

**APPROVED**

# **RICE** *Operating Company*

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**April 1, 2021**

## **Bradford Billings**

Environmental Bureau, Oil Conservation Division

New Mexico Energy, Minerals, & Natural Resources Department

1220 S. St. Francis Drive

Santa Fe, New Mexico 87505

**RE: 2020 Annual Groundwater Report**

**Rice Operating Company – EME SWD System**

**EME Jct. G-18 (1R427-162): UL/G, Sec. 18, T19S, R37E**

Mr. Billings:

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

The site is located approximately 3 miles northwest of Monument, New Mexico at UL/G, Sec. 18, T19S, R37E as shown on the Geographic Location Map. Monitor well sampling at the site indicates that groundwater has been encountered at approximately 54 ft below ground surface (bgs).

In 2004, ROC initiated work on the former EME G-18 junction box. The site was delineated using a backhoe to collect soil samples at regular intervals. The excavation reached dimensions of 20 ft x 18 ft x 12 ft (bgs). Composite samples were sent to a commercial laboratory for chloride and TPH analyses, resulting in elevated concentration of chlorides in the bottom composite, elevated concentrations of TPH and BTEX. A 1-ft thick clay layer was installed from 6-5 ft bgs, to inhibit further chloride migration and a compaction test was performed on April 16<sup>th</sup>, 2004. The site was backfilled, the area was contoured to the surrounding landscape and an identification plate was placed on the surface of the site to mark its location for future environmental considerations. A new junction box was not required at the site.

Between June 2<sup>nd</sup>, 2004 and December 6<sup>th</sup>, 2010, five soil bores and three monitor wells were drilled at and surrounding the former junction box. An ICP Report and CAP was then submitted to the NMOCD, which detailed the findings of the soil borings. The report requested a 6-month source removal and test pumping program and that MW-1 be plugged and replaced with a 4 inch well. In addition, a 44 ft x 49 ft, 20-mil reinforced liner would be installed at 4-5 ft bgs. NMOCD approved the plan on July 18<sup>th</sup>, 2011.

Beginning on November 23<sup>rd</sup>, 2011, the site was excavated to 44x49x5-ft deep. The excavation was padded with six inches of the imported sand and then the liner was properly seated at approximately 4.5 ft bgs. The top of the liner was padded with six inches of imported sand and

Review of 2020 Annual  
Groundwater Report: **Content**  
**satisfactory**

Based on the eight consecutive  
quarters of monitoring well data  
being below WQCC standards,  
termination request is hereby  
approved. No further action is  
required.

the excavation was backfilled and contoured to the surrounding location. The 20-mil reinforced liner will inhibit the further migration of chloride through the vadose zone into groundwater. The site was seeded with a blend of native vegetation and a silt net fence was placed around the area to maintain seed integrity. On October 15<sup>th</sup>, 2012, ROC submitted a Soil Closure Request to NMOCD that detailed these activities and asked for 'Soil Closure' or similar closure status. NMOCD approved the soil closure on the same day.

On October 26<sup>th</sup>, 2011, MW-1 was plugged and abandoned with a 1-3% bentonite/concrete slurry and capped with three feet of concrete. MW-1 was then replaced with a 4 inch well (MW-1R) which was installed 9 ft southeast of the former MW-1.

On April 17<sup>th</sup>, 2012, ROC submitted the Vadose Zone Remediation and Termination Request to NMOCD. ROC had completed the vadose zone remediation approved by NMOCD in the CAP and plugged and replaced MW-1 with MW-1R. A 6-month source removal and test pumping program from MW-1R that was described in the CAP was deemed no longer necessary because two quarters of monitor well sampling data showed chlorides below WQCC standards. Therefore, ROC requested 'remediation termination' status of regulatory file. On June 5<sup>th</sup>, 2012, NMOCD responded with a request for two more quarters of monitor well sampling data from MW-1R prior to terminating the remediation plan.

The two additional sampling events of MW-1R occurred on November 1<sup>st</sup>, 2012 resulting in a chloride value of 570 mg/kg and on February 8<sup>th</sup>, 2013 also resulting in a chloride value of 570 mg/kg. Given that these two sampling events show chlorides above WQCC standards, ROC continued with a 6-month source removal and test pumping program from MW-1R that was described in the CAP. This path forward was approved by NMOCD on July 2<sup>nd</sup>, 2013.

Groundwater recovery began on September 16<sup>th</sup>, 2013 from MW-1R and continued through November 2015. During that time, approximately 7,263 barrels of groundwater were removed which equates to approximately 277 kg of chlorides, based on a chloride concentration of 240 mg/L. Since groundwater recovery began, chloride and TDS concentrations in MW-1R have decreased with chloride concentrations being below 250 mg/L and TDS concentrations being below 1,000 mg/L for eight consecutive quarters. Therefore, the pumping program has been suspended. BTEX concentrations have remained below detectable limits since the wells were installed. In 2020, NMOCD granted approval to cease BTEX sampling.

Based on the eight consecutive quarters of monitoring well data being below WQCC standards, ROC submitted a Termination Request on February 25<sup>th</sup>, 2021. The Termination Request is currently pending NMOCD review and response.

Attached is the Appendix, which contains:

1. A Geographic Location Map.
2. A map showing well locations.
3. A table presenting all laboratory results and depth to groundwater for each well at the site, and a graph showing recent laboratory results.
4. The laboratory analytical results for 2020.

Rice Operating Company appreciates the opportunity to work with you on this project. Please contact me at (575) 393-9174 or Edward Hansen at (505) 920-4965 if you have any questions or wish to further discuss this site. Thank you for your time and consideration.

Sincerely,

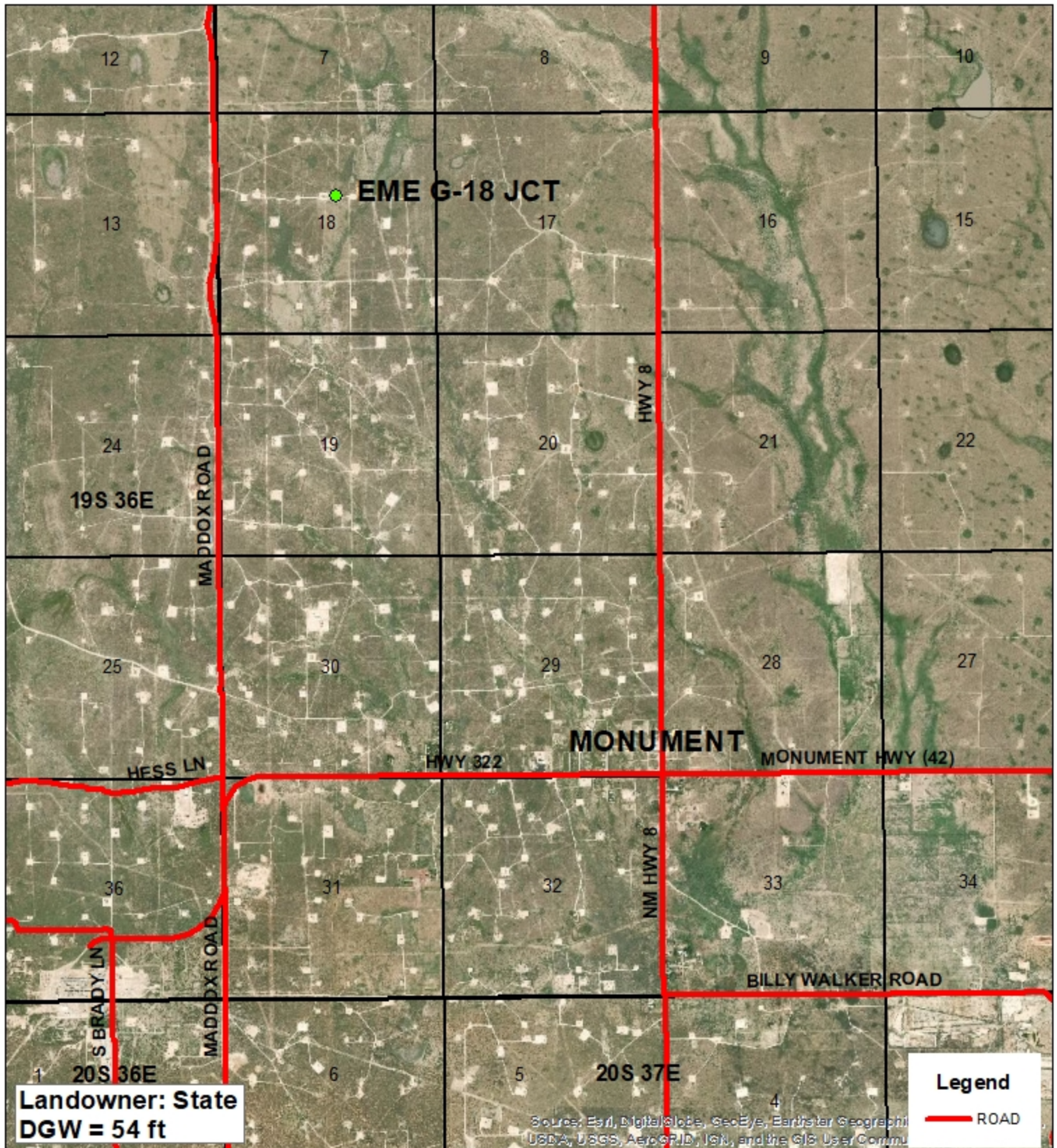
A handwritten signature in cursive script that reads "Katie Davis".

Katie Davis  
Environmental Manager  
RICE Operating Company (ROC)

Cc – Edward J. Hansen (ROC)

appendix

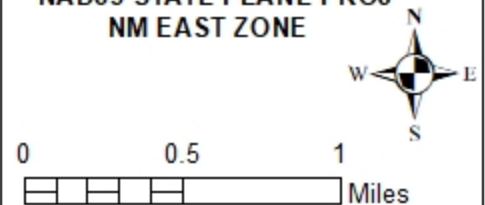




**EME**  
**JCT G-18**  
1R427-162

UL G SECTION 18  
T-19-S R-37-E  
LEA COUNTY, NM

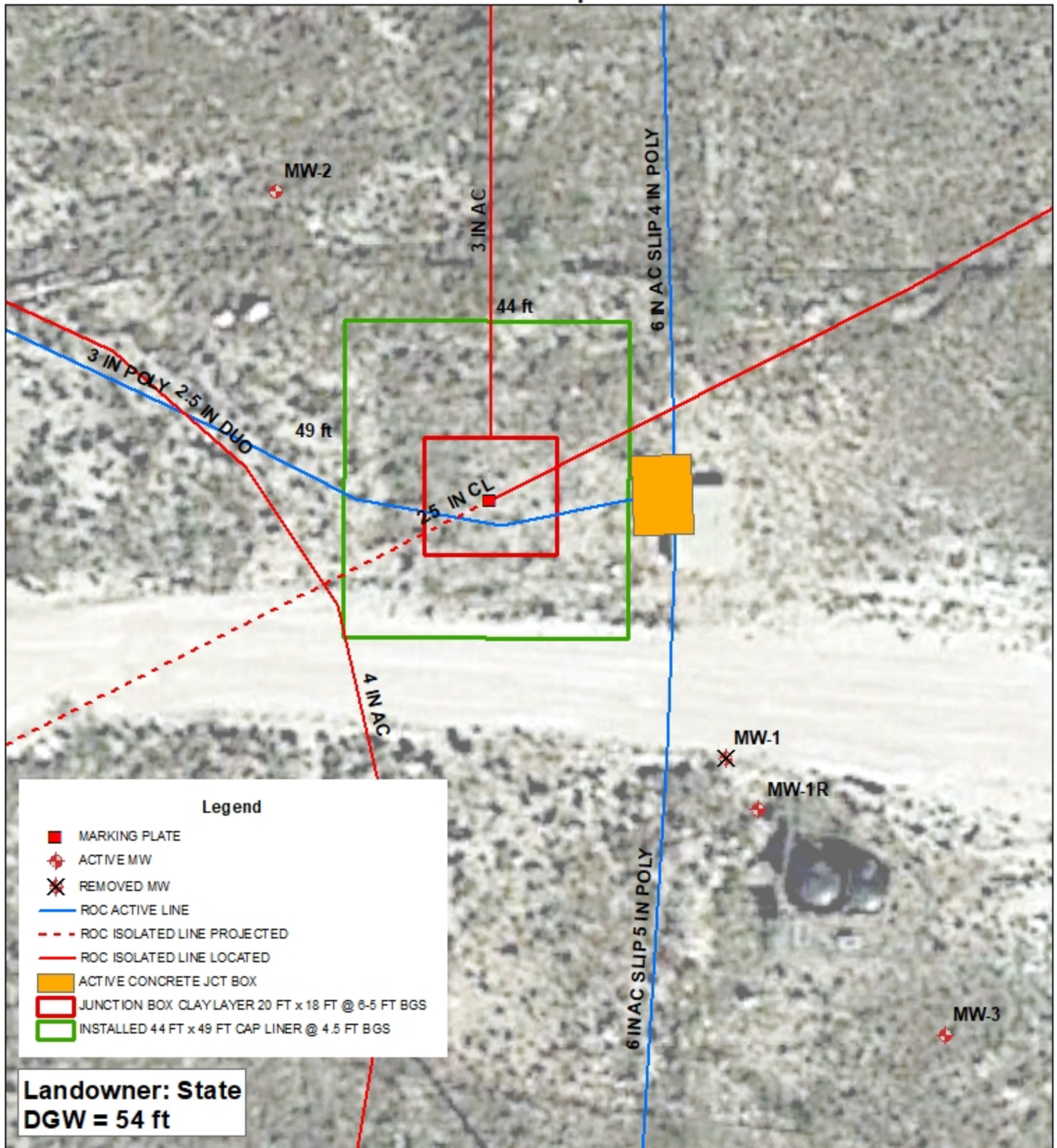
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NAD83 STATE PLANE PROJ  
NM EAST ZONE



Drawing date: 2/3/20  
Drafted by: T. Grieco



## Site Map



**EME**  
**JCT G-18**  
1R427-162

UL G SECTION 18  
T-19-S R-37-E  
LEA COUNTY, NM

GPS: 32.662229 -103.289861  
NAD83 STATE PLANE PROJ  
NM EAST ZONE



0 10 20  
Feet

Drawing date: 2/3/20  
Drafted by: T. Grieco

## ROC - EME Jct. G-18 (1R427-162)

## Unit Letter G, Section 18, T19S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	53.51	68.28	2.4	8	12/28/2010	630	1,810	<0.001	<0.001	<0.001	<0.003	308	Clear No odor
1	53.71	68.28	2.3	8	3/4/2011	470	1,670	<0.001	<0.001	<0.001	<0.003	282	Clear No odor
1	54.11	68.28	2.3	8	5/31/2011	550	1,560	<0.001	<0.001	<0.001	<0.003	217	Clear No odor
1	54.33	68.28	2.2	8	8/29/2011	550	1,420	<0.001	<0.001	<0.001	<0.003	174	Clear No odor
1R	54.4	100.15	29.7	100	11/14/2011	200	768	<0.001	<0.001	<0.001	<0.003	98.2	Clear No odor - replaced with 4 inch
1R	54.64	100.15	29.6	100	2/14/2012	192	713	<0.001	<0.001	<0.001	<0.003	78.1	Clear No odor
1R	54.83	100.15	29.5	100	5/23/2012	360	1,060	<0.001	<0.001	<0.001	<0.003	99.4	Clear No odor
1R	54.92	100.15	29.4	100	7/13/2012	308	1,060	<0.001	<0.001	<0.001	<0.003	117	Clear No odor
1R	55.17	100.15	29.2	100	11/1/2012	570	1,750	<0.001	<0.001	<0.001	<0.003	209	Clear No odor
1R	55.28	100.15	29.2	100	2/8/2013	570	1,660	<0.001	<0.001	<0.001	<0.003	243	Clear No odor
1R	55.47	100.15	29	100	5/22/2013	516	1,560	<0.001	<0.001	<0.001	<0.003	213	Clear No odor
1R	55.26	100.15	29.2	100	9/3/2013	850	2,270	<0.001	<0.001	<0.001	<0.003	531	Clear No odor
1R	XXX	100.15	XXX	running	11/11/2013	236	770	<0.001	<0.001	<0.001	<0.003	77.8	Clear No odor
1R	XXX	100.15	XXX	100	3/3/2014	490	1,900	<0.001	<0.001	<0.001	<0.003	381	Clear No odor
1R	XXX	100.15	XXX	running	5/28/2014	256	830	<0.001	<0.001	<0.001	<0.003	74	Clear No odor
1R	XXX	100.15	XXX	running	8/15/2014	268	830	<0.001	<0.001	<0.001	<0.003	76.1	Clear No odor
1R	XXX	100.15	XXX	running	11/19/2014	96	704	<0.001	<0.001	<0.001	<0.003	60.6	Clear No odor
1R	XXX	100.15	XXX	100	2/20/2015	328	1,090	<0.001	<0.001	<0.001	<0.003	136	Clear No odor
1R	XXX	100.15	XXX	100	5/28/2015	208	826	<0.001	<0.001	<0.001	<0.003	87.4	Clear No odor
1R	XXX	100.15	XXX	100	8/14/2015	196	736	<0.001	<0.001	<0.001	<0.003	51.6	Clear No odor
1R	XXX	100.15	XXX	running	11/9/2015	240	774	<0.001	<0.001	<0.001	<0.003	78	Clear No odor
1R	XXX	100.15	XXX	100	2/22/2016	140	880	<0.001	<0.001	<0.001	<0.003	112	Clear No odor
1R	XXX	100.15	XXX	100	5/11/2016	60	802	<0.001	<0.001	<0.001	<0.003	183	Clear No odor
1R	XXX	100.15	XXX	100	9/9/2016	348	1,190	<0.001	<0.001	<0.001	<0.003	134	Clear No odor
1R	XXX	100.15	XXX	100	11/9/2016	52	964	<0.001	<0.001	<0.001	<0.003	337	Clear No odor
1R	XXX	100.15	XXX	100	2/17/2017	104	982	<0.001	<0.001	<0.001	<0.003	273	Clear No odor
1R	XXX	100.15	XXX	100	5/22/2017	76	766	<0.001	<0.001	<0.001	<0.003	77	Clear No odor
1R	XXX	100.15	XXX	100	9/6/2017	80	1,280	<0.001	<0.001	<0.001	<0.003	505	Clear No odor

## ROC - EME Jct. G-18 (1R427-162)

## Unit Letter G, Section 18, T19S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1R	XXX	100-15	XXX	100	11/28/2017	232	938	<0.001	<0.001	<0.001	<0.003	114	Clear No odor
1R	XXX	100-15	XXX	100	2/26/2018	164	1,110	<0.001	<0.001	<0.001	<0.003	261	Clear No odor
1R	XXX	100-15	XXX	100	5/14/2018	124	1,000	<0.001	<0.001	<0.001	<0.003	221	Clear No odor
1R	XXX	100-15	XXX	100	8/31/2018	416	1,430	<0.001	<0.001	<0.001	<0.003	151	Clear No odor
1R	XXX	100-15	XXX	100	11/9/2018	220	1,060	<0.001	<0.001	<0.001	<0.003	135	Clear No odor
1R	XXX	100.15	XXX	100	2/28/2019	140	605	<0.001	<0.001	<0.001	<0.003	85	Clear No odor
1R	XXX	100.15	XXX	100	5/23/2019	136	940	<0.001	<0.001	<0.001	<0.003	136	Clear No odor
1R	XXX	100.15	XXX	100	8/27/2019	84	886	<0.001	<0.001	<0.001	<0.003	165	Clear No odor
1R	XXX	100.15	XXX	100	11/14/2019	128	867	<0.001	<0.001	<0.001	<0.003	91	Clear No odor
1R	XXX	100.15	XXX	100	3/3/2020	140	912	<0.001	<0.001	<0.001	<0.003	111	Clear No odor
1R	XXX	100.15	XXX	100	5/29/2020	136	901	XXX	XXX	XXX	XXX	115	Clear No odor
1R	XXX	100.15	XXX	100	9/9/2020	132	947	XXX	XXX	XXX	XXX	132	Clear No odor
1R	XXX	100.15	XXX	100	10/30/2020	160	964	XXX	XXX	XXX	XXX	112	Clear No odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	53.58	70.22	2.7	10	3/4/2011	32	715	<0.001	<0.001	<0.001	<0.003	191	Clear No odor
2	53.98	70.22	2.6	10	5/31/2011	44	821	<0.001	<0.001	<0.001	<0.003	243	Clear No odor
2	54.21	70.22	2.6	10	8/29/2011	32	643	<0.001	<0.001	<0.001	<0.003	213	Clear No odor
2	54.39	70.22	2.5	10	11/14/2011	28	744	<0.001	<0.001	<0.001	<0.003	184	Clear No odor
2	54.39	70.22	2.5	10	2/14/2012	24	818	<0.001	<0.001	<0.001	<0.003	209	Clear No odor
2	54.82	70.22	2.5	10	5/23/2012	32	815	<0.001	<0.001	<0.001	<0.003	203	Clear No odor
2	54.91	70.22	2.4	10	7/13/2012	36	821	<0.001	<0.001	<0.001	<0.003	214	Clear No odor
2	55.15	70.22	2.4	10	11/1/2012	72	867	<0.001	<0.001	<0.001	<0.003	198	Clear No odor
2	55.32	70.22	2.4	10	2/8/2013	28	748	<0.001	<0.001	<0.001	<0.003	177	Clear No odor
2	55.43	70.22	2.4	10	5/22/2013	40	783	<0.001	<0.001	<0.001	<0.003	206	Clear No odor
2	55.28	70.22	2.4	10	9/3/2013	28	686	<0.001	<0.001	<0.001	<0.003	131	Clear No odor
2	55.54	70.22	2.3	10	11/11/2013	28	721	<0.001	<0.001	<0.001	<0.003	155	Clear No odor
2	55.57	70.22	2.3	10	3/3/2014	40	704	<0.001	<0.001	<0.001	<0.003	166	Clear No odor



**ROC - EME Jct. G-18 (1R427-162)****Unit Letter G, Section 18, T19S, R37E**

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	55.74	70.22	2.3	10	5/28/2014	32	766	<0.001	<0.001	<0.001	<0.003	153	Clear No odor
2	55.83	70.22	2.3	10	8/15/2014	20	748	<0.001	<0.001	<0.001	<0.003	183	Clear No odor
2	54.44	70.22	2.5	10	11/19/2014	80	682	<0.001	<0.001	<0.001	<0.003	55.3	Clear No odor
2	54.14	70.22	2.6	10	2/20/2015	32	866	<0.001	<0.001	<0.001	<0.003	183	Clear No odor
2	54.52	70.22	2.5	10	5/28/2015	28	942	<0.001	<0.001	<0.001	<0.003	244	Clear No odor
2	54.53	70.22	2.5	10	8/14/2015	44	848	<0.001	<0.001	<0.001	<0.003	190	Clear No odor
2	54.8	70.22	2.47	10	11/9/2015	20	742	<0.001	<0.001	<0.001	<0.003	186	Clear No odor
2	54.63	70.22	2.5	10	2/22/2016	20	788	<0.001	<0.001	<0.001	<0.003	176	Clear No odor
2	54.52	70.22	2.5	10	5/11/2016	32	734	<0.001	<0.001	<0.001	<0.003	184	Clear No odor
2	54.82	70.22	2.6	10	9/9/2016	20	874	<0.001	<0.001	<0.001	<0.003	225	Clear No odor
2	54.83	70.22	2.6	10	11/9/2016	24	696	<0.001	<0.001	<0.001	<0.003	192	Clear No odor
2	53.75	70.22	2.6	10	2/17/2017	88	752	<0.001	<0.001	<0.001	<0.003	78	Clear No odor
2	53.56	70.22	2.7	10	5/22/2017	92	696	<0.001	<0.001	<0.001	<0.003	79	Clear No odor
2	54.8	70.22	2.7	10	9/6/2017	32	860	<0.001	<0.001	<0.001	<0.003	202	Clear No odor
2	54.78	70.22	2.7	10	11/28/2017	56	864	<0.001	<0.001	<0.001	<0.003	229	Clear No odor
2	54.76	70.22	2.5	10	2/26/2018	32	472	<0.001	<0.001	<0.001	<0.003	188	Clear No odor
2	54.73	70.22	2.5	10	5/14/2008	28	706	<0.001	<0.001	<0.001	<0.003	185	Clear No odor
2	54.98	70.22	2.4	10	8/31/2018	36	668	<0.001	<0.001	<0.001	<0.003	147	Clear No odor
2	54.2	70.22	2.6	10	11/9/2018	28	606	<0.001	<0.001	<0.001	<0.003	232	Clear No odor
2	54.19	70.22	2.6	10	2/28/2019	40	422	<0.001	<0.001	<0.001	<0.003	168	Clear No odor
2	54.16	70.22	2.6	10	5/23/2019	40	704	<0.001	<0.001	<0.001	<0.003	167	Clear No odor
2	55.38	70.22	2.4	10	8/27/2019	40	594	<0.001	<0.001	<0.001	<0.003	120	Clear No odor
2	55.59	70.22	2.3	10	11/14/2019	36	749	<0.001	<0.001	<0.001	<0.003	146	Clear No odor
2	55.65	70.22	2.3	10	3/3/2020	36	556	<0.001	<0.001	<0.001	<0.003	140	Clear No odor
2	55.96	70.22	2.3	10	5/29/2020	36	724	XXX	XXX	XXX	XXX	150	Clear No odor
2	56.16	70.22	2.2	10	9/9/2020	48	795	XXX	XXX	XXX	XXX	174	Clear No odor
2	55.26	70.22	2.4	10	10/30/2020	36	604	XXX	XXX	XXX	XXX	144	Clear No odor

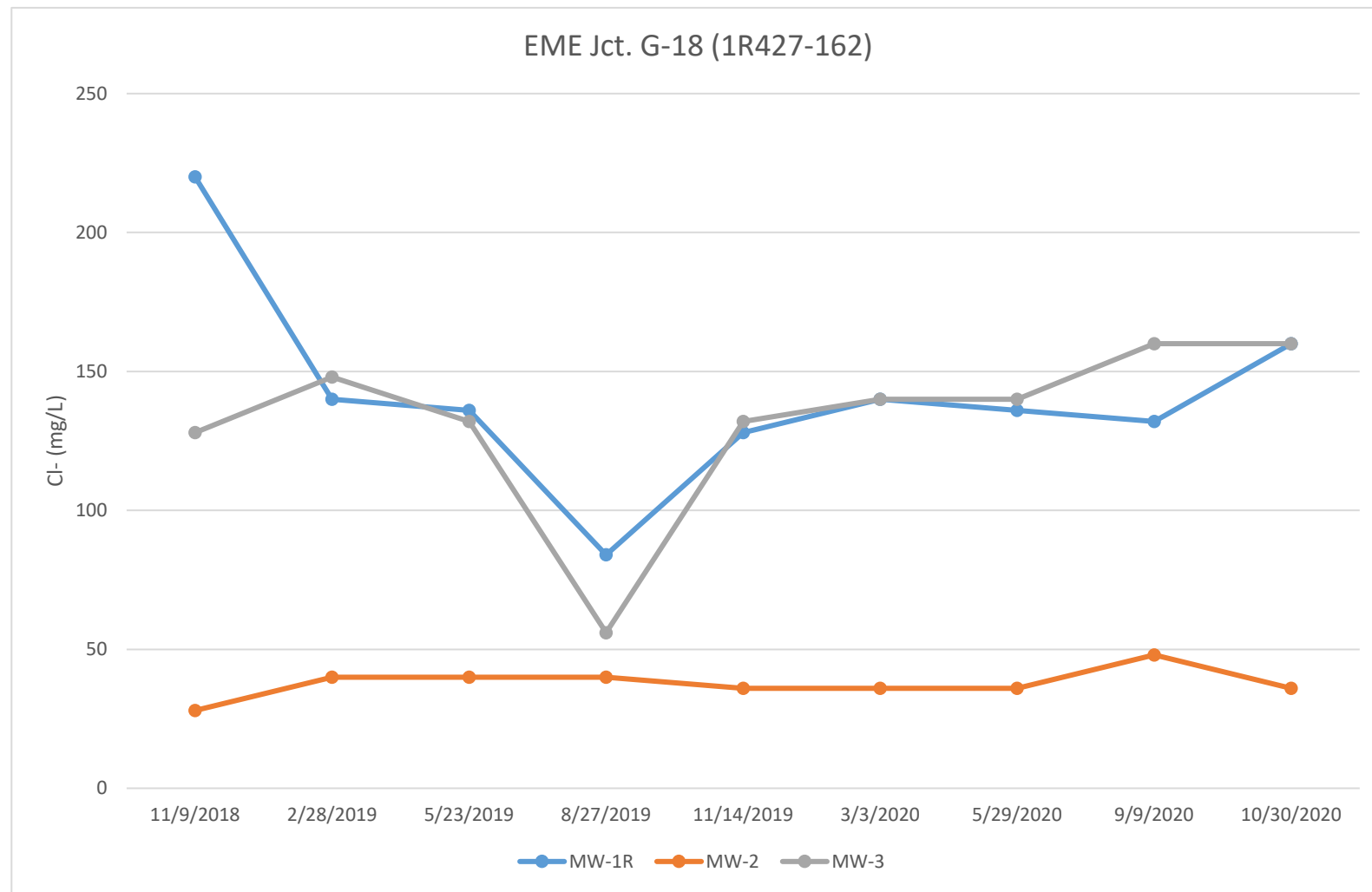


**ROC - EME Jct. G-18 (1R427-162)****Unit Letter G, Section 18, T19S, R37E**

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	52.55	70.23	2.8	10	3/4/2011	80	687	<0.001	<0.001	<0.001	<0.003	97	Clear No odor
3	52.96	70.23	2.8	10	5/31/2011	80	632	<0.001	<0.001	<0.001	<0.003	94.3	Clear No odor
3	53.17	70.23	2.7	10	8/29/2011	84	685	<0.001	<0.001	<0.001	<0.003	93.8	Clear No odor
3	53.34	70.23	2.7	10	11/14/2011	72	708	<0.001	<0.001	<0.001	<0.003	93.2	Clear No odor
3	53.58	70.23	2.7	10	2/14/2012	85	753	<0.001	<0.001	<0.001	<0.003	99.5	Clear No odor
3	53.75	70.23	2.6	10	5/23/2012	76	705	<0.001	<0.001	<0.001	<0.003	92.6	Clear No odor
3	53.84	70.23	2.6	10	7/13/2012	60	766	<0.001	<0.001	<0.001	<0.003	91.8	Clear No odor
3	54.14	70.23	2.6	10	11/1/2012	76	783	<0.001	<0.001	<0.001	<0.003	88.3	Clear No odor
3	55.27	70.23	2.4	10	2/8/2013	80	734	<0.001	<0.001	<0.001	<0.003	84	Clear No odor
3	55.38	70.23	2.4	10	5/22/2013	76	750	<0.001	<0.001	<0.001	<0.003	71.6	Clear No odor
3	54.17	70.23	2.6	10	9/3/2013	60	683	<0.001	<0.001	<0.001	<0.003	71.9	Clear No odor
3	54.51	70.23	2.5	10	11/11/2013	48	712	<0.001	<0.001	<0.001	<0.003	76.4	Clear No odor
3	54.54	70.23	2.5	10	3/3/2014	80	734	<0.001	<0.001	<0.001	<0.003	84.6	Clear No odor
3	54.73	70.23	2.5	10	5/28/2014	96	758	<0.001	<0.001	<0.001	<0.003	92.4	Clear No odor
3	54.94	70.23	2.4	10	8/15/2014	84	708	<0.001	<0.001	<0.001	<0.003	76.5	Clear No odor
3	53.38	70.23	2.7	10	11/19/2014	24	806	<0.001	<0.001	<0.001	<0.003	249	Clear No odor
3	53.12	70.23	2.7	10	2/20/2015	80	738	<0.001	<0.001	<0.001	<0.003	65	Clear No odor
3	53.56	70.23	2.7	10	5/28/2015	84	754	<0.001	<0.001	<0.001	<0.003	84.8	Clear No odor
3	53.64	70.23	2.7	10	8/14/2015	76	730	<0.001	<0.001	<0.001	<0.003	54	Clear No odor
3	53.88	70.23	2.62	10	11/9/2015	32	712	<0.001	<0.001	<0.001	<0.003	192	Clear No odor
3	53.64	70.23	2.7	10	2/22/2016	80	710	<0.001	<0.001	<0.001	<0.003	77	Clear No odor
3	53.53	70.23	2.7	10	5/11/2016	64	792	<0.001	<0.001	<0.001	<0.003	175	Clear No odor
3	54.83	70.23	2.6	10	9/9/2016	76	620	<0.001	<0.001	<0.001	<0.003	47	Clear No odor
3	53.84	70.23	2.6	10	11/9/2016	24	760	<0.001	<0.001	<0.001	<0.003	182	Clear No odor
3	53.76	70.23	2.6	10	2/17/2017	92	730	<0.001	<0.001	<0.001	<0.003	78	Clear No odor
3	53.58	70.23	2.7	10	5/22/2017	96	784	<0.001	<0.001	<0.001	<0.003	65	Clear No odor
3	54.83	70.23	2.7	10	9/6/2017	40	914	<0.001	<0.001	<0.001	<0.003	251	Clear No odor
3	54.81	70.23	2.7	10	11/28/2017	104	758	<0.001	<0.001	<0.001	<0.003	103	Clear No odor
3	54.78	70.23	2.5	10	2/26/2018	60	714	<0.001	<0.001	<0.001	<0.003	225	Clear No odor

**ROC - EME Jct. G-18 (1R427-162)****Unit Letter G, Section 18, T19S, R37E**

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	54.75	70.23	2.5	10	5/14/2018	96	886	<0.001	<0.001	<0.001	<0.003	227	Clear No odor
3	55.01	70.23	2.4	10	8/31/2018	140	764	<0.001	<0.001	<0.001	<0.003	73.4	Clear No odor
3	54.24	70.23	2.6	10	11/9/2018	128	468	<0.001	<0.001	<0.001	<0.003	76.4	Clear No odor
3	54.23	70.23	2.6	10	2/28/2019	148	822	<0.001	<0.001	<0.001	<0.003	88	Clear No odor
3	54.21	70.23	2.6	10	5/23/2019	132	808	<0.001	<0.001	<0.001	<0.003	86	Clear No odor
3	55.41	70.23	2.4	10	8/27/2019	56	793	<0.001	<0.001	<0.001	<0.003	154	Clear No odor
3	55.62	70.23	2.3	10	11/14/2019	132	890	<0.001	<0.001	<0.001	<0.003	91	Clear No odor
3	55.69	70.23	2.3	10	3/3/2020	140	888	<0.001	<0.001	<0.001	<0.003	107	Clear No odor
3	56.01	70.23	2.3	10	5/29/2020	140	917	XXX	XXX	XXX	XXX	126	Clear No odor
3	56.21	70.23	2.2	10	9/9/2020	160	960	XXX	XXX	XXX	XXX	112	Clear No odor
3	55.3	70.23	2.4	10	10/30/2020	160	866	XXX	XXX	XXX	XXX	105	Clear No odor







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

---

March 10, 2020

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION G-18

Enclosed are the results of analyses for samples received by the laboratory on 03/05/20 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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 (V1, 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	03/05/2020	Sampling Date:	03/03/2020
Reported:	03/10/2020	Sampling Type:	Water
Project Name:	EME JUNCTION G-18	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T19S-R37E-SEC18 G-LEA COUNTY, NM		

**Sample ID: MONITOR WELL #1 R (H000723-01)**

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/06/2020	ND	0.020	102	0.0200	0.425	
Toluene*	<0.001	0.001	03/06/2020	ND	0.020	99.8	0.0200	0.240	
Ethylbenzene*	<0.001	0.001	03/06/2020	ND	0.020	101	0.0200	0.0198	
Total Xylenes*	<0.003	0.003	03/06/2020	ND	0.060	99.6	0.0600	0.0921	
Total BTEX	<0.006	0.006	03/06/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 58.2-133

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	140	4.00	03/06/2020	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	111	25.0	03/05/2020	ND	22.5	113	20.0	2.28	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	912	5.00	03/10/2020	ND	526	105	500	2.86	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	03/05/2020	Sampling Date:	03/03/2020
Reported:	03/10/2020	Sampling Type:	Water
Project Name:	EME JUNCTION G-18	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T19S-R37E-SEC18 G-LEA COUNTY, NM		

**Sample ID: MONITOR WELL #2 (H000723-02)**

BTEX 8021B		mg/L		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.001	0.001	03/06/2020	ND	0.020	102	0.0200	0.425		
Toluene*	<0.001	0.001	03/06/2020	ND	0.020	99.8	0.0200	0.240		
Ethylbenzene*	<0.001	0.001	03/06/2020	ND	0.020	101	0.0200	0.0198		
Total Xylenes*	<0.003	0.003	03/06/2020	ND	0.060	99.6	0.0600	0.0921		
Total BTEX	<0.006	0.006	03/06/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 58.2-133

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	36.0	4.00	03/06/2020	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	140	25.0	03/05/2020	ND	22.5	113	20.0	2.28	

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	556	5.00	03/10/2020	ND	526	105	500	2.86		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	03/05/2020	Sampling Date:	03/03/2020
Reported:	03/10/2020	Sampling Type:	Water
Project Name:	EME JUNCTION G-18	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T19S-R37E-SEC18 G-LEA COUNTY, NM		

**Sample ID: MONITOR WELL #3 (H000723-03)**

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	03/06/2020	ND	0.020	102	0.0200	0.425	
Toluene*	<0.001	0.001	03/06/2020	ND	0.020	99.8	0.0200	0.240	
Ethylbenzene*	<0.001	0.001	03/06/2020	ND	0.020	101	0.0200	0.0198	
Total Xylenes*	<0.003	0.003	03/06/2020	ND	0.060	99.6	0.0600	0.0921	
Total BTEX	<0.006	0.006	03/06/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 58.2-133

Chloride, SM4500CI-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	140	4.00	03/06/2020	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	107	25.0	03/05/2020	ND	22.5	113	20.0	2.28		

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	888	5.00	03/10/2020	ND	526	105	500	2.86	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



---

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---

### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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\*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager

# Cardinal Laboratories, Inc.

## LAB Order ID #

BILL TO	Company:	PO#
RICE Operating Company		

Address: (Street, City, Zip)

Phone#:	Fax#:
(575) 393-9174	(575) 397-1471

Project #:	Project Name:
	EME Junction G-18

Project Location: T19S-R37E-Sec18 G ~ Lea County - New Mexico

(Circle or Specify Method No.)

Delivered By: (Circle One)	Sample Condition	CHECKED BY:	<a href="mailto:rozanne11@windstream.net">rozanne11@windstream.net</a>									
<div><div></div><div>Sampler - UPS - Bus - Other:</div></div>	<table><tr><td></td><td>Cool</td><td>Intact</td></tr><tr><td>Yes</td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td>No</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>		Cool	Intact	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	<input type="checkbox"/>	<div><div></div><div>(Initials)</div></div>	
	Cool	Intact										
Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
No	<input type="checkbox"/>	<input type="checkbox"/>										





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

---

June 04, 2020

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION G-18

Enclosed are the results of analyses for samples received by the laboratory on 06/01/20 14:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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 (V1, 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	06/01/2020	Sampling Date:	05/29/2020
Reported:	06/04/2020	Sampling Type:	Water
Project Name:	EME JUNCTION G-18	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T19S-R37E-SEC18 G-LEA COUNTY, NM		

**Sample ID: MONITOR WELL #1R (H001477-01)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	136	4.00	06/02/2020	ND	104	104	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	115	25.0	06/02/2020	ND	20.1	101	20.0	0.890		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	901	5.00	06/03/2020	ND	540	108	500	0.777		

**Sample ID: MONITOR WELL #2 (H001477-02)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	36.0	4.00	06/02/2020	ND	104	104	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	150	25.0	06/02/2020	ND	20.1	101	20.0	0.890		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	724	5.00	06/03/2020	ND	523	105	500	0.415		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	06/01/2020	Sampling Date:	05/29/2020
Reported:	06/04/2020	Sampling Type:	Water
Project Name:	EME JUNCTION G-18	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T19S-R37E-SEC18 G-LEA COUNTY, NM		

**Sample ID: MONITOR WELL #3 (H001477-03)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	140	4.00	06/02/2020	ND	104	104	100	0.00		
Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	126	25.0	06/02/2020	ND	20.1	101	20.0	0.890		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	917	5.00	06/03/2020	ND	523	105	500	0.415		

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



---

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### 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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A handwritten signature in cursive script, appearing to read "Celey D. Keene", written in black ink.

---

Celey D. Keene, Lab Director/Quality Manager




101 East Marland - Hobbs, NM 88240  
Tel (575) 393-2326  
Fax (575) 393-2476

# Cardinal Laboratories, Inc.

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # \_\_\_\_\_

Company Name: <b>RICE Operating Company</b>		BILL TO Company: <b>RICE Operating Company</b>		PO#
Project Manager: <b>Katie Jones</b>		Address: (Street, City, Zip) <b>122 W Taylor Street ~ Hobbs, New Mexico 88240</b>		
Address: (Street, City, Zip) <b>122 W Taylor Street ~ Hobbs, New Mexico 88240</b>		Phone#: <b>(575) 393-9174</b>		Fax#: <b>(575)397-1471</b>
Phone #: <b>(575) 393-9174</b>		Fax #: <b>(575)397-1471</b>		
Project #:		Project Name: <b>EME Junction G-18</b>		
Project Location: <b>T19S-R37E-Sec18 G ~ Lea County - New Mexico</b>		 Sampler Signature: <b>Rozanne Johnson (575)631-9310</b>		

## ANALYSIS REQUEST

(Circle or Specify Method No.)

[illegible]

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Rozanne Johnson	6/1/2020	14:35	Lamora P. [Signature]	6-1-20	1435
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date:	Time:

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

Delivered By: (Circle One) <u>Sampler</u> - UPS - Bus - Other:	Sample Condition <table border="1"> <thead> <tr> <th></th> <th>Cool</th> <th>Intact</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>No</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		Cool	Intact	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	<input type="checkbox"/>	CHECKED BY: (Initials) 
	Cool	Intact									
Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
No	<input type="checkbox"/>	<input type="checkbox"/>									

**Email Results:** [kjones@riceswd.com](mailto:kjones@riceswd.com)  
[rozanne11@windstream.net](mailto:rozanne11@windstream.net)



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

---

September 17, 2020

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION G-18

Enclosed are the results of analyses for samples received by the laboratory on 09/11/20 13:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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 (V1, 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,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	09/11/2020	Sampling Date:	09/09/2020
Reported:	09/17/2020	Sampling Type:	Water
Project Name:	EME JUNCTION G-18	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T19S-R37E-SEC18 G-LEA COUNTY, NM		

**Sample ID: MONITOR WELL #1 R (H002419-01)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	132	4.00	09/14/2020	ND	100	100	100	3.92		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	120	25.0	09/14/2020	ND	18.6	92.8	20.0	2.12		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	947	5.00	09/15/2020	5.00	830	83.0	1000	1.14		

**Sample ID: MONITOR WELL #2 (H002419-02)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	48.0	4.00	09/14/2020	ND	100	100	100	3.92		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	174	25.0	09/14/2020	ND	18.6	92.8	20.0	2.12		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	795	5.00	09/15/2020	5.00	830	83.0	1000	1.14		

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  
 KATIE JONES  
 112 W. Taylor  
 Hobbs NM, 88240  
 Fax To: (575) 397-1471

Received:	09/11/2020	Sampling Date:	09/09/2020
Reported:	09/17/2020	Sampling Type:	Water
Project Name:	EME JUNCTION G-18	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T19S-R37E-SEC18 G-LEA COUNTY, NM		

**Sample ID: MONITOR WELL #3 (H002419-03)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	160	4.00	09/14/2020	ND	100	100	100	3.92		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	112	25.0	09/14/2020	ND	18.6	92.8	20.0	2.12		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	960	5.00	09/15/2020	5.00	830	83.0	1000	1.14		

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Celey D. Keene, Lab Director/Quality Manager

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

---

### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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\*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager



# Cardinal Laboratories, Inc.

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # \_\_\_\_\_

**ANALYSIS REQUEST**  
(Circle or Specify Method No.)

[illegible]

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

Sample Condition

CHECKED BY:

	Cool	Intact
Yes	Yes	Yes
No	No	No

(Initials)

Email Results: [kjones@riceswd.com](mailto:kjones@riceswd.com)  
[rozanne@sdacres.com](mailto:rozanne@sdacres.com)



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

---

November 09, 2020

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION G-18

Enclosed are the results of analyses for samples received by the laboratory on 11/02/20 15:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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 (V1, 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	11/02/2020	Sampling Date:	10/30/2020
Reported:	11/09/2020	Sampling Type:	Water
Project Name:	EME JUNCTION G-18	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T19S-R37E-SEC18 G-LEA COUNTY, NM		

**Sample ID: MONITOR WELL #1R (H002889-01)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	160	4.00	11/03/2020	ND	104	104	100	3.92		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	112	25.0	11/05/2020	ND	23.8	119	20.0	6.41		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	964	5.00	11/05/2020	ND	553	111	500	4.83		

**Sample ID: MONITOR WELL #2 (H002889-02)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	36.0	4.00	11/03/2020	ND	104	104	100	3.92		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	144	25.0	11/05/2020	ND	23.8	119	20.0	6.41		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	604	5.00	11/05/2020	ND	553	111	500	4.83		

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\*=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  
 KATIE JONES  
 112 W. Taylor  
 Hobbs NM, 88240  
 Fax To: (575) 397-1471

Received:	11/02/2020	Sampling Date:	10/30/2020
Reported:	11/09/2020	Sampling Type:	Water
Project Name:	EME JUNCTION G-18	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T19S-R37E-SEC18 G-LEA COUNTY, NM		

**Sample ID: MONITOR WELL #3 (H002889-03)**

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	160	4.00	11/03/2020	ND	104	104	100	3.92		
Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	105	25.0	11/05/2020	ND	23.8	119	20.0	6.41		
TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	866	5.00	11/06/2020	ND	553	111	500	4.83		

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

---

### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager

# Cardinal Laboratories, Inc.

LAB Order ID #

**ANALYSIS REQUEST**  
(Circle or Specify Method No.)

Sampler Signature: Rozanne Johnson (575) 631-9310

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 Semi Volatiles  
TCLP Pesticides

TCLP Pesticide:

RCI

GC/MS Vol. 8260B/624

GC/MS Vol. 8260B/624  
GC/MS Semi. Vol. 8270C/625

3092/MS SEMI. VOI  
3092/MS SEMI. VOI

PCB's 8082/608

Pesticides 8081A/608

BOD, TSS, pH

Moisture Content

Moisture Content

Cations (Ca, Mg, Na, K)  
Anions (Cl, SO<sub>4</sub>, CO<sub>3</sub>, HCO<sub>3</sub>)

Anions (Cl, Sulfates)

Sulfates

Total Dissolved Solids (TDS)

Chlorides

Turn Around Time ~ 24 Hours

Phone Results	Yes	No
---------------	-----	----

Fax Results	Yes	No
-------------	-----	----

No

No

Additional Fax Number:

Sample Condition

CHECKED BY:

	Cool	Intact
Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>	<input type="checkbox"/>

(Initials)

Email Results: [kjones@riceswd.com](mailto:kjones@riceswd.com)  
[rozanne@sdacres.com](mailto:rozanne@sdacres.com)

Sampler - UPS - Bus - Other:

**District I**

1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS

Action 24220

**CONDITIONS**

Operator: RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	OGRID: 19174
	Action Number: 24220
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

**CONDITIONS**

Created By	Condition	Condition Date
nvelez	Review of 2020 Annual Groundwater Report: Content satisfactory 1. Based on the eight consecutive quarters of monitoring well data being below WQCC standards, termination request is hereby approved. No further action is required.	1/31/2022