

REVIEWED

By Nelson Velez at 7:17 am, Oct 06, 2022

L Peter Galusky, Jr PE

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April 1, 2022

Bradford Billings

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

RE: **2021 Annual Report**

OCD Case Number: 1R427-87

Rice Operating Company – EME SWD System

H-20 SWD (UL H, Sec 20, T20S, R37E)

Sent by E-mail

Mr. Billings:

Review of 2021 Annual Report: Content satisfactory

1. Continue sampling on a bi-annual schedule at a minimum
2. OCD requires at least one groundwater flow direction map be included in future annual reports
3. Submit summarized activities completed and their results in a 2022 Annual Report. Submittal to OCD expected no later than March 31, 2023.
4. OCD requires an abatement option(s) be submitted for pre-approval no later than March 31, 2023 to accelerate the reduction in the current chloride & TDS levels found in all site monitor wells. OCD suggest arranging a meeting to discuss options to mitigate the elevated values.

This letter summarizes progress made over the past year pursuant to the NMOCD approved Corrective Action Plan for this site. An active SWD produced water disposal facility is operated at this location by Rice Operating Company (ROC). This project is located in the EME field approximately 4 miles south of Monument, New Mexico (Appendix, Figure 1). Over the course of 2021 we continued to monitor up and down-gradient monitor wells (Appendix, Figure 2) for chlorides and petroleum hydrocarbons (BTEX).

In brief:

Groundwater chloride concentrations are given in the Appendix, Figure 3 and Tables 1&2. Year average groundwater chloride concentrations (Table 1) in the near-source monitor well (MW-1) increased from 980 mg/l in 2020 to 1,028 mg/l in 2021. Year average groundwater chloride concentrations in the up-gradient monitor well (MW-2) increased from 800 mg/l in 2020 to 963 mg/l in 2021. Year average groundwater chlorides in the down-gradient monitor well (MW-3) were essentially unchanged, measuring 1,020 mg/l in 2020 versus 1,013 mg/l in 2021. Year average groundwater chloride concentrations in the far down-gradient monitor well (MW-4) decreased from 1,220 mg/l in 2020 to 1,178 mg/l in 2021. Year average groundwater chloride concentrations in the east side-gradient monitor well (MW-5) dropped from 1,035 mg/l in 2020 to 910 mg/l in 2021.

Groundwater benzene concentrations are given in the Appendix, Figure 4 and Tables 3&4. Year average groundwater benzene concentrations (Table 3) in the near-source monitor well (MW-1) dropped from 0.016 mg/l in 2020 to 0.012 mg/l in 2021. Year average benzene concentrations in the up-gradient

Rice Operating Company EME H-20 SWD Annual Report

monitor well (MW-2) has remained at the laboratory limit of detection of 0.001 mg/l from 2018 through 2021. Year average benzene concentrations in the downgradient monitor well (MW-3) dropped significantly from 0.030 mg/l in 2020 to 0.005 mg/l in 2021. Year average benzene concentrations in the far down-gradient monitor well (MW-4) has remained at the laboratory limit of detection of 0.001 mg/l from 2018 through 2021, as they have in the east side/down-gradient monitor well (MW-5) from 2011 through 2021.

Groundwater chloride concentrations in the down and side-gradient wells continue to slowly, if unevenly, converging toward the prevailing upgradient values (roughly 900 to 1,000 mg/l). Groundwater benzene concentrations in the near and down-source monitor wells are less than half of their high values of over a decade ago, but do not yet exhibit a clear and consistent downward trend. ROC will continue quarterly sampling in 2022.

ROC is the service provider (agent) for the EME Salt Water Disposal 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 Partners, who provide all operating capital on a percentage ownership/usage basis.

Please contact either Katie Jones of Rice Operating Company or me if you have any questions or need additional information.

Thank you.

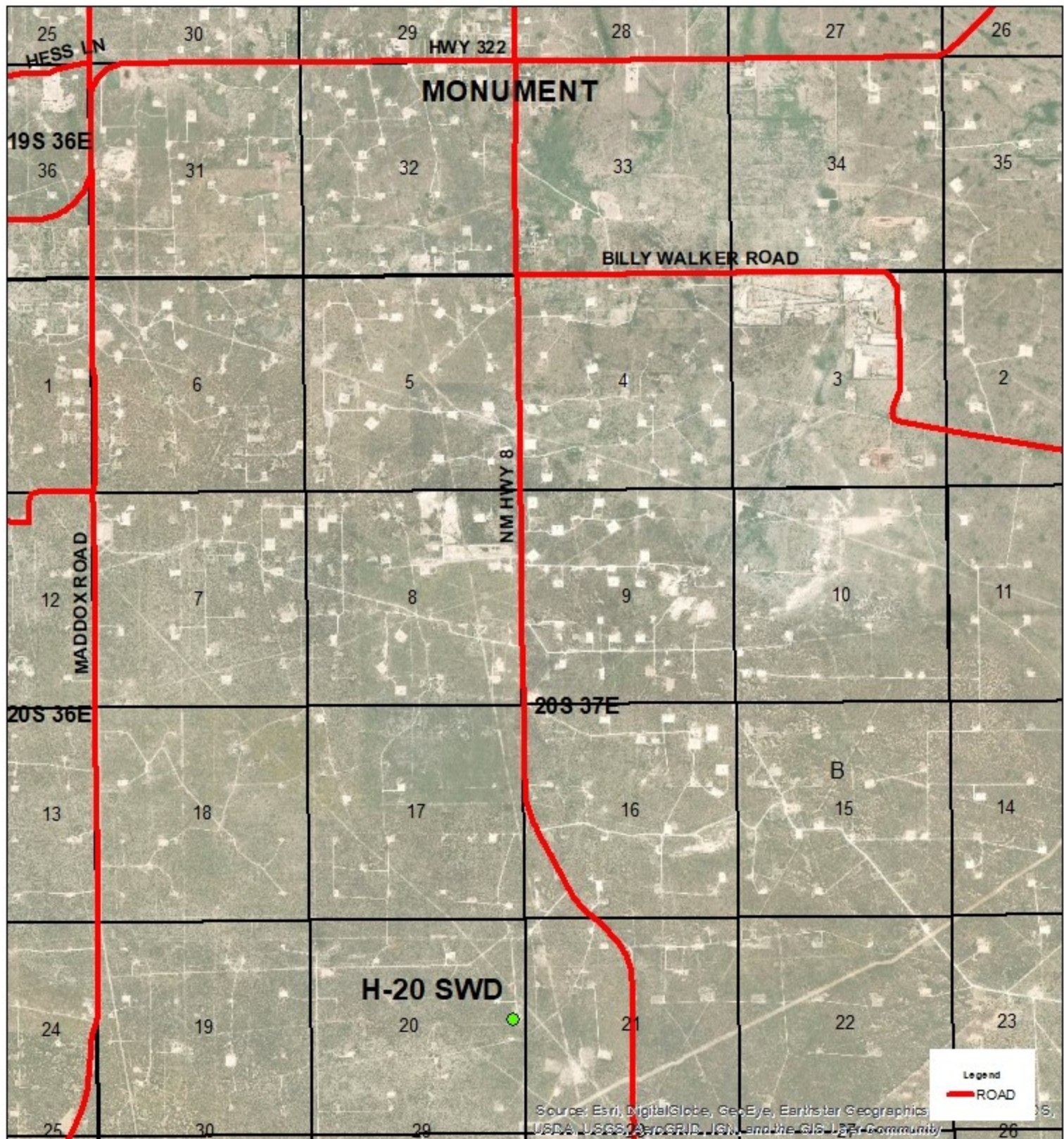
Sincerely,



L. Peter Galusky, Jr. P.E.
NM Prof. Engineer No. 22561

Copy: Rice Operating Company
Attachments: ... as noted, above.

Geographic Location



EME
H-20 SWD
1R427-87

UL H SECTION 20
T-20-S R-37-E
LEA COUNTY, NM

GPS: 32.559077-103.265553
NAD83 STATE PLANE PROJ
NM EAST ZONE

0 0.5 1
Miles



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

Site Map



EME
H-20 SWD
1R427-87

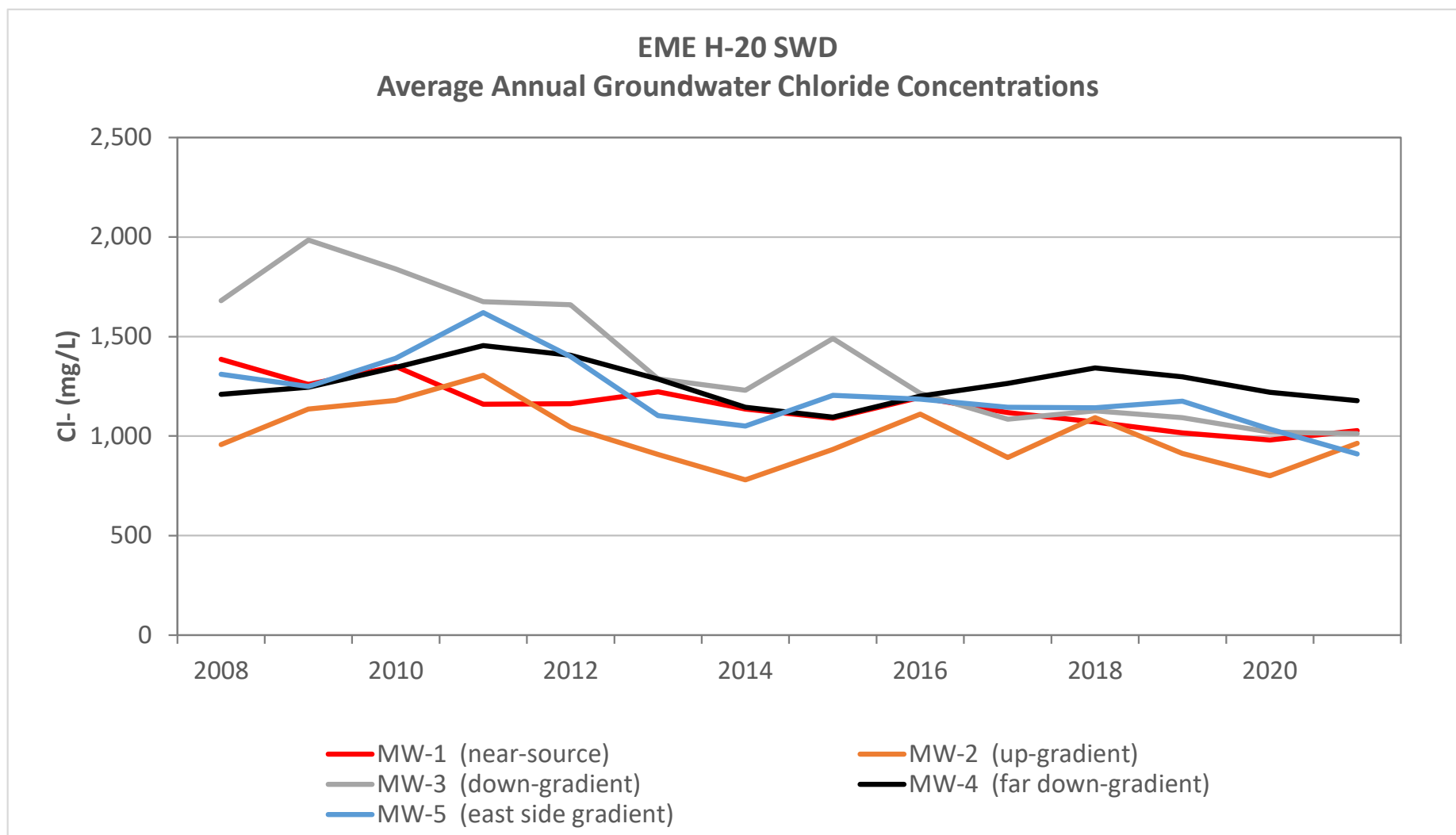
UL H SECTION 20
T-20-S R-37-E
LEA COUNTY, NM

GPS: 32.559077-103.265553
NAD83 STATE PLANE PROJ
NM EAST ZONE

0 25 50
Feet

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





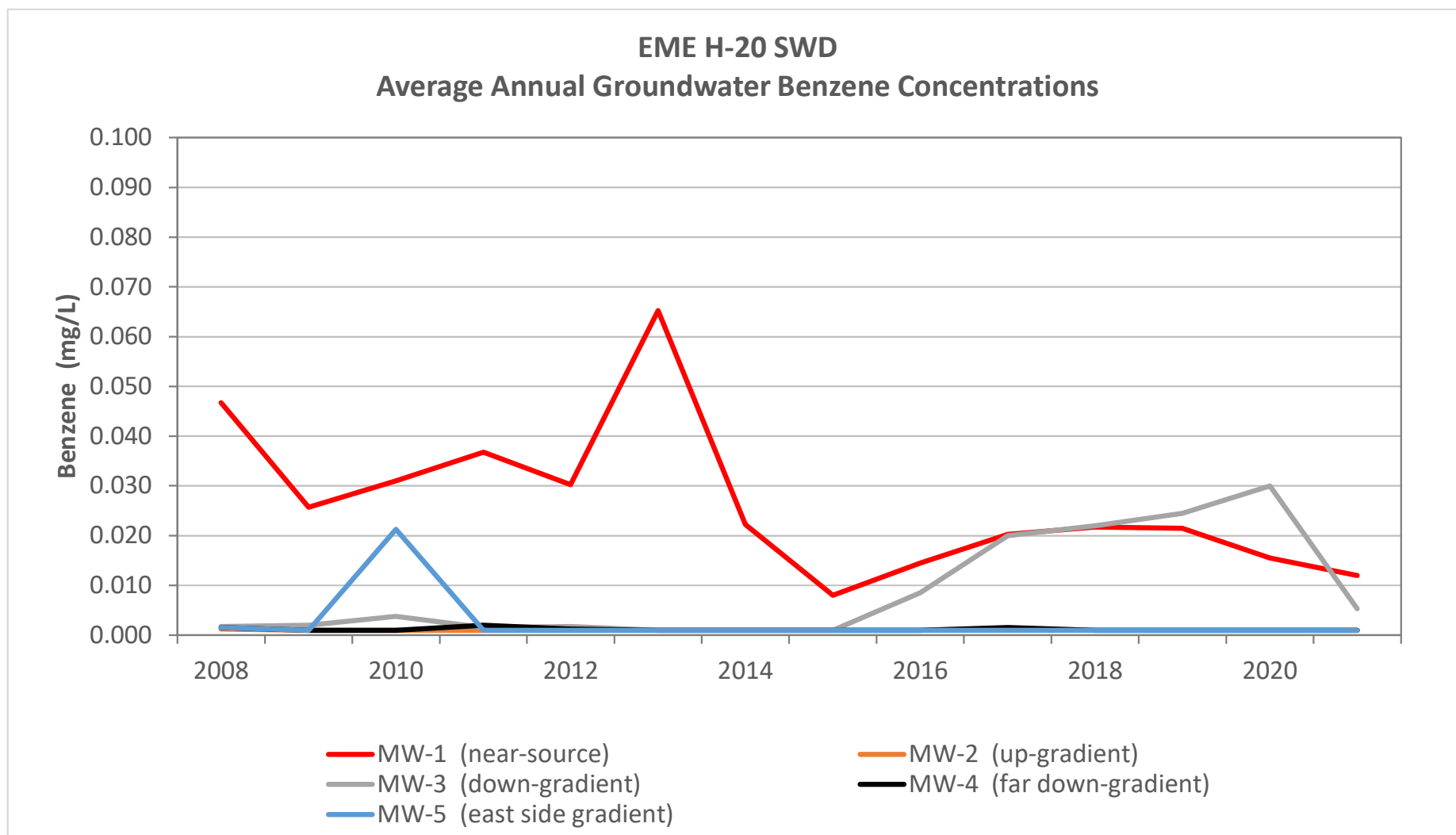
EME H-20 SWD Groundwater Chloride Concentrations
Average Annual Values (mg/l)

	MW-1 (near-source)	MW-2 (up-gradient)	MW-3 (down-gradient)	MW-4 (far down- gradient)	MW-5 (east side gradient)
2008	1,385	958	1,680	1,210	1,310
2009	1,260	1,135	1,985	1,245	1,250
2010	1,350	1,180	1,840	1,345	1,390
2011	1,160	1,305	1,675	1,455	1,620
2012	1,163	1,045	1,660	1,405	1,400
2013	1,223	908	1,288	1,285	1,103
2014	1,135	780	1,230	1,145	1,050
2015	1,090	932	1,490	1,095	1,205
2016	1,195	1,110	1,215	1,200	1,185
2017	1,118	893	1,085	1,265	1,145
2018	1,070	1,093	1,128	1,343	1,143
2019	1,015	913	1,093	1,298	1,175
2020	980	800	1,020	1,220	1,035
2021	1,028	963	1,013	1,178	910

EME H-20 SWD Groundwater Chloride Concentrations (mg/l)

Sample Date	MW-1 (near source)		MW-2 (upgradient)		MW-3 (downgradient)		MW-4 (far downgradient)		MW-5 (east side gradient)	
	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)
4/23/2007	1,939									
7/12/2007	1,230									
11/1/2007	1,260		1,100		1,710					
1/18/2008	1,420	1,385	980	958	1,420	1,680				
4/9/2008	1,380	1,385	840	958	1,220	1,680				
7/21/2008	1,440	1,385	1,000	958	2,140	1,680	1,300		1,400	
10/20/2008	1,300	1,385	1,010	958	1,940	1,680	1,120		1,220	
2/5/2009	1,360	1,260	1,080	1,135	1,480	1,985	1,200	1,245	1,180	1,250
5/8/2009	1,220	1,260	1,120	1,135	1,840	1,985	1,340	1,245	1,320	1,250
8/14/2009	1,180	1,260	1,140	1,135	2,570	1,985	1,240	1,245	1,240	1,250
11/4/2009	1,280	1,260	1,200	1,135	2,050	1,985	1,200	1,245	1,260	1,250
2/17/2010	1,360	1,350	1,080	1,180	1,420	1,840	1,380	1,345	1,260	1,390
5/19/2010	1,280	1,350	1,180	1,180	1,640	1,840	1,340	1,345	1,340	1,390
8/11/2010	1,460	1,350	1,120	1,180	2,150	1,840	1,380	1,345	1,400	1,390
11/4/2010	1,300	1,350	1,340	1,180	2,150	1,840	1,280	1,345	1,560	1,390
2/25/2011	1,160	1,160	1,680	1,305	1,580	1,675	1,440	1,455	1,600	1,620
5/20/2011	1,220	1,160	1,120	1,305	1,880	1,675	1,500	1,455	1,680	1,620
8/11/2011	1,080	1,160	1,140	1,305	1,580	1,675	1,400	1,455	1,600	1,620
11/9/2011	1,180	1,160	1,280	1,305	1,660	1,675	1,480	1,455	1,600	1,620
2/8/2012	1,170	1,163	1,060	1,045	1,480	1,660	1,500	1,405	1,560	1,400
5/20/2012	1,100	1,163	1,040	1,045	1,400	1,660	1,360	1,405	1,480	1,400
8/7/2012	1,160	1,163	1,020	1,045	1,920	1,660	1,360	1,405	1,320	1,400
10/31/2012	1,220	1,163	1,060	1,045	1,840	1,660	1,400	1,405	1,240	1,400
1/30/2013	1,180	1,223	1,040	908	1,240	1,288	1,220	1,285	1,140	1,103
5/14/2013	1,230	1,223	960	908	1,250	1,288	1,340	1,285	1,200	1,103
8/14/2013	1,360	1,223	860	908	1,580	1,288	1,400	1,285	1,070	1,103
10/31/2013	1,120	1,223	770	908	1,080	1,288	1,180	1,285	1,000	1,103
2/18/2014	1,100	1,135	740	780	1,040	1,230	1,200	1,145	1,000	1,050
4/24/2014	1,080	1,135	830	780	1,020	1,230	1,240	1,145	1,060	1,050
7/31/2014	1,060	1,135	730	780	1,080	1,230	1,220	1,145	1,040	1,050
11/6/2014	1,300	1,135	820	780	1,780	1,230	920	1,145	1,100	1,050
2/12/2015	1,030	1,090	950	932	1,520	1,490	1,080	1,095	1,040	1,205
5/6/2015	1,120	1,090	860	932	1,260	1,490	1,040	1,095	1,200	1,205
8/11/2015	1,090	1,090	939	932	1,660	1,490	1,120	1,095	1,220	1,205
11/5/2015	1,120	1,090	980	932	1,520	1,490	1,140	1,095	1,360	1,205
2/10/2016	1,040	1,195	1,160	1,110	1,280	1,215	1,080	1,200	1,240	1,185
5/9/2016	1,300	1,195	1,160	1,110	1,380	1,215	1,140	1,200	1,080	1,185
9/8/2016	1,200	1,195	1,160	1,110	1,060	1,215	1,260	1,200	1,120	1,185
11/8/2016	1,240	1,195	960	1,110	1,140	1,215	1,320	1,200	1,300	1,185
2/16/2017	1,240	1,118	920	893	1,140	1,085	1,160	1,265	1,180	1,145
4/28/2017	1,040	1,118	900	893	1,108	1,085	1,200	1,265	1,180	1,145
9/5/2017	1,200	1,118	920	893	1,060	1,085	1,340	1,265	1,160	1,145
11/8/2017	990	1,118	830	893	1,030	1,085	1,360	1,265	1,060	1,145
2/23/2018	1,040	1,070	1,070	1,093	990	1,128	1,170	1,343	1,060	1,143
5/8/2018	1,240	1,070	1,240	1,093	1,340	1,128	1,500	1,343	1,230	1,143
8/30/2018	1,020	1,070	1,080	1,093	1,080	1,128	1,460	1,343	1,140	1,143
11/8/2018	980	1,070	980	1,093	1,100	1,128	1,240	1,343	1,140	1,143
2/27/2019	1,080	1,015	950	913	1,200	1,093	1,400	1,298	1,280	1,175

Sample Date	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)
5/22/2019	990	1,015	1,000	913	1,090	1,093	1,230	1,298	1,280	1,175
8/26/2019	930	1,015	870	913	1,040	1,093	1,240	1,298	1,100	1,175
11/13/2019	1,060	1,015	830	913	1,040	1,093	1,320	1,298	1,040	1,175
3/2/2020	1,000	980	800	800	1,060	1,020	1,220	1,220	1,090	1,035
9/8/2020	960	980	800	800	980	1,020	1,220	1,220	980	1,035
3/4/2021	1,040	1,028	900	963	1,080	1,013	1,180	1,178	1,040	910
6/8/2021	920	1,028	1,000	963	960	1,013	1,100	1,178	960	910
9/7/2021	1,100	1,028	1,000	963	1,060	1,013	1,280	1,178	590	910
11/4/2021	1,050	1,028	950	963	950	1,013	1,150	1,178	1,050	910



EME H-20 SWD Groundwater Benzene Concentrations (mg/l)

	MW-1	MW-2	MW-3	MW-4	MW-5
	(near- source)	(up- gradient)	(down- gradient)	(far down- gradient)	(east side gradient)
2008	0.047	0.001	0.002	0.002	0.002
2009	0.026	0.001	0.002	0.001	0.001
2010	0.031	0.001	0.004	0.001	0.021
2011	0.037	0.001	0.002	0.002	0.001
2012	0.030	0.001	0.002	0.001	0.001
2013	0.065	0.001	0.001	0.001	0.001
2014	0.022	0.001	0.001	0.001	0.001
2015	0.008	0.001	0.001	0.001	0.001
2016	0.015	0.001	0.009	0.001	0.001
2017	0.020	0.001	0.020	0.002	0.001
2018	0.022	0.001	0.022	0.001	0.001
2019	0.022	0.001	0.025	0.001	0.001
2020	0.016	0.001	0.030	0.001	0.001
2021	0.012	0.001	0.005	0.001	0.001

EME H-20 SWD Groundwater Benzene Concentrations (mg/l)

Sample Date	MW-1 (near source)		MW-2 (upgradient)		MW-3 (downgradient)		MW-4 (far downgradient)		MW-5 (east side gradient)	
	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)	Measured Value (mg/l)	Calendar Yr Avg (mg/l)
4/23/2007	0.060									
7/12/2007	0.068									
11/1/2007	0.059		0.002		0.002					
1/18/2008	0.052	0.047	0.001	0.001	0.002	0.002				
4/9/2008	0.032	0.047	0.001	0.001	0.002	0.002				
7/21/2008	0.048	0.047	0.002	0.001	0.002	0.002	0.002	0.000	0.002	0.000
10/20/2008	0.055	0.047	0.001	0.001	0.001	0.002	0.001	0.000	0.001	0.000
2/5/2009	0.031	0.026	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001
5/8/2009	0.031	0.026	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001
8/14/2009	0.024	0.026	0.001	0.001	0.002	0.002	0.001	0.001	0.001	0.001
11/4/2009	0.017	0.026	0.001	0.001	0.004	0.002	0.001	0.001	0.001	0.001
2/17/2010	0.030	0.031	0.001	0.001	0.005	0.004	0.001	0.001	0.001	0.021
5/19/2010	0.006	0.031	0.001	0.001	0.005	0.004	0.001	0.001	0.001	0.021
8/11/2010	0.014	0.031	0.001	0.001	0.002	0.004	0.001	0.001	0.001	0.021
11/4/2010	0.074	0.031	0.001	0.001	0.003	0.004	0.001	0.001	0.082	0.021
2/25/2011	0.033	0.037	0.001	0.001	0.002	0.002	0.001	0.002	0.001	0.001
5/20/2011	0.056	0.037	0.001	0.001	0.002	0.002	0.001	0.002	0.001	0.001
8/11/2011	0.034	0.037	0.001	0.001	0.001	0.002	0.004	0.002	0.001	0.001
11/9/2011	0.024	0.037	0.001	0.001	0.001	0.002	0.002	0.002	0.001	0.001
2/8/2012	0.028	0.030	0.001	0.001	0.003	0.002	0.002	0.001	0.001	0.001
5/20/2012	0.027	0.030	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001
8/7/2012	0.040	0.030	0.001	0.001	0.002	0.002	0.001	0.001	0.001	0.001
10/31/2012	0.026	0.030	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001
1/30/2013	0.044	0.065	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5/14/2013	0.082	0.065	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8/14/2013	0.074	0.065	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
10/31/2013	0.061	0.065	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2/18/2014	0.038	0.022	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
4/24/2014	0.037	0.022	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7/31/2014	0.013	0.022	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11/6/2014	0.001	0.022	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2/12/2015	0.029	0.008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
5/6/2015	0.001	0.008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
8/11/2015	0.001	0.008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11/5/2015	0.001	0.008	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
2/10/2016	0.024	0.015	0.001	0.001	0.001	0.009	0.001	0.001	0.001	0.001
5/9/2016	0.001	0.015	0.001	0.001	0.001	0.009	0.001	0.001	0.001	0.001
9/8/2016	0.010	0.015	0.001	0.001	0.006	0.009	0.001	0.001	0.001	0.001
11/8/2016	0.023	0.015	0.001	0.001	0.026	0.009	0.001	0.001	0.001	0.001
2/16/2017	0.001	0.020	0.001	0.001	0.001	0.020	0.001	0.002	0.001	0.001
4/28/2017	0.014	0.020	0.001	0.001	0.023	0.020	0.001	0.002	0.001	0.001
9/5/2017	0.037	0.020	0.001	0.001	0.041	0.020	0.001	0.002	0.001	0.001
11/8/2017	0.029	0.020	0.002	0.001	0.015	0.020	0.003	0.002	0.001	0.001
2/23/2018	0.018	0.022	0.001	0.001	0.018	0.022	0.001	0.001	0.001	0.001
5/8/2018	0.001	0.022	0.001	0.001	0.001	0.022	0.001	0.001	0.001	0.001
8/30/2018	0.036	0.022	0.001	0.001	0.034	0.022	0.001	0.001	0.001	0.001
11/8/2018	0.032	0.022	0.001	0.001	0.035	0.022	0.001	0.001	0.001	0.001
2/27/2019	0.002	0.022	0.001	0.001	0.007	0.025	0.001	0.001	0.001	0.001
5/22/2019	0.019	0.022	0.001	0.001	0.006	0.025	0.001	0.001	0.001	0.001

Sample Date	Measured	Calendar	Measured	Calendar	Measured	Calendar	Measured	Calendar	Measured	Calendar
	Value (mg/l)	Yr Avg (mg/l)	Value (mg/l)	Yr Avg (mg/l)	Value (mg/l)	Yr Avg (mg/l)	Value (mg/l)	Yr Avg (mg/l)	Value (mg/l)	Yr Avg (mg/l)
8/26/2019	0.043	0.022	0.001	0.001	0.068	0.025	0.001	0.001	0.001	0.001
11/13/2019	0.022	0.022	0.001	0.001	0.017	0.025	0.001	0.001	0.001	0.001
3/2/2020	0.001	0.016	0.001	0.001	0.002	0.030	0.001	0.001	0.001	0.001
9/8/2020	0.030	0.016	0.001	0.001	0.058	0.030	0.001	0.001	0.001	0.001
3/4/2021	0.001	0.012	0.001	0.001	0.001	0.005	0.002	0.001	0.001	0.001
6/8/2021	0.030	0.012	0.001	0.001	0.013	0.005	0.001	0.001	0.001	0.001
9/7/2021	<0.001	0.012	0.001	0.001	0.002	0.005	0.002	0.001	0.001	0.001
11/4/2021	0.005	0.012	0.001	0.001	<0.001	0.005	0.001	0.001	0.001	0.001



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

March 15, 2021

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION H - 20

Enclosed are the results of analyses for samples received by the laboratory on 03/09/21 16:20.

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.

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:	03/09/2021	Sampling Date:	03/04/2021
Reported:	03/15/2021	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #1 (H210568-01)

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	03/11/2021	ND	0.020	102	0.0200	1.02	
Toluene*	<0.001	0.001	03/11/2021	ND	0.020	98.1	0.0200	1.85	
Ethylbenzene*	<0.001	0.001	03/11/2021	ND	0.020	98.8	0.0200	2.50	
Total Xylenes*	<0.003	0.003	03/11/2021	ND	0.061	101	0.0600	2.79	
Total BTEX	<0.006	0.006	03/11/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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*	1040	4.00	03/10/2021	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*	744	125	03/10/2021	ND	22.3	111	20.0	17.3	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3400	5.00	03/11/2021	ND	576	115	500	1.25	

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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: 03/09/2021
 Reported: 03/15/2021
 Project Name: EME JUNCTION H - 20
 Project Number: NONE GIVEN
 Project Location: T20S-R37E-SEC20 H-LEA CO NM

Sampling Date: 03/04/2021
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #2 (H210568-02)

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	03/11/2021	ND	0.020	102	0.0200	1.02	
Toluene*	<0.001	0.001	03/11/2021	ND	0.020	98.1	0.0200	1.85	
Ethylbenzene*	<0.001	0.001	03/11/2021	ND	0.020	98.8	0.0200	2.50	
Total Xylenes*	<0.003	0.003	03/11/2021	ND	0.061	101	0.0600	2.79	
Total BTEX	<0.006	0.006	03/11/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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*	900	4.00	03/10/2021	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*	730	125	03/10/2021	ND	22.3	111	20.0	17.3		

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	2830	5.00	03/11/2021	ND	576	115	500	1.25	

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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:	03/09/2021	Sampling Date:	03/04/2021
Reported:	03/15/2021	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #3 (H210568-03)

BTX 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	03/11/2021	ND	0.020	102	0.0200	1.02	
Toluene*	<0.001	0.001	03/11/2021	ND	0.020	98.1	0.0200	1.85	
Ethylbenzene*	<0.001	0.001	03/11/2021	ND	0.020	98.8	0.0200	2.50	
Total Xylenes*	<0.003	0.003	03/11/2021	ND	0.061	101	0.0600	2.79	
Total BTX	<0.006	0.006	03/11/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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*	1080	4.00	03/10/2021	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*	860	125	03/10/2021	ND	22.3	111	20.0	17.3		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	3380	5.00	03/11/2021	ND	576	115	500	1.25		

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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: 03/09/2021
 Reported: 03/15/2021
 Project Name: EME JUNCTION H - 20
 Project Number: NONE GIVEN
 Project Location: T20S-R37E-SEC20 H-LEA CO NM

Sampling Date: 03/04/2021
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #4 (H210568-04)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.002	0.001	03/11/2021	ND	0.020	102	0.0200	1.02	
Toluene*	<0.001	0.001	03/11/2021	ND	0.020	98.1	0.0200	1.85	
Ethylbenzene*	<0.001	0.001	03/11/2021	ND	0.020	98.8	0.0200	2.50	
Total Xylenes*	<0.003	0.003	03/11/2021	ND	0.061	101	0.0600	2.79	
Total BTEX	<0.006	0.006	03/11/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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*	1180	4.00	03/10/2021	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*	804	125	03/10/2021	ND	22.3	111	20.0	17.3		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	3640	5.00	03/11/2021	ND	576	115	500	1.25		

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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: 03/09/2021
 Reported: 03/15/2021
 Project Name: EME JUNCTION H - 20
 Project Number: NONE GIVEN
 Project Location: T20S-R37E-SEC20 H-LEA CO NM

Sampling Date: 03/04/2021
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #5 (H210568-05)

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	03/11/2021	ND	0.020	102	0.0200	1.02	
Toluene*	<0.001	0.001	03/11/2021	ND	0.020	98.1	0.0200	1.85	
Ethylbenzene*	<0.001	0.001	03/11/2021	ND	0.020	98.8	0.0200	2.50	
Total Xylenes*	<0.003	0.003	03/11/2021	ND	0.061	101	0.0600	2.79	
Total BTEX	<0.006	0.006	03/11/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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*	1040	4.00	03/10/2021	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*	715	125	03/10/2021	ND	22.3	111	20.0	17.3		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	3350	5.00	03/11/2021	ND	576	115	500	1.25		

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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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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

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

Cardinal Laboratories, Inc.

Company Name: RICE Operating Company	BILL TO Company: RICE Operating Company	PO#
Project Manager: Katie Jones	Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240	
Address: (Street, City, Zip) 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 #:	Project Name: EME Junction H-20	

Project Location: **T20S-R37E-Sec20 H ~ Lea County - New Mexico**
Sampler Signature: *Rozanne Johnson* (575) 831-9310

120S-R37E-Sec20 H - Lea County - New Mexico

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX				PRESERVATIVE METHOD					SAMPLING		
				WATER	SOIL	AIR	SLUDGE	HCL (4-40ml VOA)	HNO ₃	NaHSO ₄	H ₂ SO ₄	ICE (1-1 Liter HDPE)	NONE	DATE (2021)	TIME
H210568															
1	Monitor Well #1	G	5	X				4				1		3/4	14:20
2	Monitor Well #2	G	5	X				4				1		3/4	9:40
3	Monitor Well #3	G	5	X				4				1		3/4	12:30
4	Monitor Well #4	G	5	X				4				1		3/4	15:55
5	Monitor Well #5	G	5	X				4				1		3/4	11:00

Relinquished by: *Rozanne Johnson* Date: **3/9/21** Time: **16:15**
Received by: *Rozanne Johnson* Date: **3-9-21** Time: **1620**

Relinquished by: _____ Date: _____ Time: _____
Received By: (Laboratory Staff) Date: _____ Time: _____

Delivered By: (Circle One) _____
Sample Condition: Cool ☒ Yes ☐ No ☐ Intact ☒ Yes ☐ No ☐
CHECKED BY: *TO*
Sampler - UPS - Bus - Other: _____

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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

REMARKS:

Email Results: kjones@riceswd.com
rozanne@sdacres.com



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

June 17, 2021

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION H - 20

Enclosed are the results of analyses for samples received by the laboratory on 06/11/21 13:55.

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.

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:	06/11/2021	Sampling Date:	06/08/2021
Reported:	06/17/2021	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #1 (H211505-01)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.030	0.001	06/14/2021	ND	0.021	103	0.0200	0.806	
Toluene*	0.002	0.001	06/14/2021	ND	0.020	97.9	0.0200	1.20	
Ethylbenzene*	0.006	0.001	06/14/2021	ND	0.019	96.8	0.0200	1.91	
Total Xylenes*	<0.003	0.003	06/14/2021	ND	0.060	101	0.0600	1.87	
Total BTEX	0.038	0.006	06/14/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 77.1-124

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	920	4.00	06/14/2021	ND	100	100	100	0.00	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	612	125	06/15/2021	ND	23.3	116	20.0	3.05	

TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3300	5.00	06/16/2021	ND	524	105	500	0.409	

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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: 06/11/2021
 Reported: 06/17/2021
 Project Name: EME JUNCTION H - 20
 Project Number: NONE GIVEN
 Project Location: T20S-R37E-SEC20 H-LEA CO NM

Sampling Date: 06/08/2021
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #2 (H211505-02)

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	06/14/2021	ND	0.021	103	0.0200	0.806	
Toluene*	<0.001	0.001	06/14/2021	ND	0.020	97.9	0.0200	1.20	
Ethylbenzene*	<0.001	0.001	06/14/2021	ND	0.019	96.8	0.0200	1.91	
Total Xylenes*	<0.003	0.003	06/14/2021	ND	0.060	101	0.0600	1.87	
Total BTEX	<0.006	0.006	06/14/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 86.5-115

Chloride, SM4500CI-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1000	4.00	06/14/2021	ND	100	100	100	0.00	

Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	636	125	06/15/2021	ND	23.3	116	20.0	3.05		

TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	3010	5.00	06/16/2021	ND	524	105	500	0.409		

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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:	06/11/2021	Sampling Date:	06/08/2021
Reported:	06/17/2021	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #3 (H211505-03)

BTX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.013	0.001	06/14/2021	ND	0.021	103	0.0200	0.806	
Toluene*	<0.001	0.001	06/14/2021	ND	0.020	97.9	0.0200	1.20	
Ethylbenzene*	0.002	0.001	06/14/2021	ND	0.019	96.8	0.0200	1.91	
Total Xylenes*	<0.003	0.003	06/14/2021	ND	0.060	101	0.0600	1.87	
Total BTX	0.015	0.006	06/14/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 77.1-124

Chloride, SM4500CI-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	960	4.00	06/14/2021	ND	100	100	100	0.00	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	738	125	06/15/2021	ND	23.3	116	20.0	3.05	

TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3500	5.00	06/16/2021	ND	532	106	500	2.99	

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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:	06/11/2021	Sampling Date:	06/08/2021
Reported:	06/17/2021	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #4 (H211505-04)

BTX 8021B		mg/L		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.001	0.001	06/14/2021	ND	0.021	103	0.0200	0.806	
Toluene*	<0.001	0.001	06/14/2021	ND	0.020	97.9	0.0200	1.20	
Ethylbenzene*	<0.001	0.001	06/14/2021	ND	0.019	96.8	0.0200	1.91	
Total Xylenes*	<0.003	0.003	06/14/2021	ND	0.060	101	0.0600	1.87	
Total BTX	<0.006	0.006	06/14/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 86.5-115

Chloride, SM4500CI-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1100	4.00	06/14/2021	ND	100	100	100	0.00	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	737	125	06/15/2021	ND	23.3	116	20.0	3.05	

TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3660	5.00	06/16/2021	ND	532	106	500	2.99	

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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:	06/11/2021	Sampling Date:	06/08/2021
Reported:	06/17/2021	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #5 (H211505-05)

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	06/14/2021	ND	0.021	103	0.0200	0.806	
Toluene*	<0.001	0.001	06/14/2021	ND	0.020	97.9	0.0200	1.20	
Ethylbenzene*	<0.001	0.001	06/14/2021	ND	0.019	96.8	0.0200	1.91	
Total Xylenes*	<0.003	0.003	06/14/2021	ND	0.060	101	0.0600	1.87	
Total BTEX	<0.006	0.006	06/14/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 86.5-115

Chloride, SM4500CI-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	960	4.00	06/14/2021	ND	100	100	100	0.00	

Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	758	125	06/15/2021	ND	23.3	116	20.0	3.05		

TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	3540	5.00	06/16/2021	ND	532	106	500	2.99		

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Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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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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

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: RICE Operating Company		BILL TO Company: RICE Operating Company		PO#
Project Manager: Katie Jones		Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240		
Address: (Street, City, Zip) 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 #:		Project Name: EME Junction H-20		
Project Location: T20S-R37E-Sec20 H ~ Lea County - New Mexico		Sampler Signature: Rozanne Johnson (575) 631-9310		

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB #		FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX				PRESERVATIVE METHOD					SAMPLING		MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours		
(LAB USE ONLY)					WATER	SOIL	AIR	SLUDGE	HCL (4-40ml VOA)	HNO3	NaHSO4	H2SO4	ICE (1-1 Liter HDPE)	NONE	DATE (2021)																							TIME	
H211505			G	5	X					4			1		6/8	12:00	X																			X	X	X	
2	Monitor Well #2		G	5	X					4			1		6/8	7:45	X																			X	X	X	
3	Monitor Well #3		G	5	X					4			1		6/8	10:10	X																			X	X	X	
4	Monitor Well #4		G	5	X					4			1		6/8	15:55	X																			X	X	X	
5	Monitor Well #5		G	5	X					4			1		6/8	13:10	X																			X	X	X	

Relinquished by: **Rozanne Johnson** Date: **6/11/2021** Time: **13:55**

Received by: **Rozanne Johnson** Date: **6-11-21** Time: **1355**

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

Relinquished by: _____ Date: _____ Time: _____

Received By: (Laboratory Staff) Date: _____ Time: _____

REMARKS:

Email Results: kjones@riceswd.com
rozanne@sdacres.com

Delivered By: (Circle One)

Sample Condition

Cool Intact
Yes ☒ No ☐

CHECKED BY:

(Initials)

Sampler - UPS - Bus - Other: _____



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

September 15, 2021

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION H - 20

Enclosed are the results of analyses for samples received by the laboratory on 09/10/21 15:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. 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.

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:	09/10/2021	Sampling Date:	09/07/2021
Reported:	09/15/2021	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #1 (H212518-01)

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	09/13/2021	ND	0.018	89.6	0.0200	0.0112	
Toluene*	0.003	0.001	09/13/2021	ND	0.019	97.4	0.0200	0.664	
Ethylbenzene*	<0.001	0.001	09/13/2021	ND	0.020	97.5	0.0200	0.819	
Total Xylenes*	<0.003	0.003	09/13/2021	ND	0.060	101	0.0600	1.43	
Total BTEX	<0.006	0.006	09/13/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 77.1-124

Chloride, SM4500Cl-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1100	4.00	09/13/2021	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	939	250	09/14/2021	ND	20.5	103	20.0	7.55	

TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3460	5.00	09/14/2021	ND	275	91.7	300	5.59	

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Analytical Results For:

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

Received: 09/10/2021
 Reported: 09/15/2021
 Project Name: EME JUNCTION H - 20
 Project Number: NONE GIVEN
 Project Location: T20S-R37E-SEC20 H-LEA CO NM

Sampling Date: 09/07/2021
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #2 (H212518-02)

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	09/13/2021	ND	0.018	89.6	0.0200	0.0112	
Toluene*	<0.001	0.001	09/13/2021	ND	0.019	97.4	0.0200	0.664	
Ethylbenzene*	<0.001	0.001	09/13/2021	ND	0.020	97.5	0.0200	0.819	
Total Xylenes*	<0.003	0.003	09/13/2021	ND	0.060	101	0.0600	1.43	
Total BTEX	<0.006	0.006	09/13/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 77.1-124

Chloride, SM4500CI-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1000	4.00	09/13/2021	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	881	250	09/14/2021	ND	20.5	103	20.0	7.55	

TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3080	5.00	09/14/2021	ND	275	91.7	300	5.59	

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Analytical Results For:

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

Received: 09/10/2021
 Reported: 09/15/2021
 Project Name: EME JUNCTION H - 20
 Project Number: NONE GIVEN
 Project Location: T20S-R37E-SEC20 H-LEA CO NM

Sampling Date: 09/07/2021
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #3 (H212518-03)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.002	0.001	09/13/2021	ND	0.018	89.6	0.0200	0.0112	
Toluene*	0.002	0.001	09/13/2021	ND	0.019	97.4	0.0200	0.664	
Ethylbenzene*	<0.001	0.001	09/13/2021	ND	0.020	97.5	0.0200	0.819	
Total Xylenes*	<0.003	0.003	09/13/2021	ND	0.060	101	0.0600	1.43	
Total BTEX	<0.006	0.006	09/13/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 77.1-124

Chloride, SM4500CI-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1060	4.00	09/13/2021	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	996	250	09/14/2021	ND	20.5	103	20.0	7.55	

TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3460	5.00	09/14/2021	ND	275	91.7	300	5.59	

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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:	09/10/2021	Sampling Date:	09/07/2021
Reported:	09/15/2021	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #4 (H212518-04)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.002	0.001	09/13/2021	ND	0.018	89.6	0.0200	0.0112	
Toluene*	0.001	0.001	09/13/2021	ND	0.019	97.4	0.0200	0.664	
Ethylbenzene*	<0.001	0.001	09/13/2021	ND	0.020	97.5	0.0200	0.819	
Total Xylenes*	<0.003	0.003	09/13/2021	ND	0.060	101	0.0600	1.43	
Total BTEX	<0.006	0.006	09/13/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 77.1-124

Chloride, SM4500CI-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1280	4.00	09/13/2021	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	953	250	09/14/2021	ND	20.5	103	20.0	7.55	

TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3700	5.00	09/14/2021	ND	275	91.7	300	5.59	

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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:	09/10/2021	Sampling Date:	09/07/2021
Reported:	09/15/2021	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #5 (H212518-05)

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	09/13/2021	ND	0.018	89.6	0.0200	0.0112	
Toluene*	<0.001	0.001	09/13/2021	ND	0.019	97.4	0.0200	0.664	
Ethylbenzene*	<0.001	0.001	09/13/2021	ND	0.020	97.5	0.0200	0.819	
Total Xylenes*	<0.003	0.003	09/13/2021	ND	0.060	101	0.0600	1.43	
Total BTEX	<0.006	0.006	09/13/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 77.1-124

Chloride, SM4500CI-B		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	590	4.00	09/13/2021	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	860	125	09/14/2021	ND	20.5	103	20.0	7.55	

TDS 160.1		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3360	5.00	09/14/2021	ND	275	91.7	300	5.59	

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
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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A handwritten signature in black ink, appearing to read "Celey D. Keene", written over a horizontal line.

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: RICE Operating Company		BILL TO Company: RICE Operating Company		PO#	
Project Manager: Katie Jones		Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240			
Address: (Street, City, Zip) 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 #:		Project Name: EME Junction H-20	
Project Location: T20S-R37E-Sec20 H ~ Lea County - New Mexico			
Sampler Signature:		Rozanne Johnson (575) 634-9310	

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX				PRESERVATIVE METHOD				SAMPLING			
				WATER	SOIL	AIR	SLUDGE	HCL (4-40ml VOA)	HNO ₃	NaHSO ₄	H ₂ SO ₄	ICE (1-1Liter HDPE)	NONE	DATE (2021)	TIME
H212578															
1	Monitor Well #1	G	5	X				4				1		9/7	12:50
2	Monitor Well #2	G	5	X				4				1		9/7	8:30
3	Monitor Well #3	G	5	X				4				1		9/7	11:00
4	Monitor Well #4	G	5	X				4				1		9/7	14:05
5	Monitor Well #5	G	5	X				4				1		9/7	9:40

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , CO ₃ , HCO ₃)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Relinquished by: Rozanne Johnson	Date: 9/10/2021	Time: 15:55	Received by: Jamora R. Johnson	Date: 9-10-21	Time: 1555
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date:	Time:

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

REMARKS:

Email Results: kjones@riceswd.com
rozanne@sdacres.com

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other:	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	(Initials) J.O.



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

November 15, 2021

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: EME JUNCTION H - 20

Enclosed are the results of analyses for samples received by the laboratory on 11/09/21 15:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. 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.

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:	11/09/2021	Sampling Date:	11/04/2021
Reported:	11/15/2021	Sampling Type:	Water
Project Name:	EME JUNCTION H - 20	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T20S-R37E-SEC20 H-LEA CO NM		

Sample ID: MONITOR WELL #1 (H213189-01)

BTEX 8021B		mg/L		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.005	0.001	11/11/2021	ND	0.021	104	0.0200	0.926	
Toluene*	<0.001	0.001	11/11/2021	ND	0.019	96.7	0.0200	0.849	
Ethylbenzene*	<0.001	0.001	11/11/2021	ND	0.019	96.5	0.0200	0.918	
Total Xylenes*	<0.003	0.003	11/11/2021	ND	0.060	99.8	0.0600	1.27	
Total BTEX	<0.006	0.006	11/11/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.1 % 77.1-124

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1050	4.00	11/10/2021	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	920	125	11/10/2021	ND	19.0	95.0	20.0	10.6	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	3410	5.00	11/12/2021	ND	852	85.2	1000	1.96	

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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: 11/09/2021
 Reported: 11/15/2021
 Project Name: EME JUNCTION H - 20
 Project Number: NONE GIVEN
 Project Location: T20S-R37E-SEC20 H-LEA CO NM

Sampling Date: 11/04/2021
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #2 (H213189-02)

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	11/11/2021	ND	0.021	104	0.0200	0.926		
Toluene*	<0.001	0.001	11/11/2021	ND	0.019	96.7	0.0200	0.849		
Ethylbenzene*	<0.001	0.001	11/11/2021	ND	0.019	96.5	0.0200	0.918		
Total Xylenes*	<0.003	0.003	11/11/2021	ND	0.060	99.8	0.0600	1.27		
Total BTEX	<0.006	0.006	11/11/2021	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.8 % 77.1-124

Chloride, SM4500Cl-B		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	950	4.00	11/10/2021	ND	104	104	100	3.92		

Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	843	125	11/10/2021	ND	19.0	95.0	20.0	10.6		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	3020	5.00	11/12/2021	ND	852	85.2	1000	1.96		

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Laboratory Reports



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Analytical Results For:

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

Received: 11/09/2021
 Reported: 11/15/2021
 Project Name: EME JUNCTION H - 20
 Project Number: NONE GIVEN
 Project Location: T20S-R37E-SEC20 H-LEA CO NM

Sampling Date: 11/04/2021
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #3 (H213189-03)

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	11/11/2021	ND	0.021	104	0.0200	0.926	
Toluene*	<0.001	0.001	11/11/2021	ND	0.019	96.7	0.0200	0.849	
Ethylbenzene*	<0.001	0.001	11/11/2021	ND	0.019	96.5	0.0200	0.918	
Total Xylenes*	<0.003	0.003	11/11/2021	ND	0.060	99.8	0.0600	1.27	
Total BTEX	<0.006	0.006	11/11/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.8 % 77.1-124

Chloride, SM4500CI-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	950	4.00	11/10/2021	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	930	125	11/10/2021	ND	19.0	95.0	20.0	10.6		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	3350	5.00	11/12/2021	ND	852	85.2	1000	1.96		

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Analytical Results For:

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

Received: 11/09/2021
 Reported: 11/15/2021
 Project Name: EME JUNCTION H - 20
 Project Number: NONE GIVEN
 Project Location: T20S-R37E-SEC20 H-LEA CO NM

Sampling Date: 11/04/2021
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #4 (H213189-04)

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	11/11/2021	ND	0.021	104	0.0200	0.926	
Toluene*	<0.001	0.001	11/11/2021	ND	0.019	96.7	0.0200	0.849	
Ethylbenzene*	<0.001	0.001	11/11/2021	ND	0.019	96.5	0.0200	0.918	
Total Xylenes*	<0.003	0.003	11/11/2021	ND	0.060	99.8	0.0600	1.27	
Total BTEX	<0.006	0.006	11/11/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 77.1-124

Chloride, SM4500CI-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1150	4.00	11/10/2021	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	913	125	11/10/2021	ND	19.0	95.0	20.0	10.6		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	3640	5.00	11/12/2021	ND	852	85.2	1000	1.96		

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Celey D. Keene, Lab Director/Quality Manager

Laboratory Reports



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Analytical Results For:

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

Received: 11/09/2021
 Reported: 11/15/2021
 Project Name: EME JUNCTION H - 20
 Project Number: NONE GIVEN
 Project Location: T20S-R37E-SEC20 H-LEA CO NM

Sampling Date: 11/04/2021
 Sampling Type: Water
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: MONITOR WELL #5 (H213189-05)

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	11/11/2021	ND	0.021	104	0.0200	0.926	
Toluene*	<0.001	0.001	11/11/2021	ND	0.019	96.7	0.0200	0.849	
Ethylbenzene*	<0.001	0.001	11/11/2021	ND	0.019	96.5	0.0200	0.918	
Total Xylenes*	<0.003	0.003	11/11/2021	ND	0.060	99.8	0.0600	1.27	
Total BTEX	<0.006	0.006	11/11/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.3 % 77.1-124

Chloride, SM4500CI-B		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1050	4.00	11/10/2021	ND	104	104	100	3.92	

Sulfate 375.4		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	934	125	11/10/2021	ND	19.0	95.0	20.0	10.6		

TDS 160.1		mg/L		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	3440	5.00	11/11/2021	ND	852	85.2	1000	1.96		

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Celey D. Keene, Lab Director/Quality Manager



Laboratory Reports

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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

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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

101 East Marland - Hobbs, NM 88240
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Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RICE Operating Company		BILL TO Company: RICE Operating Company		PO#
Project Manager: Katie Jones		Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240		
Address: (Street, City, Zip) 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 #:	Project Name: EME Junction H-20
Project Location: T20S-R37E-Sec20 H ~ Lea County - New Mexico	
Sampler Signature: <i>Rozanne Johnson</i> (575) 631-9310	

H213189 LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX				PRESERVATIVE METHOD					SAMPLING		
				WATER	SOIL	AIR	SLUDGE	HCL (4-40ml VOA)	HNO ₃	NaHSO ₄	H ₂ SO ₄	ICE (1-1Liter HDPE)	NONE	DATE (2021)	TIME
1	Monitor Well #1	G	5	X				4				1		11/4	15:15
2	Monitor Well #2	G	5	X				4				1		11/4	9:30
3	Monitor Well #3	G	5	X				4				1		11/4	12:00
4	Monitor Well #4	G	5	X				4				1		11/4	13:15
5	Monitor Well #5	G	5	X				4				1		11/4	10:50

MTBE 8021B/602	BTEX 8021B/602	TPH 418:1/TX1005 / TX1005 Extended (C35)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , CO ₃ , HCO ₃)	Sulfates	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Relinquished by: <i>Rozanne Johnson</i>	Date: 11/9/2021	Time: 15:45	Received by: <i>Janara Bldg</i>	Date: 11-9-21	Time: 1545
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) Sampler - UPS - Bus - Other:	Sample Condition Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	CHECKED BY: <i>TO</i> (Initials)
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REMARKS:

Email Results: kjones@riceswd.com
rozanne@sdacres.com

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 90572

CONDITIONS

Operator: RICE OPERATING COMPANY 122 W Taylor Hobbs, NM 88240	OGRID:
	19174
	Action Number: 90572
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. Continue sampling on a bi-annual schedule at a minimum. 2. OCD requires at least one groundwater flow direction map be included in future annual reports. 3. Submit summarized activities completed and their results in a 2022 Annual Report. Submittal to OCD expected no later than March 31, 2023. 4. OCD requires an abatement option(s) be submitted for pre-approval no later than March 31, 2023 to accelerate the reduction in the current chloride & TDS levels found in all site monitor wells. OCD suggest arranging a meeting to discuss options to mitigate the elevated values.	10/6/2022