS1)				Prepared & Analyzed: 06/17/06						
Chloride	10.0		mg/L	10.0		100	80-120			
Sulfate	8.16		"	10.0		81.6	80-120			
Calibration Check (EF61712-CCV1)				Prepared & Analyzed: 06/17/06						
Chloride	10.9		mg/L	10.0		109	80-120			
Sulfate	10.5		"	10.0		105	80-120			
Duplicate (EF61712-DUP1)	**Source: 6F14013-01**			Prepared & Analyzed: 06/17/06						
Chloride	47.9	5.00	mg/L		48.8			1.86	20	
Sulfate	69.2	5.00	"		69.8			0.863	20	
Duplicate (EF61712-DUP2)	**Source: 6F15003-05**			Prepared & Analyzed: 06/18/06						
Chloride	198	5.00	mg/L		197			0.506	20	
Sulfate	154	5.00	"		152			1.31	20	
Matrix Spike (EF61712-MS1)	**Source: 6F14013-01**			Prepared & Analyzed: 06/17/06						
Chloride	157	5.00	mg/L	100	48.8	108	80-120			
Sulfate	154	5.00	"	100	69.8	84.2	75-125			
Matrix Spike (EF61712-MS2)	**Source: 6F15003-05**			Prepared & Analyzed: 06/18/06						
Sulfate	249	5.00	mg/L	100	152	97.0	75-125			
Chloride	301	5.00	"	100	197	104	80-120			

Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

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 EF61918 - Filtration Preparation										
Blank (EF61918-BLK1)				Prepared: 06/15/06 Analyzed: 06/16/06						
Total Dissolved Solids	ND	5.00	mg/L							
Duplicate (EF61918-DUP1)	**Source: 6F15001-01**			Prepared: 06/15/06 Analyzed: 06/16/06						
Total Dissolved Solids	7770	5.00	mg/L		7820			0.641	5	
Batch EF62316 - General Preparation (WetChem)										
Blank (EF62316-BLK1)				Prepared & Analyzed: 06/22/06						
Total Alkalinity	ND	2.00	mg/L							
Carbonate Alkalinity	ND	0.100	"							
Bicarbonate Alkalinity	ND	2.00	"							
Hydroxide Alkalinity	ND	0.100	"							
LCS (EF62316-BS1)				Prepared & Analyzed: 06/22/06						
Total Alkalinity	248	2.00	mg/L	250		99.2	85-115			
Duplicate (EF62316-DUP1)	**Source: 6F15001-01**			Prepared & Analyzed: 06/22/06						
Total Alkalinity	380	2.00	mg/L		386			1.57	20	
Carbonate Alkalinity	0.00	0.100	"		0.00				20	
Bicarbonate Alkalinity	380	2.00	"		386			1.57	20	
Hydroxide Alkalinity	0.00	0.100	"		0.00				20	
Duplicate (EF62316-DUP2)	**Source: 6F22003-01**			Prepared & Analyzed: 06/22/06						
Total Alkalinity	142	2.00	mg/L		144			1.40	20	
Carbonate Alkalinity	0.00	0.100	"		0.00				20	
Bicarbonate Alkalinity	142	2.00	"		144			1.40	20	
Hydroxide Alkalinity	0.00	0.100	"		0.00				20	

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

Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

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 EF62316 - General Preparation (WetChem)										
Reference (EF62316-SRM1)				Prepared & Analyzed: 06/22/06						
Total Alkalinity	78.0	2.00	mg/L	82.0		95.1	85-115			
Bicarbonate Alkalinity	78.0	2.00	"	82.0		95.1	85-115			

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Rice Operating Co.	Project: EME Jct. M-16-1	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

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 EF61505 - 6010B/No Digestion										
Blank (EF61505-BLK1)				Prepared & Analyzed: 06/15/06						
Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							
Calibration Check (EF61505-CCV1)				Prepared & Analyzed: 06/15/06						
Calcium	2.01		mg/L	2.00		100	85-115			
Magnesium	2.12		"	2.00		106	85-115			
Potassium	1.76		"	2.00		88.0	85-115			
Sodium	1.74		"	2.00		87.0	85-115			
Duplicate (EF61505-DUP1)	**Source: 6F15001-01**			Prepared & Analyzed: 06/15/06						
Calcium	316	0.500	mg/L		320			1.26	20	
Magnesium	231	0.0500	"		229			0.870	20	
Potassium	38.4	0.500	"		38.5			0.260	20	
Sodium	1740	5.00	"		1760			1.14	20	

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

Rice Operating Co.
122 W. Taylor
Hobbs NM, 88240

Project: EME Jct. M-16-1
Project Number: None Given
Project Manager: Kristin Farris-Pope

Fax: (505) 397-1471

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: 6/26/2006

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
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 Pope kpope@riceswd.com
Company Name: RICE Operating Company
Company Address: 122 W. Taylor Street
City/State/Zip: Hobbs, New Mexico 88240
Telephone No: (505) 393-9174 Fax No: (505) 397-1471
Sampler Signature: Rozanne Johnson (505) 631-9310
Email: rozanne@valornet.com

Project Name: EME Jct. M-16-1
Project #:
Project Loc: Lea County
PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl (2) 40 ml glass vials	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None (1) 1 Liter HDPE	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: TCLP:	Analyze For: TOTAL: TPH: 418.1 8015M 1005 1006	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	RCI	N.O.R.M.	Total Dissolved Solids				RUSH TAT (Pre-Schedule)	Standard TAT
01	Monitor Well #4	6/13/2006	9:45	3	X		2			1		X						X	X					X			X					X
02	Monitor Well #5	6/13/2006	11:00	3	X		2			1		X						X	X					X			X					X

Special Instructions:
PLEASE Email RESULTS TO: kpope@riceswd.com & mfranks@riceswd.com

Sample Containers Intact? Y N
Labels on container? Y N
Custody Seals: Containers / Cooler
Temperature Upon Receipt: 1.5°C

Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
Rozanne Johnson	6/15/06	5:30	James Johnson	6/15/06	5:31
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
James Johnson	6/15/06	07:50		6.15.06	0750

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

Client: Rice Op.

Date/Time: 6/15/06 7:50

Order #: 6F15001

Initials: CK

Sample Receipt Checklist

	Yes	No	
Temperature of container/cooler?		No	1.5 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	
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 Apolicable

Other observations:

Variance Documentation:

Contact Person: - Date/Time: Contacted by:

Regarding:

Corrective Action Taken:

ENVIRONMENTAL LAB OF

12600 West I-20 East - Odessa, Texas 79765

Analytical Report

Prepared for:

Sharon Hall

ARCADIS

1004 N. Big Spring Street

Midland, TX 79701

Project: MT000856.0001

Project Number: MT000856.001

Location: None Given

Lab Order Number: 6C02008

Report Date: 03/08/06

ARCADIS	Project: MT000856.0001	Fax: (432) 687-5401
1004 N. Big Spring Street	Project Number: MT000856.001	**Reported:**
Midland TX, 79701	Project Manager: Sharon Hall	03/08/06 16:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A20 MW-3 5'-10'	6C02008-01	Soil	02/28/06 14:00	03/02/06 09:20
A20 MW-3 20'-25'	6C02008-02	Soil	02/28/06 14:10	03/02/06 09:20
A20 MW-2 0-5'	6C02008-03	Soil	02/28/06 11:15	03/02/06 09:20
A20 MW-2 15'-20'	6C02008-04	Soil	02/28/06 11:35	03/02/06 09:20
M16-1 MW-3 15'-20'	6C02008-05	Soil	03/01/06 09:10	03/02/06 09:20
M16-1 MW-2 15'-20'	6C02008-06	Soil	02/28/06 17:40	03/02/06 09:20

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

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
A20 MW-3 5'-10' (6C02008-01) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	**0.0875**	0.0250	"	"	"	"	"	"	
Ethylbenzene	**0.106**	0.0250	"	"	"	"	"	"	
Xylene (p/m)	**0.176**	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*81.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*80-120*		"	"	"	"	
A20 MW-3 20'-25' (6C02008-02) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*88.2 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.0 %*	*80-120*		"	"	"	"	
A20 MW-2 0-5' (6C02008-03) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*81.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*80-120*		"	"	"	"	
A20 MW-2 15'-20' (6C02008-04) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*81.8 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*80-120*		"	"	"	"	

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Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
M16-1 MW-3 15'-20' (6C02008-05) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*81.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*80-120*		"	"	"	"	
M16-1 MW-2 15'-20' (6C02008-06) Soil									
Benzene	ND	0.0250	mg/kg dry	25	EC60604	03/06/06	03/06/06	EPA 8021B	
Toluene	ND	0.0250	"	"	"	"	"	"	
Ethylbenzene	ND	0.0250	"	"	"	"	"	"	
Xylene (p/m)	ND	0.0250	"	"	"	"	"	"	
Xylene (o)	ND	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*85.0 %*	*80-120*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.8 %*	*80-120*		"	"	"	"	

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General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
A20 MW-3 5'-10' (6C02008-01) Soil									
Chloride	**881**	20.0	mg/kg	40	EC60801	03/07/06	03/08/06	EPA 300.0	
% Moisture	**6.5**	0.1	%	1	EC60307	03/02/06	03/03/06	% calculation	
A20 MW-3 20'-25' (6C02008-02) Soil									
Chloride	**292**	10.0	mg/kg	20	EC60801	03/07/06	03/08/06	EPA 300.0	
% Moisture	**7.1**	0.1	%	1	EC60307	03/02/06	03/03/06	% calculation	
A20 MW-2 0-5' (6C02008-03) Soil									
Chloride	**49.9**	5.00	mg/kg	10	EC60801	03/07/06	03/08/06	EPA 300.0	
% Moisture	**4.9**	0.1	%	1	EC60307	03/02/06	03/03/06	% calculation	
A20 MW-2 15'-20' (6C02008-04) Soil									
Chloride	**500**	10.0	mg/kg	20	EC60801	03/07/06	03/08/06	EPA 300.0	
% Moisture	**9.1**	0.1	%	1	EC60307	03/02/06	03/03/06	% calculation	
M16-1 MW-3 15'-20' (6C02008-05) Soil									
Chloride	**175**	10.0	mg/kg	20	EC60801	03/07/06	03/08/06	EPA 300.0	
% Moisture	**5.7**	0.1	%	1	EC60307	03/02/06	03/03/06	% calculation	
M16-1 MW-2 15'-20' (6C02008-06) Soil									
Chloride	**197**	5.00	mg/kg	10	EC60801	03/07/06	03/08/06	EPA 300.0	
% Moisture	**7.3**	0.1	%	1	EC60307	03/02/06	03/03/06	% calculation	

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 EC60604 - EPA 5030C (GC)										
Blank (EC60604-BLK1)				Prepared & Analyzed: 03/06/06						
Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	*32.1*		*ug/kg*	*40.0*		*80.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*41.0*		*"*	*40.0*		*102*	*80-120*			
LCS (EC60604-BS1)				Prepared & Analyzed: 03/06/06						
Benzene	0.0405	0.00100	mg/kg wet	0.0500		81.0	80-120			
Toluene	0.0464	0.00100	"	0.0500		92.8	80-120			
Ethylbenzene	0.0555	0.00100	"	0.0500		111	80-120			
Xylene (p/m)	0.117	0.00100	"	0.100		117	80-120			
Xylene (o)	0.0579	0.00100	"	0.0500		116	80-120			
Surrogate: a,a,a-Trifluorotoluene	*37.7*		*ug/kg*	*40.0*		*94.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*42.9*		*"*	*40.0*		*107*	*80-120*			
Calibration Check (EC60604-CCV1)				Prepared & Analyzed: 03/06/06						
Benzene	40.3		ug/kg	50.0		80.6	80-120			
Toluene	42.0		"	50.0		84.0	80-120			
Ethylbenzene	47.3		"	50.0		94.6	80-120			
Xylene (p/m)	99.5		"	100		99.5	80-120			
Xylene (o)	50.2		"	50.0		100	80-120			
Surrogate: a,a,a-Trifluorotoluene	*33.6*		*"*	*40.0*		*84.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*33.3*		*"*	*40.0*		*83.2*	*80-120*			
Matrix Spike (EC60604-MS1)	**Source: 6C03004-01**			Prepared & Analyzed: 03/06/06						
Benzene	1.25	0.0250	mg/kg dry	1.55	ND	80.6	80-120			
Toluene	1.40	0.0250	"	1.55	ND	90.3	80-120			
Ethylbenzene	1.73	0.0250	"	1.55	ND	112	80-120			
Xylene (p/m)	3.64	0.0250	"	3.11	ND	117	80-120			
Xylene (o)	1.82	0.0250	"	1.55	ND	117	80-120			
Surrogate: a,a,a-Trifluorotoluene	*34.0*		*ug/kg*	*40.0*		*85.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*47.1*		*"*	*40.0*		*118*	*80-120*			

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 EC60604 - EPA 5030C (GC)										
Matrix Spike Dup (EC60604-MSD1)	**Source: 6C03004-01**			Prepared & Analyzed: 03/06/06						
Benzene	1.26	0.0250	mg/kg dry	1.55	ND	81.3	80-120	0.865	20	
Toluene	1.40	0.0250	"	1.55	ND	90.3	80-120	0.00	20	
Ethylbenzene	1.69	0.0250	"	1.55	ND	109	80-120	2.71	20	
Xylene (p/m)	3.58	0.0250	"	3.11	ND	115	80-120	1.72	20	
Xylene (o)	1.79	0.0250	"	1.55	ND	115	80-120	1.72	20	
Surrogate: a,a,a-Trifluorotoluene	*34.1*		*ug/kg*	*40.0*		*85.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*44.3*		*"*	*40.0*		*111*	*80-120*			

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

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 EC60307 - General Preparation (Prep)										
Blank (EC60307-BLK1)				Prepared: 03/02/06 Analyzed: 03/03/06						
% Solids	100		%							
Duplicate (EC60307-DUP1)	**Source: 6C02006-01**			Prepared: 03/02/06 Analyzed: 03/03/06						
% Solids	98.9		%		98.8			0.101	20	
Duplicate (EC60307-DUP2)	**Source: 6C02009-08**			Prepared: 03/02/06 Analyzed: 03/03/06						
% Solids	71.3		%		73.3			2.77	20	
Batch EC60801 - Water Extraction										
Blank (EC60801-BLK1)				Prepared: 03/07/06 Analyzed: 03/08/06						
Chloride	ND	0.500	mg/kg							
LCS (EC60801-BS1)				Prepared: 03/07/06 Analyzed: 03/08/06						
Chloride	8.66		mg/L	10.0		86.6	80-120			
Calibration Check (EC60801-CCV1)				Prepared: 03/07/06 Analyzed: 03/08/06						
Chloride	9.34		mg/L	10.0		93.4	80-120			
Duplicate (EC60801-DUP1)	**Source: 6C02003-01**			Prepared: 03/07/06 Analyzed: 03/08/06						
Chloride	473	10.0	mg/kg		470			0.636	20	

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: 3/8/2006

Raland K. Tuttle, Lab Manager
Celey D. Keene, Lab Director, Org. Tech Director
Peggy Allen, QA Officer
Jeanne Mc Murrey, Inorg. Tech Director
LaTasha Cornish, Chemist
Sandra Sanchez, Lab Tech.

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

Project Number/Name: MT000856.0001

Project Location: Rice Operating

Laboratory: Environmental Lab of Texas

Project Manager: Sharon Hall

Sampler(s)/Affiliation: ARCADIS/RL

Sample ID/Location	Matrix	Date Sampled	Time	ANALYSIS / METHOD / SIZE: 4 oz jar BTEX and Cl	1 liter plastic General GW Quality and Chloride	(2) 40 ml voa Neat BTEX HCl				Remarks	Total
A20 MW-3 (5'-10')	S	2/28/06	14:00	1						(e C02008-01	1
A20 MW-3 (20'-25')	S	2/28/06	14:10	1						-02	1
A20 MW-2 (0-5')	S	2/28/06	11:15	1						-03	1
A20 MW-2 (15'-20')	S	2/28/06	11:35	1						-04	1
M16-1 MW-3 (15-20)	S	3/1/06	9:10	1						-05	1
M16-1 MW-2 (15-20)	S	2/28/06	17:40	1						-06	1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 6

Relinquished by: Ralph Lang	Organization: ARCADIS	Date 3/2/06	Time 9:20	Seal Intact?	
Received by: Celeste Kelly	Organization: ELOT	Date 3/2/06	Time 9:20	(Yes) No N/A	
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	

Special Instructions/Remarks: 5.0°C 4oz glass w/ label

Delivery Method: XX In Person ☐ Common Carrier _____ ☐ Lab Courier ☐ Other _____

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

Client: ARCADIS

Date/Time: 3/2/06 9:20

Order #: 6C02008

Initials: CK

Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	5.0 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	
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: - Date/Time: Contacted by:

Regarding:

Corrective Action Taken:

ARCADIS

Appendix D

Recovery Well Design Diagram

RICE Operating Company

Recovery well diagram

8/4/2008