

AP - 43

ANNUAL MONITORING REPORT

YEAR(S):
2010



Infrastructure, environment, buildings

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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

Subject: **2010 ANNUAL GROUNDWATER REPORT
JCT. A-20, EME SWD SYSTEM
UNIT 'A', SEC. 20, T20S, R37E
NMOCD CASE # AP-43 (formerly 1R0427-89)**

Mr. Hansen:

On behalf of Rice Operating Company (ROC), ARCADIS U.S., Inc. (ARCADIS) respectfully submits the 2010 Annual Groundwater Report for the EME Jct. A-20 site located in the Eunice Monument Eumont (EME) Salt Water Disposal (SWD) System.

One monitoring well was installed in 2002 during delineation as part of the Junction Box Upgrade Program.

Soon after the well was installed, phase-separated hydrocarbon (PSH) was found on the water. ROC has actively worked at recovering the PSH in the well by hand bailing or by using an absorbent sock. In September of 2004 ARC Environmental Service Technologies (ARC) assumed the maintenance and weekly replacement of the socks; PSH thickness and volume were measured weekly.

A Stage 1 Abatement Plan was submitted to NMOCD on June 23, 2005. NMOCD approved the Abatement Plan Proposal on February 21, 2006.

On February 28, 2006 monitor wells MW-2 and MW-3 were installed northwest and south of Jct. A-20 and soil and groundwater samples were collected. On May 31, 2006, monitor wells MW-4 and MW-5 were installed southeast and northwest of Jct. A-20 and soil and groundwater samples were collected. A Stage 1 Abatement Plan

ARCADIS U.S., Inc.
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Texas 79701
Tel 432 687 5400
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Environmental

Date:
March 15, 2011

Contact:
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Our ref:
MT000857.0001

Part of a bigger picture

Page:
1/2

Report and Stage 2 Abatement Plan proposal was submitted to NMOCD on January 30, 2007. The report details the investigation and investigation results.

A Stage 2 Abatement Plan proposal was submitted on August 27, 2008 and approved on May 12, 2009. A four-inch diameter recovery well was drilled at the site on September 21, 2009. Excavation activities were completed on September 8, 2009. Groundwater removal from the recovery well began in April 2010 and was completed on July 9, 2010.

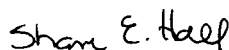
All monitor wells are sampled quarterly per NMOCD guidelines. The attached tables summarize the groundwater conditions at the site.

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

Thank you for your consideration concerning this annual summary of groundwater monitoring information. If you have any questions, do not hesitate to contact Hack Conder or me.

Sincerely,

ARCADIS U.S., Inc.



Sharon E. Hall
Associate Vice President

Copies:

Hack Conder- ROC

Attachments:

MW Summary Tables

Monitor Well Location Figure

Monitor Well Lab Result

ROC EME Jct. A-20

MW	Depth to Water (feet)	Total Depth (feet)	Well Volume (gallons)	Volume Purged (gallons)	Sample Date	Cl (mg/L)	IDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl Benzene (mg/L)	Total Xylenes (mg/L)	Sulfate (mg/L)
1	24.70	38.40	2.2	6.7	3/5/2002	2279	5044	<0.002	0.003	0.006	0.014	1087
1	25.62	38.22	2	6	5/13/2002	2100	4840	XXX	XXX	XXX	XXX	793
1	26.00	38.25	1.96	6	8/22/2002	2130	4890	XXX	XXX	XXX	XXX	822
1	24.97	38.25	2.125	6.5	11/12/2002	2130	5070	XXX	XXX	XXX	XXX	780
1	26.20	38.00	0.28	0.8	3/14/2003	1120	5020	XXX	XXX	XXX	XXX	673
1	23.20	26.00	0.448	1.3	6/5/2003	2130	4500	XXX	XXX	XXX	XXX	875
1	23.42	26.00	0.4	1.2	9/3/2003	2130	5240	XXX	XXX	XXX	XXX	679
1	23.20	26.00	0.448	1.3	12/10/2003	2390	4870	XXX	XXX	XXX	XXX	731
1	25.64	26.50	0.86	2.5	2/26/2004	2300	4900	XXX	XXX	XXX	XXX	588
1	23.02	26.00	0.448	1.3	5/27/2004	1910	4480	XXX	XXX	XXX	XXX	588
1	XXX	XXX	XXX	XXX	9/16/2004	2360	5340	XXX	XXX	XXX	XXX	273
1	24.53	38.36	2.21	6.6	11/24/2004	1930	5110	XXX	XXX	XXX	XXX	422
1	22.39	XXX	XXX	XXX	3/22/2005	2330	4290	XXX	XXX	XXX	XXX	125
1	23.40	32.00	XXX	4.32	6/28/2005	2430	5060	XXX	XXX	XXX	XXX	481
1	23.45	32.00	XXX	4.18	9/6/2005	2460	5100	XXX	XXX	XXX	XXX	486
1	23.43	38.36	2.4	8	11/2/2005	2330	5310	0.00643	0.0125	0.0635	0.1558	484
1	23.22	38.36	2.4	8	2/1/2006	2750	5100	0.0139	0.0435	0.145	0.3009	434
1	23.20	38.36	2.4	8	4/26/2006	2700	5430	0.00433	0.00849	0.0694	0.1248	482
1	23.84	38.36	2.3	8	7/24/2006	2180	4010	0.0341	<0.0200	0.0823	0.0866	96.8
1	23.60	38.36	2.4	8	10/17/2006	1830	4050	0.0409	0.0187	0.124	0.1489	44.7
1	23.82	38.26	2.3	8	1/30/2007	2960	4870	<0.001	<0.001	<0.001	<0.001	504
1	23.67	38.26	2.3	8	4/12/2007	2870	6360	0.0288	0.0472	0.177	0.194	493
1	24.06	38.26	2.3	8	7/16/2007	2090	4220	<0.001	<0.001	<0.001	<0.002	70.4
1	24.48	38.26	2.2	8	9/4/2007	1999	4612	<0.002	0.031	0.24	0.246	115
1	24.14	38.26	2.3	8	10/11/2007	2100	4416	0.068	0.012	0.17	0.138	111
1	24.00	38.26	2.3	8	1/16/2008	2320	5501	0.028	<0.02	0.139	0.132	305
1	23.88	38.26	2.3	8	4/11/2008	2440	5560	0.027	0.006	0.102	0.068	457
1	24.41	38.26	2.2	8	7/22/2008	3200	6560	<0.002	<0.002	<0.002	<0.006	670
1	24.22	38.26	2.2	8	10/17/2008	3100	6990	0.001	<0.001	0.002	<0.003	744
1	23.90	38.28	2.3	8	2/4/2009	6570	3200	0.003	<0.001	0.003	<0.003	691
1	23.83	38.28	2.3	8	5/8/2009	2400	5120	0.03	0.004	0.05	0.024	201
1	24.76	38.28	2.2	8	8/28/2009	3300	6910	<0.001	<0.001	<0.001	<0.003	631
1	24.77	38.28	2.2	8	10/30/2009	3150	7540	0.056	0.073	0.32	1.69	610
1	24.46	38.28	2.2	8	2/16/2010	2500	5230	0.042	0.006	0.055	0.055	248
1	24.20	38.28	2.3	8	5/18/2010	2100	4890	0.012	0.002	0.016	0.014	53.8
1	23.98	38.28	2.3	8	8/10/2010	3350	6310	<0.001	<0.001	<0.001	<0.003	700
1	23.95	38.28	2.3	8	11/3/2010	3050	5400	0.026	0.003	0.016	0.018	313

mg/L=milligrams per liter
XXX- not analyzed

ROC EME Jct. A-20

MW	Depth to Water (feet)	Total Depth (feet)	Well Volume (gallons)	Volume Purged (gallons)	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)
2	23.84	32	1.3	4	3/8/2006	2030	4610	<0.001	<0.001	<0.001	<0.001	491
2	23.72	32	1.3	15	4/26/2006	1970	4800	<0.001	<0.001	<0.001	<0.001	479
2	24.45	32	1.2	10	7/24/2006	2270	4825	<0.001	<0.001	<0.001	<0.001	648
2	24.08	32	1.3	8	10/17/2006	2040	4590	<0.001	<0.001	<0.001	<0.001	679
2	23.85	31.72	1.3	6	1/30/2007	2260	4460	<0.001	<0.001	<0.001	<0.001	745
2	23.71	31.72	1.3	6	4/12/2007	2320	5040	<0.001	<0.001	<0.001	<0.001	694
2	24.03	31.72	1.2	6	7/16/2007	2230	4870	<0.001	<0.001	<0.001	<0.002	740
2	24.46	31.72	1.2	5	9/4/2007	2339	5664	<0.002	<0.002	<0.002	<0.006	842
2	24.11	31.72	1.2	5	10/11/2007	2260	5500	<0.001	<0.001	<0.001	<0.003	790
2	23.96	31.71	1.2	5	1/16/2008	2260	5718	<0.001	<0.001	<0.001	<0.003	896
2	23.87	31.71	1.3	5	4/11/2008	2400	5780	<0.001	<0.001	<0.001	<0.003	1200
2	24.67	31.71	1.1	5	7/23/2008	2500	5520	<0.002	<0.002	<0.002	<0.006	749
2	24.39	31.71	1.2	5	10/17/2008	2460	5740	<0.001	<0.001	<0.001	<0.003	819
2	24.12	33.45	1.5	5	2/4/2009	2580	5600	<0.001	<0.001	<0.001	<0.003	691
2	24.04	33.45	1.5	5	5/8/2009	2600	5660	<0.001	<0.001	<0.001	<0.003	741
2	24.87	33.45	1.4	5	8/28/2009	2420	5360	<0.001	<0.001	<0.001	<0.003	659
2	24.92	33.45	1.4	5	10/30/2009	2550	5940	<0.001	<0.001	<0.001	<0.003	618
2	24.65	33.48	1.4	5	2/16/2010	2770	5750	<0.001	<0.001	<0.001	<0.003	836
2	24.38	33.48	1.5	5	5/18/2010	2650	5750	<0.001	<0.001	<0.001	<0.003	705
2	24.13	33.48	1.5	5	8/10/2010	2800	5660	<0.001	<0.001	<0.001	<0.003	685
2	24.13	33.48	1.5	5	11/3/2010	2650	5780	<0.001	<0.001	<0.001	<0.003	552

mg/L =milligrams per liter

ROC EME Jct. A-20

MW	Depth to Water (feet)	Total Depth (feet)	Well Volume (gallons)	Volume Purged (gallons)	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)
3	23.90	32.70	1.4	5	3/8/2006	2200	4860	<0.001	<0.001	<0.001	<0.001	486
3	23.93	32.70	1.4	15	4/29/2006	2340	5320	<0.001	<0.001	<0.001	<0.001	452
3	24.61	32.70	1.3	10	7/24/2006	2890	4650	<0.001	<0.001	<0.001	<0.001	566
3	24.23	32.70	1.4	8	10/17/2006	2310	4900	<0.001	<0.001	<0.001	<0.001	563
3	24.02	32.75	1.4	6	1/30/2007	2460	4490	<0.001	<0.001	<0.001	<0.001	589
3	23.87	32.75	1.4	6	4/12/2007	2670	5530	<0.001	0.00109	0.000397	0.00104	516
3	24.27	32.75	1.4	6	7/16/2007	2530	5960	<0.001	<0.001	<0.001	<0.002	541
3	24.70	32.75	1.3	5	9/4/2007	2619	6212	<0.002	<0.002	<0.002	<0.006	679
3	24.30	32.75	1.4	5	10/11/2007	2500	5417	<0.001	<0.001	<0.001	<0.003	548
3	24.14	32.82	1.4	5	1/16/2008	2700	5993	<0.001	<0.001	<0.001	0.003	628
3	24.05	32.82	1.4	5	4/11/2008	2800	6010	<0.001	<0.001	<0.001	<0.003	788
3	24.81	32.82	1.3	5	7/23/2008	3000	6080	<0.002	<0.002	<0.002	<0.006	692
3	24.63	32.82	1.3	5	10/17/2008	2850	6590	<0.001	<0.001	<0.001	<0.003	662
3	24.32	33.28	1.4	5	2/4/2009	2900	6460	<0.001	<0.001	<0.001	<0.003	635
3	24.24	33.28	1.4	5	5/8/2009	2900	6160	<0.001	<0.001	<0.001	<0.003	624
3	25.13	33.28	1.3	5	8/28/2009	2800	5840	<0.001	<0.001	<0.001	<0.003	557
3	25.14	33.28	1.3	5	10/30/2009	2950	6850	<0.001	<0.001	<0.001	<0.003	679
3	24.84	33.38	1.4	5	2/16/2010	2950	6320	<0.001	<0.001	<0.001	<0.003	814
3	24.71	33.38	1.4	5	5/18/2010	2900	7370	<0.001	<0.001	<0.001	<0.003	1440
3	24.43	33.38	1.4	5	8/10/2010	2950	5860	<0.001	<0.001	<0.001	<0.003	720
3	24.36	33.38	1.4	5	11/3/2010	2900	5700	<0.001	0.002	<0.001	<0.003	669

mg/L=milligrams per liter

ROC EME Jct. A-20

MW	Depth to Water (feet)	Total Depth (feet)	Well Volume (gallons)	Volume Purged (gallons)	Sample Date	Cl (mg/L)	IDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl Benzene (mg/L)	Total Xylenes (mg/L)	Sulfate (mg/L)
4	21.87	31.80	1.6	10	6/13/2006	3840	6790	<0.001	<0.001	<0.001	<0.001	1060
4	21.97	31.80	1.6	10	7/24/2006	3520	6135	<0.001	<0.001	<0.001	<0.001	806
4	21.59	31.50	1.6	8	10/17/2006	3020	6560	0.000732	<0.001	<0.001	<0.001	791
4	21.37	32.05	1.7	8	1/30/2007	3330	6260	<0.001	<0.001	<0.001	<0.001	1170
4	21.20	32.05	1.7	8	4/12/2007	3140	7170	<0.001	<0.001	<0.001	<0.001	1090
4	21.65	32.05	1.7	8	7/16/2007	3170	XXX	<0.001	<0.001	<0.001	<0.002	751
4	22.11	32.05	1.6	6	9/4/2007	3179	7270	<0.002	<0.002	<0.002	<0.006	831
4	24.30	32.75	1.4	5	10/11/2007	3000	6587	0.002	<0.001	<0.001	<0.003	670
4	21.49	32.03	1.7	6	1/16/2008	3250	7386	<0.001	<0.001	<0.001	<0.003	818
4	21.42	32.03	1.7	6	4/11/2008	3350	7450	<0.001	<0.001	<0.001	<0.003	1400
4	22.24	32.03	1.6	6	7/23/2008	3400	7000	<0.002	<0.002	<0.002	<0.006	818
4	22.00	32.03	1.6	6	10/17/2008	3250	7510	<0.001	<0.001	<0.001	<0.003	771
4	21.68	32.20	1.7	6	2/4/2009	3300	7450	<0.001	<0.001	<0.001	<0.003	756
4	21.63	32.20	1.7	6	5/8/2009	3350	6900	<0.001	<0.001	<0.001	<0.003	759
4	22.54	32.20	1.5	6	8/28/2009	3400	7060	<0.001	<0.001	<0.001	<0.003	637
4	22.53	32.20	1.5	6	10/30/2009	3350	7750	<0.001	<0.001	<0.001	<0.003	605
4	22.22	33.42	1.8	6	2/16/2010	3400	6680	<0.001	<0.001	<0.001	<0.003	891
4	21.98	33.42	1.8	6	5/18/2010	3300	6620	<0.001	<0.001	<0.001	<0.003	818
4	21.73	33.42	1.9	6	8/10/2010	3950	7660	<0.001	<0.001	<0.001	<0.003	921
4	21.74	33.42	1.9	6	11/3/2010	3500	6760	<0.001	<0.001	<0.001	<0.003	872

mg/L=milligrams per liter
 XXX- not analyzed

ROC EME Jct. A-20

MW	Depth to Water (feet)	Total Depth (feet)	Well Volume (gallons)	Volume Purged (gallons)	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)
5	25.02	32.20	1.1	10	6/13/2006	2450	4960	<0.001	<0.001	<0.001	<0.001	519
5	25.26	32.20	1.1	10	7/24/2006	2300	4235	<0.001	<0.001	<0.0001	<0.001	574
5	24.92	32.20	1.2	8	10/17/2006	2100	4550	<0.001	<0.001	<0.001	<0.001	573
5	24.68	31.98	1.2	6	1/30/2007	2420	4390	<0.001	<0.001	<0.001	<0.001	588
5	24.55	31.98	1.2	6	4/12/2007	2290	4640	<0.001	<0.001	<0.001	<0.001	505
5	24.78	31.98	1.2	6	7/16/2007	2190	4800	<0.001	<0.001	<0.001	<0.002	527
5	25.18	31.98	1.1	5	9/4/2007	2299	5236	<0.002	<0.002	<0.002	<0.006	623
5	24.90	31.98	1.1	5	10/11/2007	2220	5082	<0.001	<0.001	<0.001	<0.003	428
5	24.71	31.88	1.1	5	1/16/2008	2280	5457	<0.001	<0.001	<0.001	<0.003	548
5	24.66	31.88	1.2	5	4/11/2008	2200	5230	<0.001	<0.001	<0.001	<0.003	761
5	25.27	31.88	1.1	5	7/23/2008	2500	5510	<0.002	<0.002	<0.002	<0.006	587
5	25.19	31.88	1.1	5	10/17/2008	2650	5750	<0.001	<0.001	<0.001	<0.003	669
5	24.88	31.90	1.1	5	2/4/2009	2560	5590	<0.001	<0.001	<0.001	<0.003	577
5	24.80	31.90	1.1	5	5/8/2009	2500	5580	<0.001	<0.001	<0.001	<0.003	609
5	25.53	31.90	1.0	5	8/28/2009	2520	5640	<0.001	<0.001	<0.001	<0.003	527
5	25.64	31.90	1.0	5	10/30/2009	2350	5490	<0.001	<0.001	<0.001	<0.003	551
5	25.40	33.18	1.2	5	2/16/2010	2220	5060	<0.001	<0.001	<0.001	<0.003	708
5	25.11	33.18	1.3	5	5/18/2010	2500	5310	<0.001	<0.001	<0.001	<0.003	680
5	24.93	33.18	1.3	5	8/10/2010	2300	5050	<0.001	<0.001	<0.001	<0.003	634
5	24.84	33.18	1.3	5	11/3/2010	2250	4690	<0.001	<0.001	<0.001	<0.003	702

mg/L=milligrams per liter.

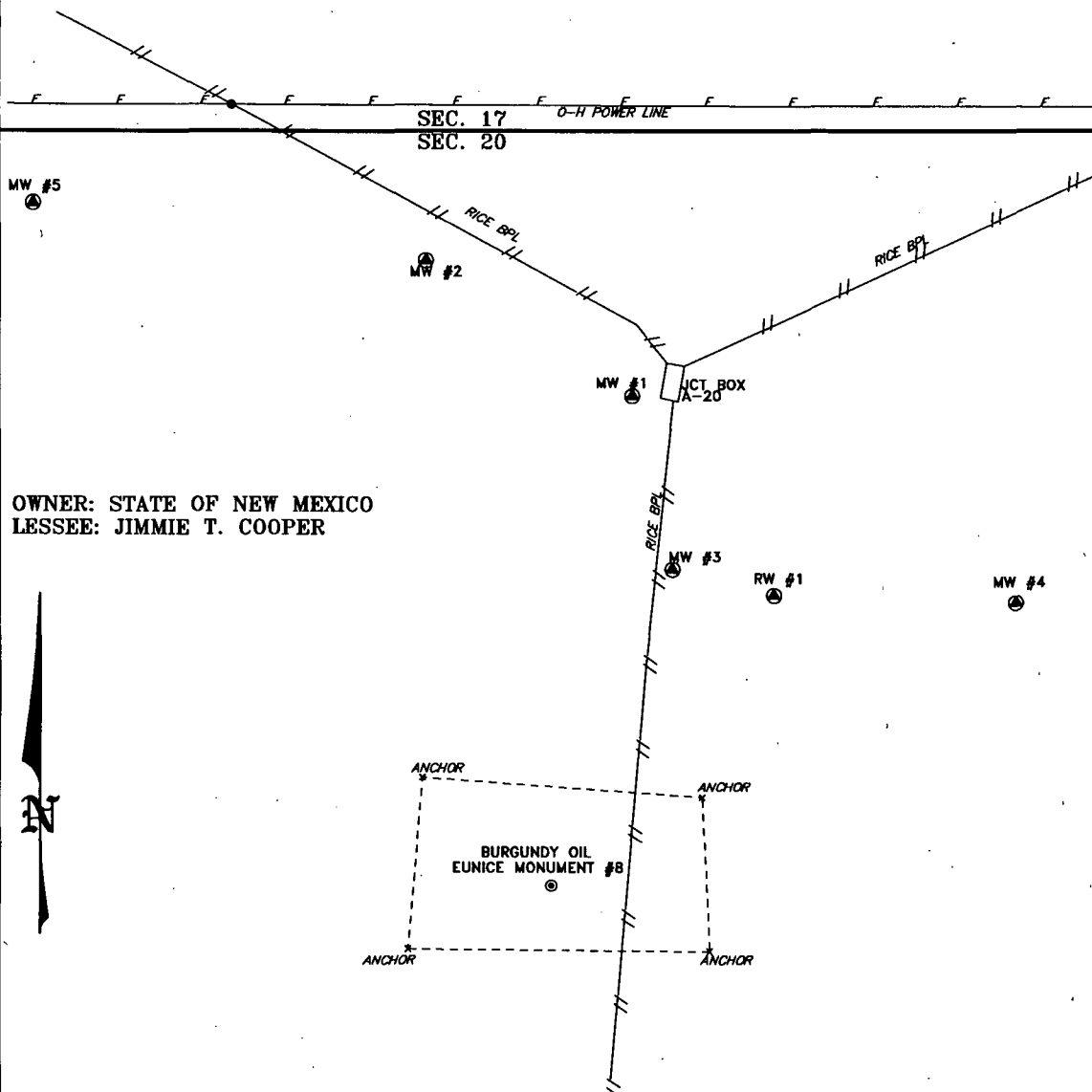
ROC EME Jct. A-20

MW	Depth to Water (feet)	Total Depth (feet)	Well Volume (gallons)	Volume Purged (gallons)	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)
RW-1	24.49	66.38	27.2	90	10/30/2009	3450	8160	<0.001	<0.001	<0.001	<0.003	610
RW-1	24.22	66.32	27.4	90	2/16/2010	3500	6890	<0.001	<0.001	<0.001	<0.003	833
RW-1	*	*	*	*	5/18/2010	3500	6820	<0.001	<0.001	<0.001	<0.003	710
RW-1	*	*	*	*	8/10/2010	3600	6660	<0.001	<0.001	<0.001	<0.003	690
RW-1	*	*	*	*	11/3/2010	3550	6910	<0.001	0.002	<0.001	<0.003	791

mg/L=milligrams per liter

* pumping, not measured

SECTION 20, TOWNSHIP 20 SOUTH, RANGE 37 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.

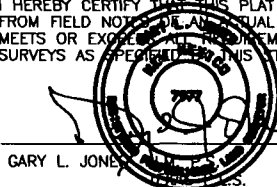


OWNER: STATE OF NEW MEXICO
LESSEE: JIMMIE T. COOPER

NEW MEXICO STATE PLANE COORDINATES (NAD 83)

WELL#	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEV(GRND)	ELEV(PVC)	ELEV(CONC)
MW #1	571138.655	870172.201	N32°33'56.1"	W103°15'57.4"	3521.12'	3524.40'	
MW #2	571195.295	870083.029	N32°33'56.6"	W103°15'58.5"	3521.91'	3524.75'	
MW #3	571065.335	870190.079	N32°33'55.3"	W103°15'57.2"	3521.80'	3524.67'	
MW #4	571053.771	870335.855	N32°33'55.3"	W103°15'55.6"	3519.09'	3521.92'	
MW #5	571223.099	869914.641	N32°33'57.0"	W103°16'00.5"	3522.62'	3525.66'	
RW #1	571056.958	870231.835	N32°33'55.0"	W103°15'57.3"	3522.80'	3525.37'	3523.09'

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED
FROM FIELD NOTES OF AN ORIGINAL SURVEY AND
MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND
SURVEYS AS SPECIFIED BY THIS STATE.



GARY L. JONES

No. 7977
No. 5074

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 21868

Drawn By: K. GOAD

Date: 10-28-2009

Disk: KJG - 21868MW.DWG

60 0 60 120 FEET

RICE OPERATING COMPANY

REF: A-20 JCT BOX MONITOR WELLS

MONITOR WELLS LOCATED IN

SECTION 20, TOWNSHIP 20 SOUTH, RANGE 37 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO.

Survey Date: VARIES

Sheet 1 of 1 Sheets



November 12, 2010

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION A-20

Enclosed are the results of analyses for samples received by the laboratory on 11/04/10 15:35.

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

Analytical Results For:

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

Received: 11/04/2010
Reported: 11/12/2010
Project Name: EME JUNCTION A-20
Project Number: NONE GIVEN
Project Location: T20S-R37E-SEC20 A ~ LEA CTY ~ NM

Sampling Date: 11/03/2010
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: MONITOR WELL #1 (H021232-01)

BTEX 80218		mg/L		Analyzed By: cms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.026	0.001	11/11/2010	ND	0.024	94.5	0.0250		
Toluene*	0.003	0.001	11/11/2010	ND	0.024	94.2	0.0250		
Ethylbenzene*	0.016	0.001	11/11/2010	ND	0.023	92.4	0.0250		
Total Xylenes*	0.018	0.003	11/11/2010	ND	0.070	93.6	0.0750		

Surrogate: 4-Bromofluorobenzene (PIL) 84.3 % 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	3050	4.00	11/05/2010	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	313	10.0	11/08/2010	ND	38.3	95.8	40.0	1.44	

TDS 160.1		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	5400	5.00	11/08/2010	ND				1.93	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/04/2010
Reported: 11/12/2010
Project Name: EME JUNCTION A-20
Project Number: NONE GIVEN
Project Location: T20S-R37E-SEC20 A ~ LEA CTY ~ NM

Sampling Date: 11/03/2010
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: MONITOR WELL #2 (H021232-02)

BTX 8021B		mg/L		Analyzed By: cms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	11/11/2010	ND	0.024	94.5	0.0250		
Toluene*	<0.001	0.001	11/11/2010	ND	0.024	94.2	0.0250		
Ethylbenzene*	<0.001	0.001	11/11/2010	ND	0.023	92.4	0.0250		
Total Xylenes*	<0.003	0.003	11/11/2010	ND	0.070	93.6	0.0750		

Surrogate: 4-Bromofluorobenzene (PIL) 92.8 % 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	2650	4.00	11/05/2010	ND	104	104	100	0.00	

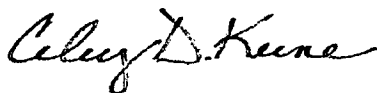
Sulfate 375.4		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	552	10.0	11/08/2010	ND	38.3	95.8	40.0	1.44	

TDS 160.1		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	5780	5.00	11/08/2010	ND				1.93	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/04/2010
Reported: 11/12/2010
Project Name: EME JUNCTION A-20
Project Number: NONE GIVEN
Project Location: T20S-R37E-SEC20 A ~ LEA CTY ~ NM

Sampling Date: 11/03/2010
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: MONITOR WELL #3 (H021232-03)

BTX 8021B		mg/L		Analyzed By: cms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	11/11/2010	ND	0.024	94.5	0.0250		
Toluene*	0.002	0.001	11/11/2010	ND	0.024	94.2	0.0250		
Ethylbenzene*	<0.001	0.001	11/11/2010	ND	0.023	92.4	0.0250		
Total Xylenes*	<0.003	0.003	11/11/2010	ND	0.070	93.6	0.0750		

Surrogate: 4-Bromofluorobenzene (PIL) 95.5 % 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	2900	4.00	11/05/2010	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	669	10.0	11/08/2010	ND	38.3	95.8	40.0	1.44	

TDS 160.1		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	5700	5.00	11/08/2010	ND				1.93	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/04/2010
Reported: 11/12/2010
Project Name: EME JUNCTION A-20
Project Number: NONE GIVEN
Project Location: T20S-R37E-SEC20 A ~ LEA CTY ~ NM

Sampling Date: 11/03/2010
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: MONITOR WELL #4 (H021232-04)

BTX 80218		mg/L		Analyzed By: cms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	11/11/2010	ND	0.024	94.5	0.0250		
Toluene*	<0.001	0.001	11/11/2010	ND	0.024	94.2	0.0250		
Ethylbenzene*	<0.001	0.001	11/11/2010	ND	0.023	92.4	0.0250		
Total Xylenes*	<0.003	0.003	11/11/2010	ND	0.070	93.6	0.0750		

Surrogate: 4-Bromofluorobenzene (PIL) 94.5 % 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	3500	4.00	11/05/2010	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	872	10.0	11/08/2010	ND	38.3	95.8	40.0	1.44	

TDS 160.1		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	6760	5.00	11/08/2010	ND				1.93	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/04/2010
Reported: 11/12/2010
Project Name: EME JUNCTION A-20
Project Number: NONE GIVEN
Project Location: T20S-R37E-SEC20 A ~ LEA CTY ~ NM

Sampling Date: 11/03/2010
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: MONITOR WELL #5 (H021232-05)

BTEX 80218		mg/L		Analyzed By: cms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	11/11/2010	ND	0.024	94.5	0.0250		
Toluene*	<0.001	0.001	11/11/2010	ND	0.024	94.2	0.0250		
Ethylbenzene*	<0.001	0.001	11/11/2010	ND	0.023	92.4	0.0250		
Total Xylenes*	<0.003	0.003	11/11/2010	ND	0.070	93.6	0.0750		

Surrogate: 4-Bromofluorobenzene (PII) 96.4 % 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	2250	4.00	11/05/2010	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	702	10.0	11/08/2010	ND	38.3	95.8	40.0	1.44	

TDS 160.1		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	4690	5.00	11/08/2010	ND				1.93	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/04/2010
Reported: 11/12/2010
Project Name: EME JUNCTION A-20
Project Number: NONE GIVEN
Project Location: T20S-R37E-SEC20 A ~ LEA CTY ~ NM

Sampling Date: 11/03/2010
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: RECOVERY WELL #1 (H021232-06)

BTX 8021B		mg/L		Analyzed By: cms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	11/11/2010	ND	0.024	94.5	0.0250		
Toluene*	0.002	0.001	11/11/2010	ND	0.024	94.2	0.0250		
Ethylbenzene*	<0.001	0.001	11/11/2010	ND	0.023	92.4	0.0250		
Total Xylenes*	<0.003	0.003	11/11/2010	ND	0.070	93.6	0.0750		

Surrogate: 4-Bromofluorobenzene (PIL) 91.1 % 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	3550	4.00	11/05/2010	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	791	10.0	11/08/2010	ND	38.3	95.8	40.0	1.44	

TDS 160.1		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS	6910	5.00	11/08/2010	ND				1.93	

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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

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Cardinal Laboratories, Inc.

101 East Merland - Hobbs, New Mexico 88240
Tel (575) 393-2326
Fax (575) 393-2476

Company Name: RICE Operating Company		BILL TO Company: RICE Operating Company		PO# 	
Project Manager: Hack Conder		Address: 122 W Taylor Street ~ Hobbs, New Mexico 88240		(Street, City, Zip) 	
Address: 122 W Taylor Street ~ Hobbs, New Mexico 88240		Phone#: (575) 393-9174		Fax#: (575) 397-1471	
Phone #: (575) 393-9174		Fax #: (575) 397-1471			
Project #: EME Junction A-20		Project Name: EME Junction A-20			
Project Location: T20S-R37E-Sec20 A ~ Lea County - New Mexico		Sampler Signature: <i>Rozanne Johnson</i>		Sampler Signature: Rozanne Johnson (575) 631-9310	

LAB #	FIELD CODE	(G)rab or (C)omp	MATRIX			PRESERVATIVE METHOD					SAMPLING	
			WATER	AIR	SLUDGE	HCL (2.4ml VOA)	HNO ₃	NaHSO ₄	H ₂ SO ₄	ICE (1-Liter HDPE)	DATE (2010)	TIME
HZ1232	Monitor Well #1	G	X			2				1	11-3	13:10
A-C-2	Monitor Well #2	G	X			2				1	11-3	9:45
3	Monitor Well #3	G	X			2				1	11-3	12:00
4	Monitor Well #4	G	X			2				1	11-3	10:55
5	Monitor Well #5	G	X			2				1	11-3	8:50
6	Recovery Well #1	G	X			2				1	11-3	13:25

LAB Order ID #		ANALYSIS REQUEST (Circle or Specify Method No.)	
TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	PCBs 8082/608	PCBs 8082/625
GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	Pesticides 8081A/608	BOD, TSS, pH
Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , CO ₃ , HCO ₃)	Sulfates
Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours	

Phone Results	Yes	No
Fax Results	Yes	No
Additional Fax Number:		

REMARKS:

ert Email Results to hconder@riceswd.com
 hweinheimer@riceswd.com
 klanes@riceswd.com
 rozanne@valornet.com

CHECKED BY:

(Initials)

Sample Condition

Cool

Yes

No

Delivered By: (Circle One)

UPS - Bus - Other:

Sampler