

1R - 427-177

Annual GW Mon. REPORTS

DATE:

2010



TETRA TECH

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March 25, 2011

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

Re: 2010 Annual Groundwater Summary Report & Project Status Report, Rice Operating Company, Eunice Monument Eumont (EME) Saltwater Disposal System (SWD) jct. A-2-1, Unit A, Section 2, T-20-S, R-36-E, Lea County, New Mexico, NMOCD CASE #1R0427-177

Mr. Hansen:

Tetra Tech Inc. (Tetra Tech) submits the following 2010 Annual Groundwater Summary Report for the Rice Operating Company (ROC), A-2-1 site located in the EME Salt Water Disposal System. This report consists of the following sections:

1. A figure presenting the location of the monitoring wells and most recent groundwater sampling results.
2. Tables summarizing all laboratory results and depths to groundwater at the site, including the current year (2010).
3. Graphs depicting the concentration of chlorides, total dissolved solids (TDS), and sulfates over time.
4. Laboratory results for the most recent groundwater sampling event.

In 2010, benzene was detected at or above the New Mexico Water Quality Control Commission (WQCC) standards in monitor well MW-1 for the first three quarters of the year. The site has been sampled on a quarterly basis since November 2006. Quarterly sampling will be continued for 2011. ROC will evaluate the monitoring well data and submit a report with a proposed path forward, which will likely include an estimation of chloride mass.

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

Tetra Tech

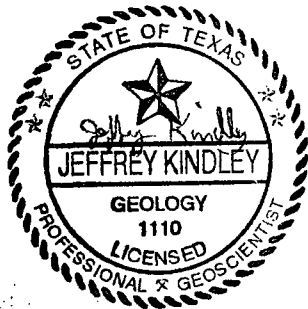
1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com

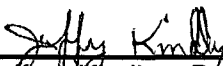


TETRA TECH

Thank you for your consideration of this annual summary information. If you have any questions, please contact me at (432) 682-4559, or Hack Conder of ROC at (575) 393-9174.



Respectfully Submitted,
Tetra Tech, Inc.

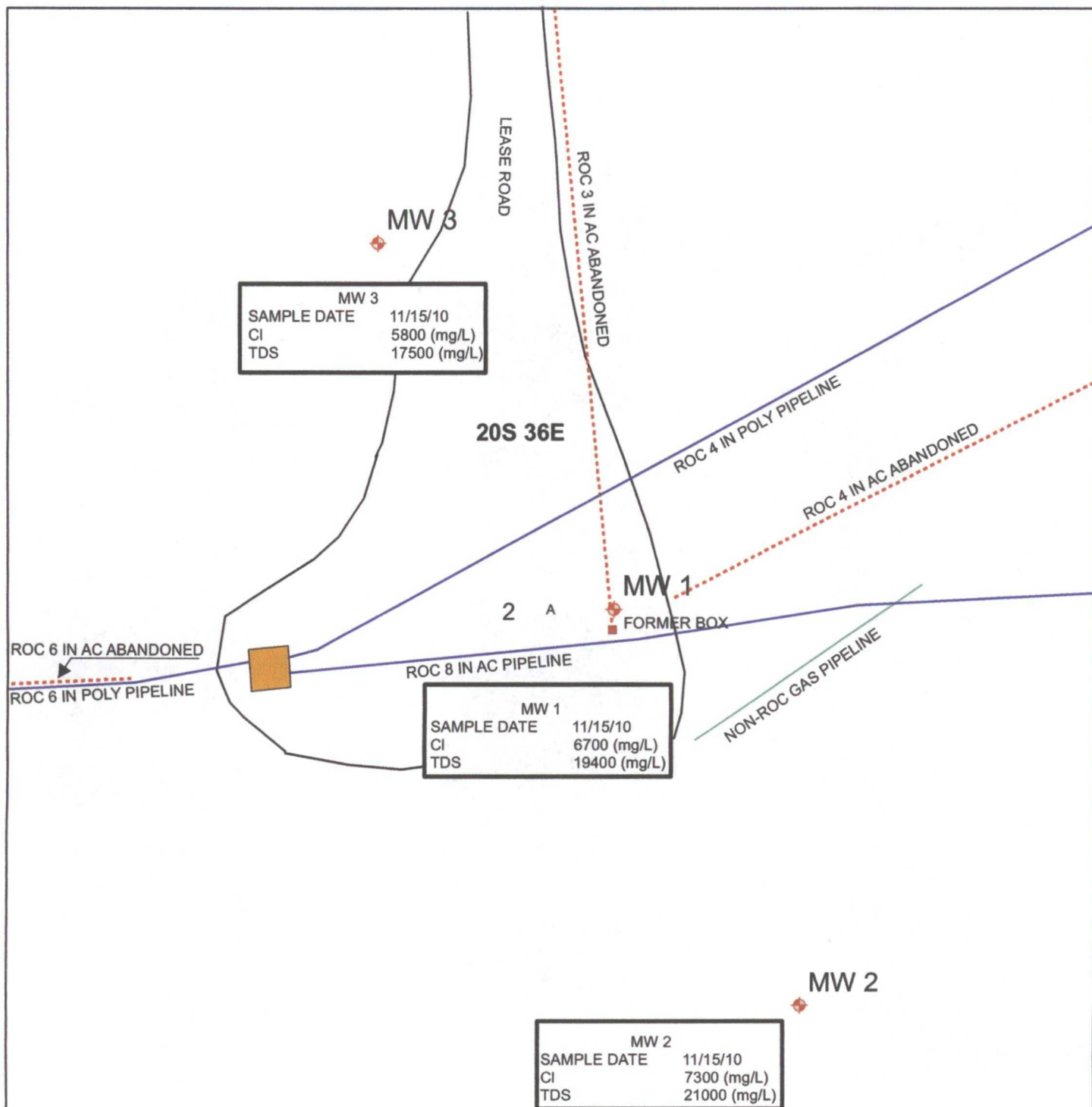


Jeffrey Kindley, P.G.
Senior Environmental Geologist

cc:Hack Conder – ROC
Enclosures: Figure, Tables, Graphs, Lab Results

FIGURES

MONITOR WELL SAMPLING DATA

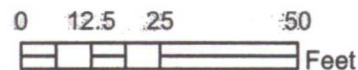


EME JCT A-2-1

Legals:UL/A SEC 2
T-20-S R-36-E

Case #: 1R0427-177

FIGURE 1



Drawing date: 3/10/11
Drafted by: TONY GRIECO

TABLES

Table 1

Rice Operating Company
EME Jct. A-2-1
Lea County, New Mexico

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS mg/L	Benzene mg/L	Toluene mg/L	Ethyl Benzene mg/L	Total Xylenes mg/L	Sulfate mg/L	Comments
1	38.13	53.76	2.50	10	11/06/06	8,460	22,800	0.00331	0.00158	0.00337	0.003418	6,780	hydrocar. odr
1	38.30	53.76	2.50	8	02/13/07	10,100	17,900	0.0692	0.00526	0.0313	0.0404	8,190	hydrocar. odr
1	38.50	53.76	2.40	8	06/09/07	8,500	23,900	0.0220	0.00147	0.00799	0.00768	6,760	hydrocar. odr
1	38.71	53.76	2.40	8	08/21/07	8,197	23,775	0.0340	0.004	0.012	0.022	6,611	hydrocar. odr
1	38.47	53.76	2.40	8	12/04/07	8,800	23,481	0.0880	<0.001	0.021	0.01	5,870	hydrocar. odr
1	39.32	53.78	2.30	8	02/13/08	8,500	22,900	0.0340	<0.002	0.017	<0.006	4,710	hydrocar. odr
1	39.50	53.78	2.30	8	05/23/08	8,000	22,400	0.0040	<0.002	<0.002	<0.006	6,340	hydrocar. odr
1	39.85	53.78	2.20	8	08/22/08	7,000	20,200	0.0590	<0.001	0.011	0.008	6,260	hydrocar. odr
1	40.05	53.78	2.20	8	11/21/08	6,600	21,800	0.0110	0.001	0.002	0.004	6,230	hydrocar. odr
1	40.22	53.81	2.20	8	02/19/09	7,000	20,800	0.0020	<0.001	0.001	<0.003	5,900	Clear, light sheen, strong hydrocar. odor
1	40.44	53.81	2.10	8	06/03/09	6,700	20,500	0.0150	<0.001	0.002	0.003	5,530	Clear, light sheen, strong hydrocar. odor
1	40.59	53.81	2.10	8	09/02/09	6,200	18,700	0.0770	<0.001	0.015	0.011	5,130	Clear, light sheen, strong hydrocar. odor
1	40.79	53.81	2.10	8	11/13/09	6,000	17,900	0.0140	<0.001	0.003	0.016	4,380	Clear, light sheen, strong hydrocar. odor
1	41.01	53.81	2.00	8	03/02/10	6,000	18,300	0.1320	0.002	0.019	0.021	6,010	Clear, light sheen, strong hydrocar. odor
1	41.12	53.81	2.00	8	05/27/10	6,000	18,700	0.0640	<0.001	0.014	0.008	5,250	Clear, light sheen, strong hydrocar. odor
1	41.10	53.81	2.00	8	08/19/10	6,600	19,700	0.0210	<0.001	0.004	0.003	5,410	Clear, light sheen, strong hydrocar. odor
1	40.91	53.81	2.10	8	11/15/10	6,700	19,400	0.0010	<0.001	<0.001	<0.003	7,380	Clear, light sheen, strong hydrocar. odor

Graph 1
 Rice Operating Company
 MW-1
 EME Jct A-2-1
 Lea County, New Mexico

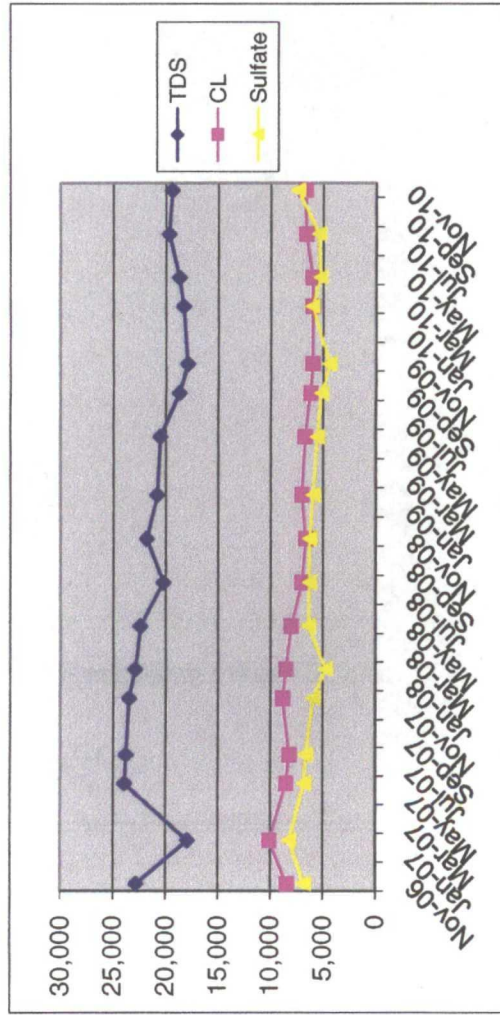


Table 2

Rice Operating Company
EME Jct. A-2-1
Lea County, New Mexico

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl mg/L	TDS mg/L	Benzene mg/L	Toluene mg/L	Ethyl Benzene mg/L	Total Xylenes mg/L	Sulfate mg/L	Comments
2	36.45	48.65	2.00	8	11/06/06	8,680	23,600	<0.001	<0.001	<0.001	<0.001	6,960	Silt/sand to clear, no odor
2	36.62	48.65	1.90	8	02/13/07	10,100	20,300	<0.001	<0.001	<0.001	<0.001	7,990	Silt/sand to clear, no odor
2	36.83	48.65	1.90	8	06/08/07	9,300	25,000	<0.001	<0.001	<0.001	<0.001	7,280	Silt/sand to clear, no odor
2	37.04	48.65	1.90	8	08/21/07	8,797	26,155	<0.004	<0.004	<0.004	<0.004	7,005	Silt/sand to clear, no odor
2	36.79	48.65	1.90	8	12/04/07	8,800	25,329	<0.001	<0.001	<0.001	<0.003	6,570	Silt/sand to clear, no odor
2	37.59	48.65	1.80	8	02/13/08	8,500	24,700	<0.002	<0.002	<0.002	<0.006	6,940	Silt/sand to clear, no odor
2	37.81	48.65	1.70	8	05/23/08	8,400	24,200	<0.002	<0.002	<0.002	<0.006	6,990	Silt/sand to clear, no odor
2	38.15	48.65	1.70	8	08/22/08	8,000	23,900	<0.001	<0.001	<0.001	<0.003	7,250	Silt/sand to clear, no odor
2	38.41	48.65	1.60	6	11/21/08	7,300	23,600	<0.001	<0.001	<0.001	<0.003	6,970	Silt/sand to clear, no odor
2	38.55	48.69	1.60	6	02/19/09	7,800	23,300	<0.001	<0.001	<0.001	<0.003	6,760	Silt/sand to clear, no odor
2	38.79	48.69	1.60	6	06/03/09	7,500	22,600	<0.001	<0.001	<0.001	<0.003	6,360	Silt/sand to clear, no odor
2	39.12	48.69	1.50	6	09/02/09	5,800	18,300	<0.001	<0.001	<0.0001	0.005	4,980	Silt/sand to clear, no odor
2	39.13	48.69	1.50	6	11/13/09	7,500	21,200	<0.001	<0.001	<0.001	<0.003	4,490	Silt/sand to clear, no odor
2	39.38	48.65	1.50	6	03/02/10	7,300	22,200	<0.001	<0.001	<0.001	<0.003	6,520	Silt/sand to clear, no odor
2	39.52	48.65	1.50	6	05/27/10	7,300	21,900	0.001	<0.001	<0.001	<0.003	5,690	Silt/sand to clear, no odor
2	39.50	48.65	1.50	6	08/19/10	7,600	21,800	<0.001	<0.001	<0.001	<0.003	5,850	Silt/sand to clear, no odor
2	39.27	48.65	1.50	6	11/15/10	7,300	21,000	<0.001	<0.001	<0.001	<0.003	7,960	Silt/sand to clear, no odor

Graph 2
 Rice Operating Company
 MW-2
 EME Jct. A-2-1
 Lea County, New Mexico

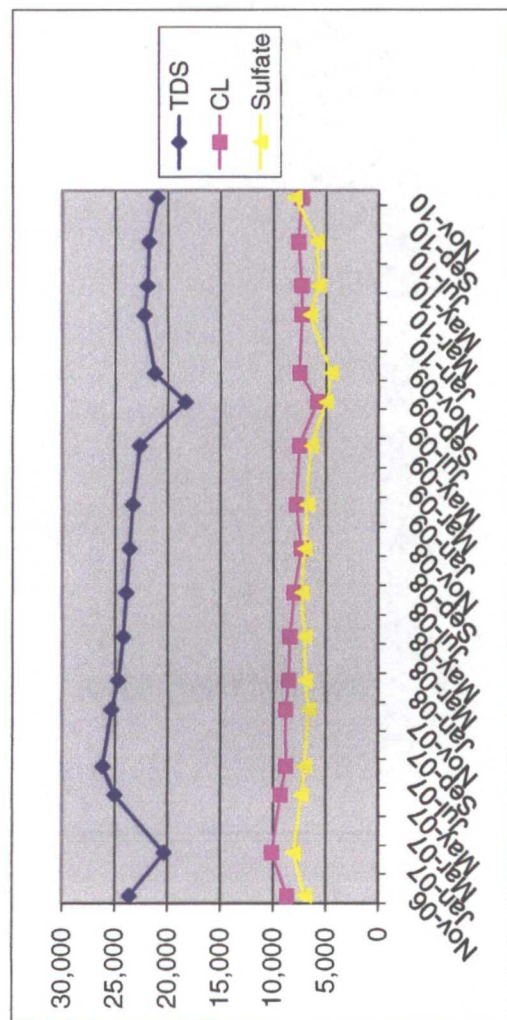


Table 3

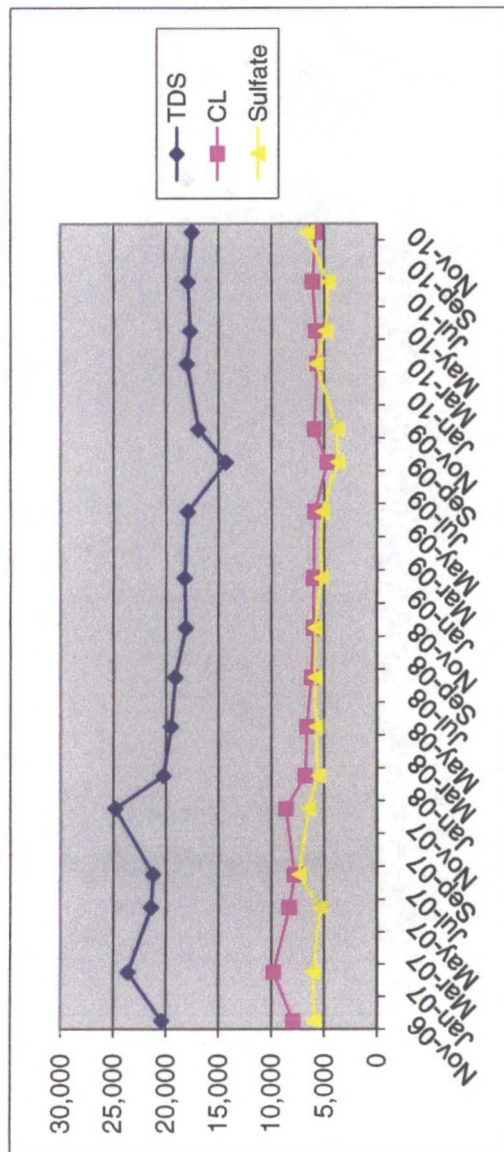
Rice Operating Company

EME Jct. A-2-1

Lea County, New Mexico

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl mg/L	TDS mg/L	Benzene mg/L	Toluene mg/L	Ethyl Benzene mg/L	Total Xylenes mg/L	Sulfate mg/L	Comments
3	37.12	47.38	1.60	6	11/06/06	7,970	20,400	<0.001	<0.001	<0.001	<0.001	5,950	Clear no odor
3	37.29	47.38	1.60	6	02/13/07	9,820	23,600	<0.001	<0.001	<0.001	<0.001	6,050	Clear no odor
3	37.50	47.38	1.60	6	06/08/07	8,300	21,400	<0.001	<0.001	<0.001	<0.001	5,350	Clear no odor
3	37.64	47.38	1.60	6	08/21/07	7,798	21,200	<0.004	<0.004	<0.004	<0.012	7,381	Clear no odor
3	37.39	47.38	1.60	6	12/04/07	8,600	24,814	<0.001	<0.001	<0.001	<0.003	6,480	Clear no odor
3	38.22	47.38	1.50	6	02/13/08	6,800	20,200	<0.002	<0.002	<0.002	<0.006	5,560	Clear no odor
3	38.44	47.38	1.40	6	05/20/08	6,600	19,500	<0.002	<0.002	<0.002	<0.006	5,720	Clear no odor
3	38.80	47.38	1.40	6	08/22/08	6,200	19,100	<0.001	<0.001	<0.001	<0.003	5,860	Clear no odor
3	39.06	47.38	1.30	6	11/21/08	6,000	18,100	<0.001	<0.001	<0.001	<0.003	5,860	Clear no odor
3	39.23	47.41	1.30	6	02/19/09	6,000	18,200	<0.001	<0.001	<0.001	<0.003	5,270	Clear no odor
3	39.33	47.41	1.30	6	06/03/09	5,900	17,900	<0.001	<0.001	<0.001	<0.003	5,150	Clear no odor
3	39.64	47.41	1.20	6	09/02/09	4,700	14,300	<0.001	<0.001	<0.001	<0.003	3,720	Clear no odor
3	39.79	47.41	1.20	6	11/13/09	5,900	16,900	<0.001	<0.001	<0.001	<0.003	3,800	Clear no odor
3	40.06	47.39	1.20	6	03/02/10	5,700	18,000	<0.001	<0.001	<0.001	<0.003	5,770	Clear no odor
3	40.18	47.39	1.20	6	05/27/10	5,800	17,700	<0.001	<0.001	<0.001	<0.003	4,900	Clear no odor
3	40.15	47.39	1.20	6	08/19/10	6,100	17,900	<0.001	<0.001	<0.001	<0.003	4,630	Clear no odor
3	39.94	47.39	1.20	6	11/15/10	5,800	17,500	<0.001	<0.001	<0.001	<0.003	6,620	Clear no odor

Graph 3
 Rice Operating Company
 MW-3
 EME Jct. A-2-1
 Lea County, New Mexico



APPENDIX A



November 21, 2010

Hack Conder
Rice Operating Company
112 W. Taylor
Hobbs, NM 88240

RE: EME JUNCTION A-2-1

Enclosed are the results of analyses for samples received by the laboratory on 11/18/10 14:37.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene
Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received: 11/18/2010
Reported: 11/21/2010
Project Name: EME JUNCTION A-2-1
Project Number: NOT GIVEN
Project Location: T20S-R36E-SEC2 A - LEA CTY., NM

Sampling Date: 11/15/2010
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: MONITOR WELL #1 (H021335-01)**BTEX 82608****mg/L****Analyzed By: CMS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.001	0.001	11/19/2010	ND	0.045	90.1	0.0500	5.31	
Toluene*	<0.001	0.001	11/19/2010	ND	0.045	89.9	0.0500	4.08	
Ethylbenzene*	<0.001	0.001	11/19/2010	ND	0.047	93.9	0.0500	0.997	
Total Xylenes*	<0.003	0.003	11/19/2010	ND	0.136	91.0	0.150	2.30	

Surrogate: Dibromofluoromethane 108 % 80-120*Surrogate: Toluene-d8* 115 % 80-120*Surrogate: 4-Bromofluorobenzene* 112 % 80-120**Chloride, SM4500Cl-B****mg/L****Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6700	4.00	11/19/2010	ND	112	112	100	3.64	

Sulfate 375.4**mg/L****Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	7380	10.0	11/20/2010	ND	44.7	112	40.0	0.837	

TDS 160.1**mg/L****Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	19400	5.00	11/20/2010	ND				0.847	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received: 11/18/2010
Reported: 11/21/2010
Project Name: EME JUNCTION A-2-1
Project Number: NOT GIVEN
Project Location: T20S-R36E-SEC2 A - LEA CTY., NM

Sampling Date: 11/15/2010
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: MONITOR WELL #2 (H021335-02)**BTEX 8260B****mg/L****Analyzed By: CMS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	11/19/2010	ND	0.045	90.1	0.0500	5.31	
Toluene*	<0.001	0.001	11/19/2010	ND	0.045	89.9	0.0500	4.08	
Ethylbenzene*	<0.001	0.001	11/19/2010	ND	0.047	93.9	0.0500	0.997	
Total Xylenes*	<0.003	0.003	11/19/2010	ND	0.136	91.0	0.150	2.30	

Surrogate: Dibromofluoromethane 106 % 80-120*Surrogate: Toluene-d8* 102 % 80-120*Surrogate: 4-Bromofluorobenzene* 99.8 % 80-120**Chloride, SM4500Cl-B****mg/L****Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7300	4.00	11/20/2010	ND	104	104	100	0.00	

Sulfate 375.4**mg/L****Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	7960	10.0	11/20/2010	ND	44.7	112	40.0	0.837	

TDS 160.1**mg/L****Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	21000	5.00	11/20/2010	ND				0.847	

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Rice Operating Company
Hack Conder
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received: 11/18/2010
Reported: 11/21/2010
Project Name: EME JUNCTION A-2-1
Project Number: NOT GIVEN
Project Location: T20S-R36E-SEC2 A - LEA CTY., NM

Sampling Date: 11/15/2010
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: MONITOR WELL #3 (H021335-03)

BTEX 8260B		mg/L		Analyzed By: CMS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	11/19/2010	ND	0.045	90.1	0.0500	5.31	
Toluene*	<0.001	0.001	11/19/2010	ND	0.045	89.9	0.0500	4.08	
Ethylbenzene*	<0.001	0.001	11/19/2010	ND	0.047	93.9	0.0500	0.997	
Total Xylenes*	<0.003	0.003	11/19/2010	ND	0.136	91.0	0.150	2.30	

Surrogate: Dibromofluoromethane 98.5 % 80-120

Surrogate: Toluene-d8 101 % 80-120

Surrogate: 4-Bromofluorobenzene 100 % 80-120

Chloride, SM4500Cl-B		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5800	4.00	11/20/2010	ND	104	104	100	0.00	

Sulfate 375.4		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	6620	10.0	11/20/2010	ND	44.7	112	40.0	0.837	

TDS 160.1		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	17500	5.00	11/20/2010	ND				0.847	

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.


- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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