L Peter Galusky, Jr PE

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April 1st, 2020

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

RE: **2019 Annual Report**
Rice Operating Company
BD P-26-1 and BD P-26-2 (AP-97), T21S, R37E, Sec. 26, UL P

Sent by E-mail

Mr. Billings:

This letter summarizes progress made over the past calendar year for the BD P-26-1 and BD P-26-2 sites which are operated by Rice Operating Company (ROC). Location and site schematic maps are given in the Appendix (Figures 1 and 2, respectively). In brief:

BD P-26-1

Groundwater analyte concentrations for BD P-26-1 are given in Figure 3 (average annual values) and Tables 1 (annual averages) and 2a-2c (the complete dataset) in the Appendix.

Average annual groundwater chloride concentrations in the near-source monitor well (MW-1) decreased slightly from 258 mg/l in 2018 to 242 mg/l in 2019. Groundwater chloride concentrations in the up-gradient monitor well (MW-2) increased slightly, from 182 mg/l in 2018 to 202 mg/l in 2019. Groundwater chloride concentrations in the down-gradient monitor well (MW-3) decreased from 281 mg/l in 2018 to 219 mg/l in 2019. BTEX concentrations remained below the limits of laboratory detection, as they have since they were first sampled in 2007. The depth to groundwater at this location averaged approximately 50 ft bgs at the near-source monitor well (MW-1) during 2019.

BD P-26-2

Groundwater analyte concentrations for BD P-26-2 are given in Figure 4 (average annual values) and Tables 3 (annual averages) and 4a-4c (the complete dataset) in the Appendix.

The average annual groundwater chloride concentration in the near-source monitor well (MW-1) was little changed, averaging 740 mg/l in 2019 versus 748 mg/l in 2018. Average annual groundwater chloride concentrations in the down-gradient well (MW-2) dropped substantially from 1,735 mg/l in 2018 to 1,378

mg/l in 2019. Average annual groundwater chloride concentrations in the far down-gradient monitor well, MW-3, was little changed averaging 710 mg/l in 2018 versus 728 mg/l in 2019. BTEX concentrations remained below the limits of laboratory detection, as they have since they were first sampled in 2008. The depth to groundwater at this location averaged approximately 46 ft bgs in the near-source monitor well (MW-1) during 2019.

Summary and Path Forward

These data indicate that groundwater chloride concentrations across the BD P-26-1 location have essentially reached the OCD standard of 250 mg/l, with some year-to-year variation likely due to migration of chlorides from upgradient sources. As groundwater beneath BD P-26-1 has essentially achieved concentrations comparable to upgradient, background levels ROC will continue to monitor the wells quarterly during 2020.

Groundwater chloride concentrations BD P-26-2 are presently several times lower than the peak value of 5,325 mg/l observed in the at-source well in 2008. However, groundwater chlorides as this site have yet to consistently decline toward the 250 mg/l standard. We therefore plan to continue to monitor groundwater at BD P-26-2 for chlorides during 2020.

BTEX concentrations in all three monitoring wells at each site have remained below detectable limit since installation. ROC therefore requests to suspend BTEX analysis for both BD P-26 1&2. Further, due to the current climate, and in the interest of safety, ROC proposes to reduce the groundwater monitoring frequency from quarterly to semi-annually for the remainder of this year. This proposal to reduce groundwater monitoring frequency is only temporary, and regularly scheduled groundwater monitoring will commence as soon as possible.

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

Please contact either Katie Jones at Rice Operating Company or me if you have any questions or need additional information. Thank you for your consideration.

Sincerely,

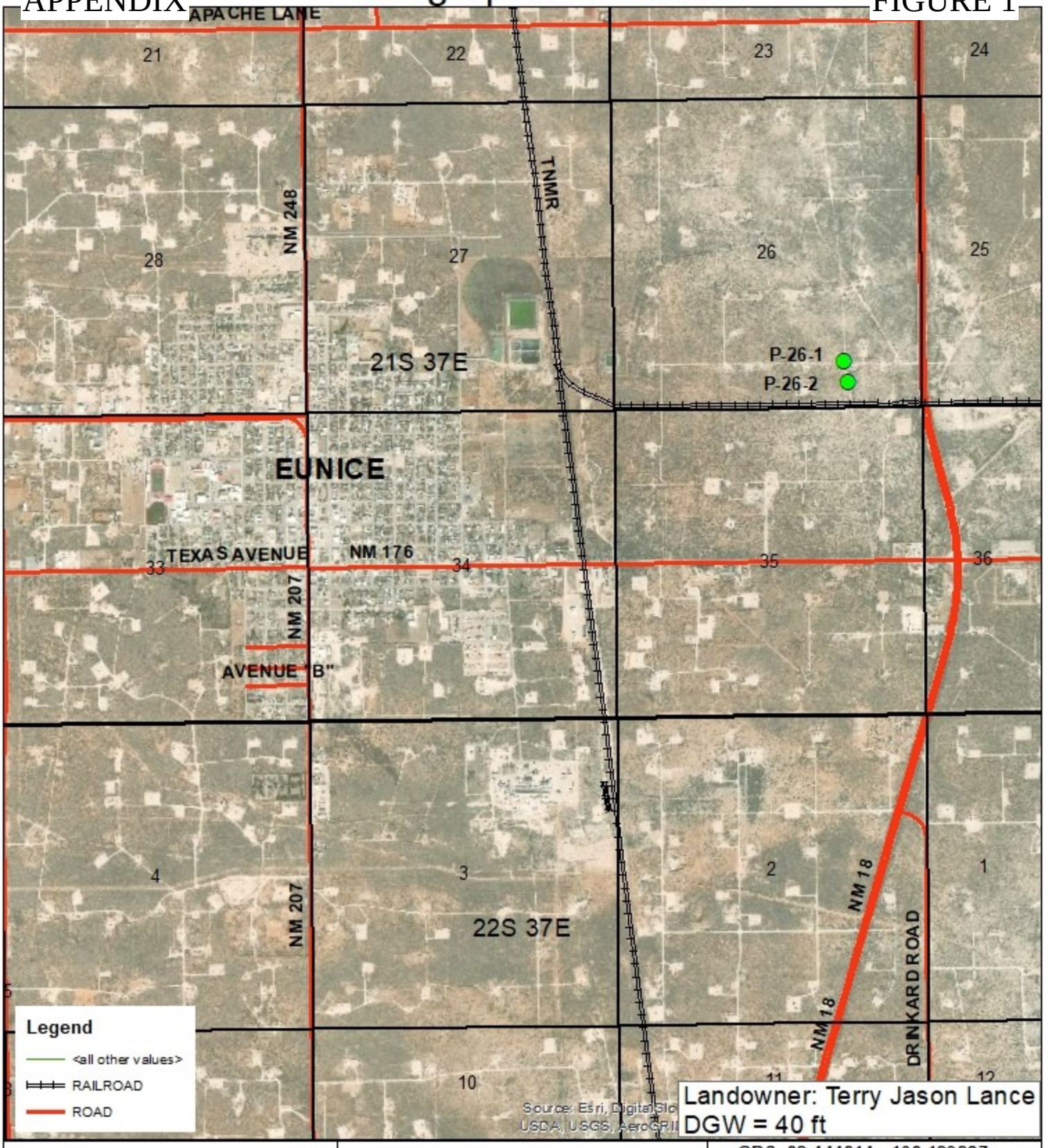
L. Peter Galusky, Jr. P.E.
NM Prof. Engineer No. 22561

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

APPENDIX

Geographic Location

FIGURE 1



RICE OPERATING COMPANY
ROC
SINCE 1955

BD P-26-1 & 2

AP-97

UL/P SECTION 26
T-21-S R-37-E
LEA COUNTY, NM

GPS: 32.444314 -103.129287
NAD83 STATE PLANE PROJ
NM EAST ZONE

N
W E
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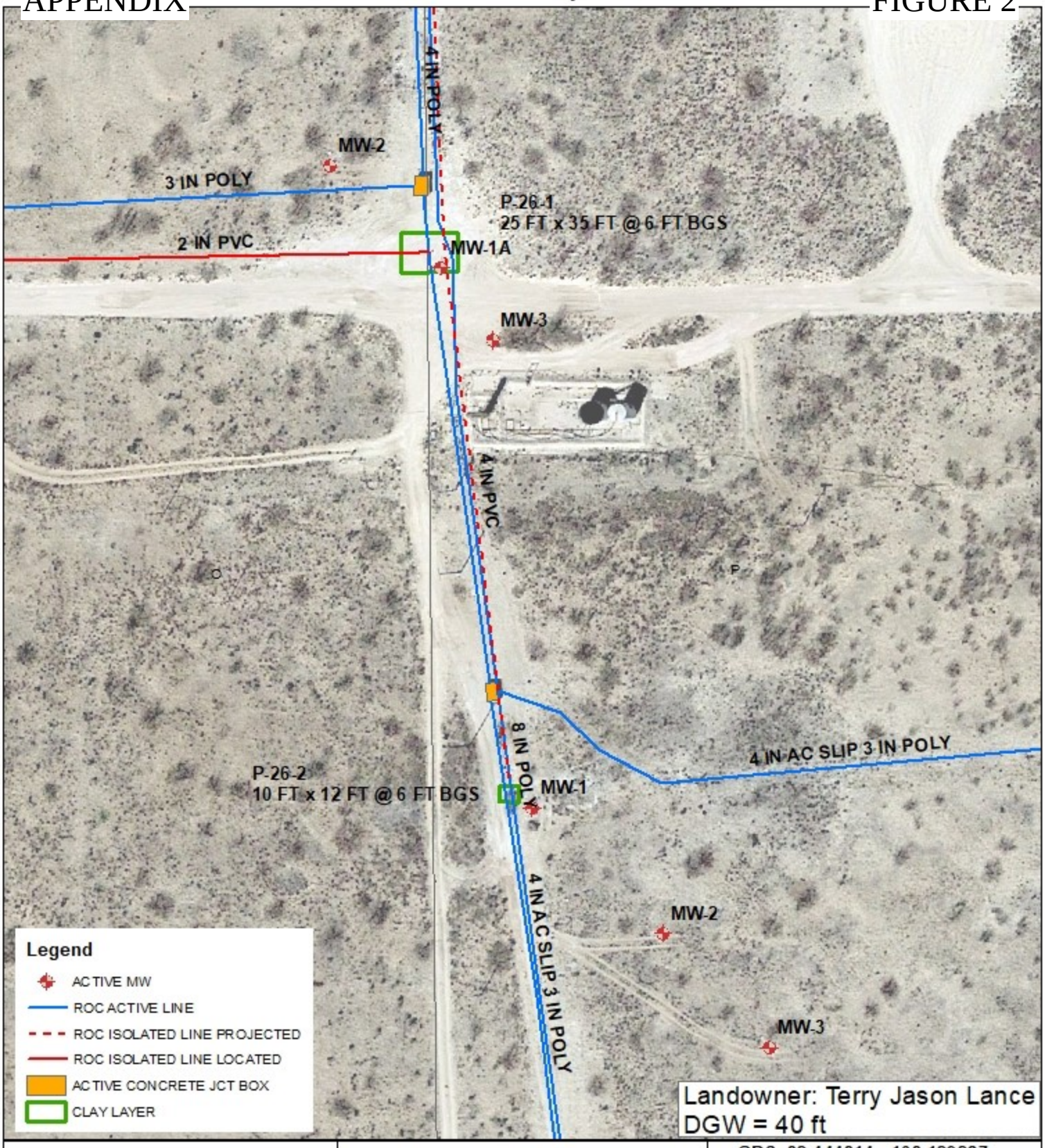
0 2,000 4,000
Feet

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

APPENDIX

Site Map

FIGURE 2



RICE OPERATING COMPANY
ROC
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BD P-26-1 & 2

AP-97

UL/P SECTION 26
T-21-S R-37-E
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GPS: 32.444314 -103.129287
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Feet

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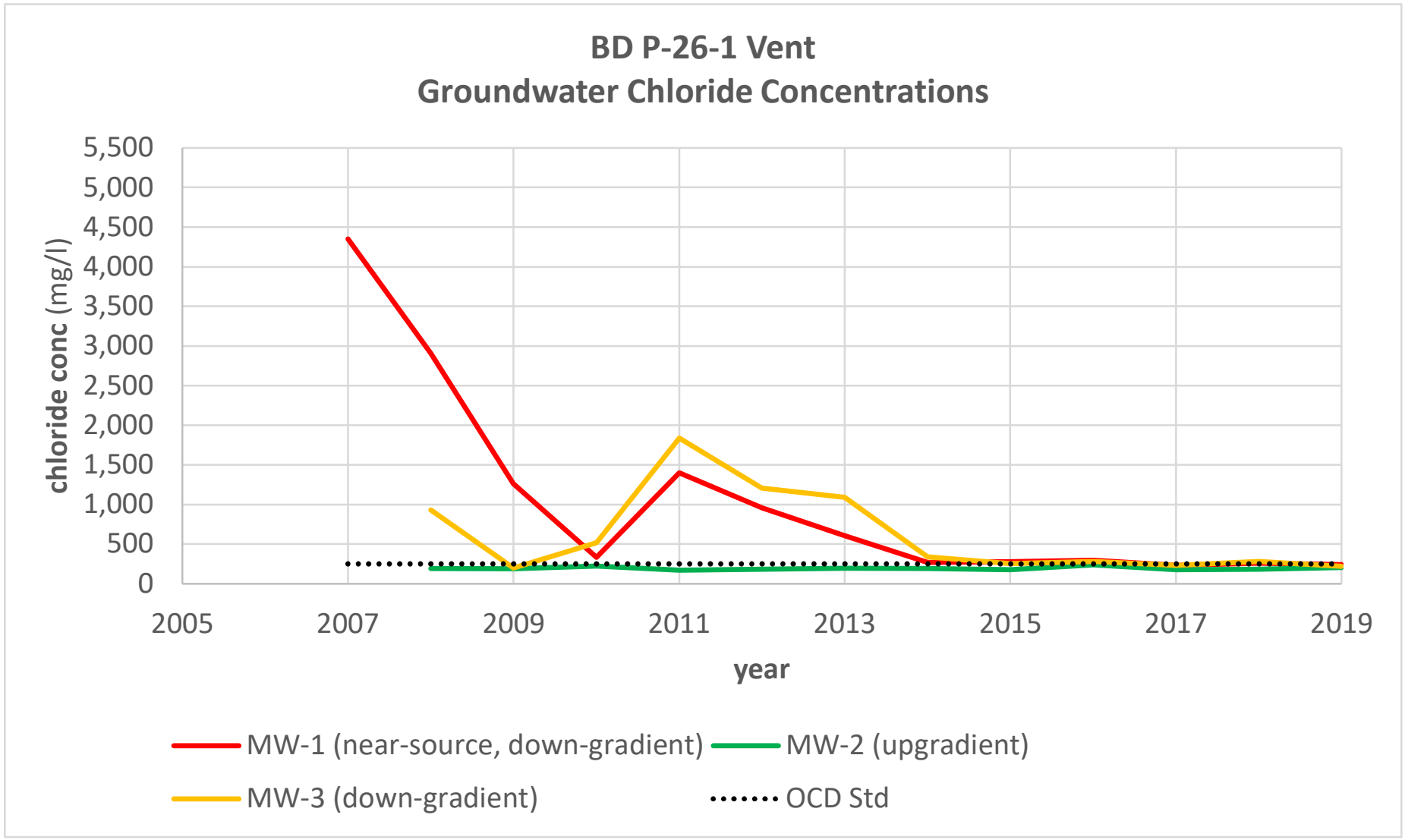

BD P-26-1 Vent
Groundwater Chloride Concentrations
chloride conc (mg/l)
5,500
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
2005
2007
2009
2011
2013
2015
2017
2019
year
MW-1 (near-source, down-gradient)
MW-2 (upgradient)
MW-3 (down-gradient)
OCD Std

APPENDIX

ROC - BD P-26-1 (AP-97)
Groundwater Chloride Concentrations
Table 1 - Annual Averages (mg/l)

year	MW-1 (near-source, down-gradient)	MW-2 (upgradient)	MW-3 (down-gradient)	OCD Std
2007	4,350			250
2008	2,905	190	931	250
2009	1,263	188	198	250
2010	332	221	517	250
2011	1,398	171	1,838	250
2012	960	185	1,205	250
2013	605	197	1,090	250
2014	268	190	341	250
2015	277	177	253	250
2016	298	238	283	250
2017	233	177	229	250
2018	258	182	281	250
2019	242	202	219	250

APPENDIX

TABLE 2a - BD P-26-1 Groundwater Data

MW	Depth to Water (ft)	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
1	50.4	58.6	1.3	6.0	11/12/2007	4,350	8,396	<0.002	<0.002	<0.002	<0.006	347	Clear No odor
1	49.8	58.7	1.4	6.0	1/14/2008	3,900	7,655	<0.001	<0.001	<0.001	<0.003	355	Clear No odor
1	50.0	58.7	1.4	6.0	4/4/2008	3,000	6,340	<0.001	<0.001	<0.001	<0.003	304	Sand to clear No odor
1	50.3	58.7	1.3	6.0	7/16/2008	2,160	4,930	<0.001	<0.001	<0.001	<0.003	299	Sand to clear No odor
1	50.9	58.7	1.2	6.0	10/6/2008	2,560	5,940	<0.001	<0.001	<0.001	<0.003	309	Sand to clear No odor
1	50.6	58.6	1.3	6.0	1/16/2009	2,160	4,300	<0.001	<0.001	<0.001	<0.003	310	Sand to clear No odor
1	50.5	58.6	1.3	6.0	4/15/2009	1,700	3,420	<0.001	<0.001	<0.001	<0.003	289	Sand to clear No odor
1	49.4	58.6	1.5	6.0	7/15/2009	650	1,740	<0.001	<0.001	<0.001	<0.003	233	Sand to clear No odor
1	49.1	58.6	1.5	6.0	10/9/2009	540	1,520	<0.001	<0.001	<0.001	<0.003	230	Sand to clear No odor
1	49.6	58.7	1.4	6.0	1/15/2010	560	1,400	<0.001	<0.001	<0.001	<0.003	216	Sand to clear No odor
1	50.2	58.7	1.4	6.0	4/13/2010	220	941	<0.001	<0.001	<0.001	<0.003	223	Sand to clear No odor
1	49.9	58.7	1.4	6.0	7/13/2010	316	1,120	<0.001	<0.001	<0.001	<0.003	205	Sand to clear No odor
1	48.6	58.7	1.6	6.0	10/8/2010	232	920	<0.001	<0.001	<0.001	<0.003	182	Sand to clear No odor
1	48.2	58.7	1.7	6.0	1/18/2011	1,640	3,880	<0.001	<0.001	<0.001	<0.003	348	Sand to clear No odor
1	48.1	58.7	1.7	6.0	4/14/2011	1,670	3,270	<0.001	<0.001	<0.001	<0.003	347	Sand to clear No odor
1	48.3	58.7	1.7	6.0	7/21/2011	1,300	2,740	<0.001	<0.001	<0.001	<0.003	279	Sand to clear No odor
1	48.6	58.7	1.6	6.0	10/17/2011	980	2,290	<0.001	<0.001	<0.001	<0.003	215	Sand to clear No odor
1	48.6	58.7	1.6	6.0	1/20/2012	1,040	2,280	<0.001	<0.001	<0.001	<0.003	243	Sand to clear No odor
1	48.6	58.7	1.6	6.0	4/19/2012	1,180	2,580	<0.001	<0.001	<0.001	<0.003	226	Sand to clear No odor
1	53.3	58.7	0.9	6.0	7/17/2012	920	1,900	<0.001	<0.001	<0.001	<0.003	152	Sand to clear No odor
1	51.9	58.7	1.1	6.0	10/15/2012	700	1,720	<0.001	<0.001	<0.001	<0.003	245	Sand to clear No odor
1	54.1	58.7	0.7	6.0	1/9/2013	920	1,960	<0.001	<0.001	<0.001	<0.003	165	Sand to clear No odor
1	54.0	58.7	0.8	6.0	4/22/2013	630	1,580	<0.001	<0.001	<0.001	<0.003	228	Sand to clear No odor
1	52.8	58.7	0.9	6.0	7/18/2013	590	1,610	<0.001	<0.001	<0.001	<0.003	183	Sand to clear No odor
1	54.2	58.7	0.7	6.0	10/18/2013	280	1,060	<0.001	<0.001	<0.001	<0.003	177	Sand to clear No odor
1	55.7	58.7	0.5	6.0	1/24/2014	392	1,260	<0.001	<0.001	<0.001	<0.003	184	Sand to clear No odor
1	56.5	58.7	0.3	6.0	4/8/2014	232	940	<0.001	<0.001	<0.001	<0.003	199	Sand to clear No odor
1	57.1	58.7	0.2	6.0	7/22/2014	244	980	<0.001	<0.001	<0.001	<0.003	196	Sand to clear No odor
1	52.6	58.7	1.0	3.0	10/24/2014	204	904	<0.001	<0.001	<0.001	<0.003	173	Sand to clear No odor
1	53.0	58.7	0.9	3.0	2/4/2015	235	1,010	<0.001	<0.001	<0.001	<0.003	103	Sand to clear No odor
1	54.3	58.7	0.7	3.0	4/22/2015	224	1,000	<0.001	<0.001	<0.001	<0.003	163	Sand to clear No odor
1	54.9	58.7	0.6	3.0	7/30/2015	224	1,010	<0.001	<0.001	<0.001	<0.003	139	Sand to clear No odor
1	53.5	58.7	0.8	3.0	10/23/2015	424	1,330	<0.001	<0.001	<0.001	<0.003	179	Sand to clear No odor
1	51.9	56.7	1.1	3.0	2/1/2016	292	1,120	<0.001	<0.001	<0.001	<0.003	201	Sand to clear No odor
1	52.6	56.7	1.0	3.0	4/25/2016	284	1,120	<0.001	<0.001	<0.001	<0.003	240	Sand to clear No odor
1	51.5	56.7	1.2	4.0	7/25/2016	284	1,140	<0.001	<0.001	<0.001	<0.003	218	Sand to clear No odor
1	51.8	56.7	1.1	4.0	10/31/2016	332	1,230	<0.001	<0.001	<0.001	<0.003	224	Sand to clear No odor
1	51.8	56.7	1.1	4.0	2/8/2017	176	898	<0.001	<0.001	<0.001	<0.003	194	Sand to clear No odor
1	51.2	56.7	1.2	4.0	4/13/2017	312	1,150	<0.001	<0.001	<0.001	<0.003	180	Sand to clear No odor
1	49.8	56.6	1.4	4.0	8/17/2017	228	1,070	<0.001	<0.001	<0.001	<0.003	188	Sand to clear No odor
1	49.7	56.6	1.4	4.0	10/26/2017	216	1,080	<0.001	<0.001	<0.001	<0.003	174	Sand to clear No odor
1	49.0	58.7	1.6	4.0	1/18/2018	228	736	<0.001	<0.001	<0.001	<0.003	189	Sand to clear No odor
1	48.6	58.7	1.6	4.0	4/30/2018	264	1,030	<0.001	<0.001	<0.001	<0.003	244	Sand to clear No odor
1	48.4	58.7	1.6	4.0	8/14/2018	280	1,080	<0.001	<0.001	<0.001	<0.003	210	Sand to clear No odor
1	48.3	58.7	1.7	4.0	11/1/2018	260	806	<0.001	<0.001	<0.001	<0.003	258	Sand to clear No odor
1	48.1	56.6	1.7	4.0	2/12/2019	220	1,060	<0.001	<0.001	<0.001	<0.003	244	Sand to clear No odor
1	48.0	56.6	1.7	4.0	4/26/2019	208	953	<0.001	<0.001	<0.001	<0.003	158	Sand to clear No odor
1	47.9	56.6	1.7	4.0	7/29/2019	296	1,080	<0.001	<0.001	<0.001	<0.003	175	Sand to clear No odor
1	47.9	56.6	1.7	4.0	10/28/2019	244	879	<0.001	<0.001	<0.001	<0.003	151	Sand to clear No odor

APPENDIX

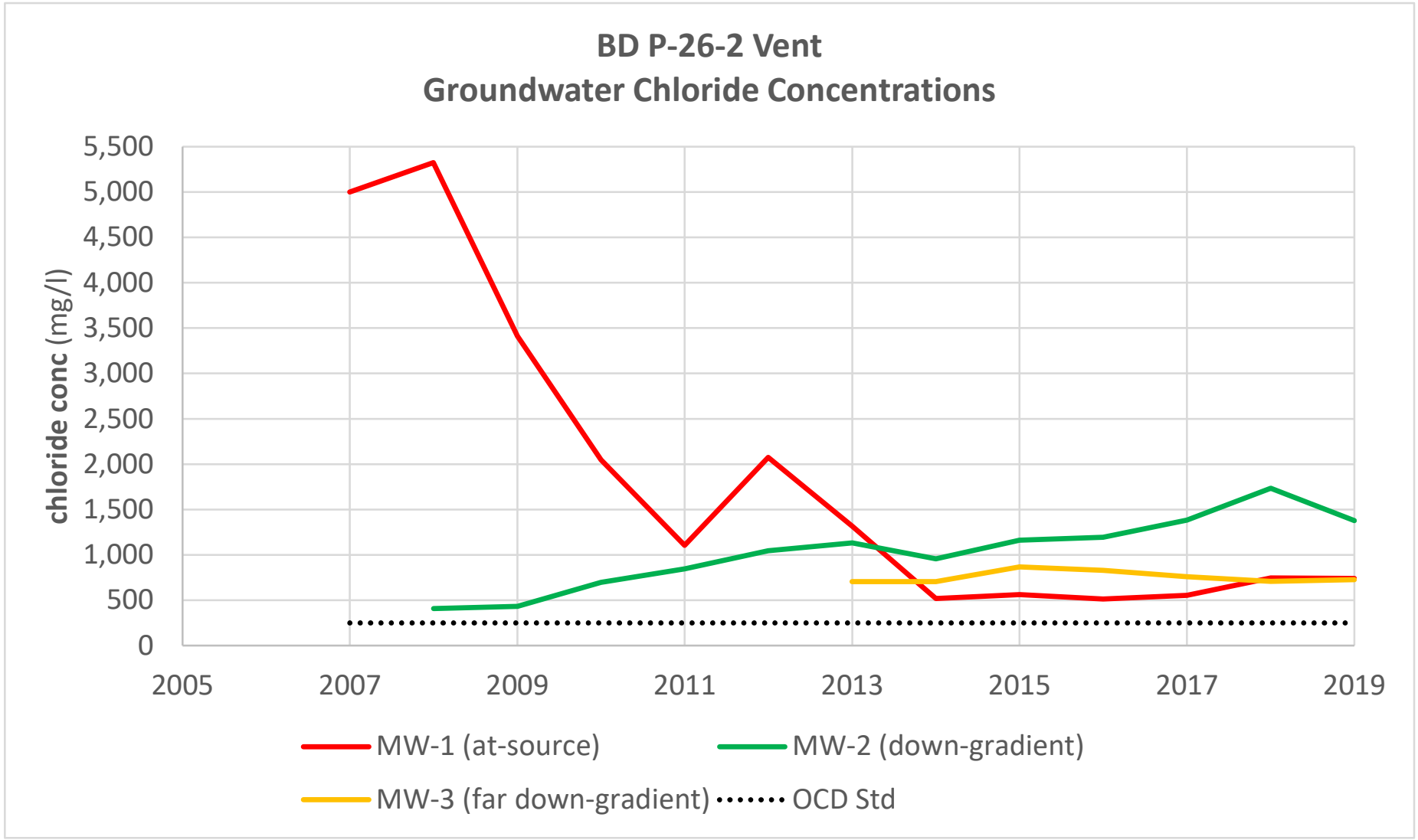
Table 2b - BD P-26-1 Groundwater Data

MW	Depth to Water (ft)	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
2	49.5	64.4	2.4	10.0	7/16/2008	196	968	<0.001	<0.001	<0.001	<0.003	187	Sand to clear No odor
2	50.1	64.4	2.3	10.0	10/6/2008	184	933	<0.001	<0.001	<0.001	<0.003	216	Sand to clear No odor
2	49.7	64.9	2.4	10.0	1/16/2009	192	913	<0.001	<0.001	<0.001	<0.003	207	Sand to clear No odor
2	49.7	64.9	2.4	10.0	4/15/2009	188	932	<0.001	<0.001	<0.001	<0.003	186	Sand to clear No odor
2	48.6	65.0	2.6	10.0	7/15/2009	192	887	<0.001	<0.001	<0.001	<0.003	180	Sand to clear No odor
2	48.5	65.0	2.7	10.0	10/9/2009	180	895	<0.001	<0.001	<0.001	<0.003	182	Sand to clear No odor
2	48.6	65.1	2.6	10.0	1/15/2010	328	1,040	<0.001	<0.001	<0.001	<0.003	185	Sand to clear No odor
2	49.1	65.1	2.6	10.0	4/13/2010	192	896	<0.001	<0.001	<0.001	<0.003	210	Sand to clear No odor
2	49.0	65.1	2.6	10.0	7/13/2010	196	848	<0.001	<0.001	<0.001	<0.003	203	Sand to clear No odor
2	48.0	65.1	2.7	10.0	10/8/2010	168	888	<0.001	<0.001	<0.001	<0.003	167	Sand to clear No odor
2	47.7	65.1	2.8	10.0	1/18/2011	164	881	<0.001	<0.001	<0.001	<0.003	191	Sand to clear No odor
2	47.6	65.1	2.8	10.0	4/14/2011	168	867	<0.001	<0.001	<0.001	<0.003	189	Sand to clear No odor
2	47.8	65.1	2.8	10.0	7/21/2011	180	825	<0.001	<0.001	<0.001	<0.003	170	Sand to clear No odor
2	48.1	65.1	2.7	10.0	10/17/2011	172	813	<0.001	<0.001	<0.001	<0.003	136	Sand to clear No odor
2	48.1	65.1	2.7	10.0	1/20/2012	176	924	<0.001	<0.001	<0.001	<0.003	189	Sand to clear No odor
2	48.1	65.1	2.7	10.0	4/19/2012	168	868	<0.001	<0.001	<0.001	<0.003	187	Sand to clear No odor
2	52.3	65.1	2.0	10.0	7/17/2012	204	968	<0.001	<0.001	<0.001	<0.003	194	Sand to clear No odor
2	51.0	65.1	2.3	10.0	10/15/2012	192	937	<0.001	<0.001	<0.001	<0.003	220	Sand to clear No odor
2	53.1	65.1	1.9	10.0	1/9/2013	196	862	<0.001	<0.001	<0.001	<0.003	193	Sand to clear No odor
2	53.0	65.1	1.9	10.0	4/22/2013	196	894	<0.001	<0.001	<0.001	<0.003	186	Sand to clear No odor
2	52.1	65.1	2.1	10.0	7/18/2013	208	946	<0.001	<0.001	<0.001	<0.003	185	Sand to clear No odor
2	53.3	65.1	1.9	10.0	10/18/2013	188	878	<0.001	<0.001	<0.001	<0.003	160	Sand to clear No odor
2	54.6	65.1	1.7	10.0	1/24/2014	192	868	<0.001	<0.001	<0.001	<0.003	193	Sand to clear No odor
2	55.5	65.1	1.5	10.0	4/8/2014	204	878	<0.001	<0.001	<0.001	<0.003	180	Sand to clear No odor
2	56.0	65.1	1.4	10.0	7/22/2014	192	934	<0.001	<0.001	<0.001	<0.003	190	Sand to clear No odor
2	51.9	65.1	2.1	10.0	10/24/2014	172	882	<0.001	<0.001	<0.001	<0.003	165	Sand to clear No odor
2	52.1	65.1	2.1	10.0	2/4/2015	176	870	<0.001	<0.001	<0.001	<0.003	149	Sand to clear No odor
2	52.8	65.1	2.0	10.0	4/22/2015	188	938	<0.001	<0.001	<0.001	<0.003	129	Sand to clear No odor
2	53.3	65.1	1.9	10.0	7/30/2015	172	912	<0.001	<0.001	<0.001	<0.003	140	Sand to clear No odor
2	52.0	65.1	2.1	10.0	10/23/2015	172	884	<0.001	<0.001	<0.001	<0.003	152	Sand to clear No odor
2	51.3	65.1	2.2	10.0	2/1/2016	280	842	<0.001	<0.001	<0.001	<0.003	104	Sand to clear No odor
2	52.0	65.1	2.1	8.0	4/25/2016	208	904	<0.001	<0.001	<0.001	<0.003	166	Sand to clear No odor
2	51.1	65.1	2.2	8.0	7/25/2016	280	1,110	<0.001	<0.001	<0.001	<0.003	212	Sand to clear No odor
2	51.2	65.1	2.2	8.0	10/31/2016	184	878	<0.001	<0.001	<0.001	<0.003	211	Sand to clear No odor
2	51.3	65.1	2.2	8.0	2/8/2017	184	794	<0.001	<0.001	<0.001	<0.003	175	Sand to clear No odor
2	50.6	65.1	2.3	8.0	4/13/2017	180	850	<0.001	<0.001	<0.001	<0.003	195	Sand to clear No odor
2	49.3	65.1	2.5	8.0	8/17/2017	168	954	<0.001	<0.001	<0.001	<0.003	174	Sand to clear No odor
2	49.2	65.1	2.5	8.0	10/26/2017	176	882	<0.001	<0.001	<0.001	<0.003	173	Sand to clear No odor
2	48.4	65.1	2.7	8.0	1/18/2018	172	932	<0.001	<0.001	<0.001	<0.003	178	Sand to clear No odor
2	48.0	65.1	2.7	8.0	4/30/2018	180	840	<0.001	<0.001	<0.001	<0.003	224	Sand to clear No odor
2	47.8	65.1	2.8	8.0	8/14/2018	188	936	<0.001	<0.001	<0.001	<0.003	149	Sand to clear No odor
2	47.8	65.1	2.8	8.0	11/1/2018	188	1000	<0.001	<0.001	<0.001	<0.003	179	Sand to clear No odor
2	47.6	65.1	2.8	8.0	2/12/2019	196	839	<0.001	<0.001	<0.001	<0.003	196	Sand to clear No odor
2	47.5	65.1	2.8	8.0	4/26/2019	192	944	<0.001	<0.001	<0.001	<0.003	178	Sand to clear No odor
2	47.4	65.1	2.8	8.0	7/29/2019	208	931	<0.001	<0.001	<0.001	<0.003	185	Sand to clear No odor
2	47.4	65.1	2.8	8.0	10/28/2019	212	949	<0.001	<0.001	<0.001	<0.003	166	Sand to clear No odor

APPENDIX

Table 2c - BD P-26-1 Groundwater Data

MW	Depth to Water (ft)	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
3	49.2	64.6	2.5	10.0	7/16/2008	212	926	<0.001	<0.001	<0.001	<0.003	174	Sand to clear No odor
3	49.6	64.6	2.3	10.0	10/6/2008	188	936	<0.001	<0.001	<0.001	<0.003	190	Sand to clear No odor
3	49.3	64.6	2.4	10.0	1/16/2009	208	896	<0.001	<0.001	<0.001	<0.003	207	Sand to clear No odor
3	49.3	64.6	2.4	10.0	4/15/2009	204	924	<0.001	<0.001	<0.001	<0.003	190	Sand to clear No odor
3	48.1	64.5	2.6	10.0	7/15/2009	176	895	<0.001	<0.001	<0.001	<0.003	169	Sand to clear No odor
3	48.0	64.5	2.6	10.0	10/9/2009	204	930	<0.001	<0.001	<0.001	<0.003	169	Sand to clear No odor
3	48.4	64.5	2.6	10.0	1/15/2010	328	1,150	<0.001	<0.001	<0.001	<0.003	176	Sand to clear No odor
3	49.1	64.5	2.5	10.0	4/13/2010	460	1,290	<0.001	<0.001	<0.001	<0.003	197	Sand to clear No odor
3	48.9	64.5	2.5	10.0	7/13/2010	450	1,170	<0.001	<0.001	<0.001	<0.003	189	Sand to clear No odor
3	47.2	64.5	2.8	10.0	10/8/2010	830	1,840	<0.001	<0.001	<0.001	<0.003	142	Sand to clear No odor
3	46.9	64.6	2.8	10.0	1/18/2011	1,800	3,670	<0.001	<0.001	<0.001	<0.003	259	Sand to clear No odor
3	46.8	64.6	2.9	10.0	4/14/2011	2,450	4,430	<0.001	<0.001	<0.001	<0.003	329	Sand to clear No odor
3	47.0	64.6	2.8	10.0	7/21/2011	1,860	3,700	<0.001	<0.001	<0.001	<0.003	323	Sand to clear No odor
3	47.3	64.6	2.8	10.0	10/17/2011	1,240	2,870	<0.001	<0.001	<0.001	<0.003	252	Sand to clear No odor
3	47.2	64.6	2.8	10.0	1/20/2012	1,040	2,600	<0.001	<0.001	<0.001	<0.003	322	Sand to clear No odor
3	47.3	64.6	2.8	10.0	4/19/2012	920	2,340	<0.001	<0.001	<0.001	<0.003	268	Sand to clear No odor
3	52.4	64.6	2.0	10.0	7/17/2012	1,950	3,760	<0.001	<0.001	<0.001	<0.003	297	Sand to clear No odor
3	50.5	64.6	2.3	10.0	10/15/2012	910	2,100	<0.001	<0.001	<0.001	<0.003	234	Sand to clear No odor
3	53.0	64.6	1.9	10.0	1/9/2013	2,020	3,800	<0.001	<0.001	<0.001	<0.003	323	Sand to clear No odor
3	53.0	64.6	1.9	10.0	4/22/2013	1,240	2,620	<0.001	<0.001	<0.001	<0.003	286	Sand to clear No odor
3	51.8	64.6	2.0	10.0	7/18/2013	500	1,440	<0.001	<0.001	<0.001	<0.003	199	Sand to clear No odor
3	53.2	64.6	1.8	10.0	10/18/2013	600	1,640	<0.001	<0.001	<0.001	<0.003	234	Sand to clear No odor
3	54.7	64.6	1.6	10.0	1/24/2014	390	854	<0.001	<0.001	<0.001	<0.003	196	Sand to clear No odor
3	55.6	64.6	1.4	10.0	4/8/2014	390	1,220	<0.001	<0.001	<0.001	<0.003	238	Sand to clear No odor
3	56.2	64.6	1.4	10.0	7/22/2014	380	1,270	<0.001	<0.001	<0.001	<0.003	225	Sand to clear No odor
3	51.4	64.6	2.1	10.0	10/24/2014	204	968	<0.001	<0.001	<0.001	<0.003	189	Sand to clear No odor
3	51.4	64.6	2.1	10.0	2/4/2015	304	1,120	<0.001	<0.001	<0.001	<0.003	195	Sand to clear No odor
3	52.8	64.6	1.9	10.0	4/22/2015	236	1,030	<0.001	<0.001	<0.001	<0.003	151	Sand to clear No odor
3	53.3	64.6	1.8	10.0	7/30/2015	212	950	<0.001	<0.001	<0.001	<0.003	128	Sand to clear No odor
3	51.9	64.6	2.0	10.0	10/23/2015	260	1,280	<0.001	<0.001	<0.001	<0.003	227	Sand to clear No odor
3	50.5	64.6	2.3	10.0	2/1/2016	264	1,130	<0.001	<0.001	<0.001	<0.003	163	Sand to clear No odor
3	51.3	64.6	2.1	8.0	4/25/2016	280	944	<0.001	<0.001	<0.001	<0.003	193	Sand to clear No odor
3	50.1	64.6	2.3	8.0	7/25/2016	268	1,130	<0.001	<0.001	<0.001	<0.003	209	Sand to clear No odor
3	50.4	64.6	2.3	8.0	10/31/2016	320	1,140	<0.001	<0.001	<0.001	<0.003	271	Sand to clear No odor
3	50.3	64.6	2.3	8.0	2/8/2017	284	914	<0.001	<0.001	<0.001	<0.003	214	Sand to clear No odor
3	48.5	64.6	2.4	8.0	4/13/2017	188	906	<0.001	<0.001	<0.001	<0.003	190	Sand to clear No odor
3	48.5	64.6	2.4	8.0	8/17/2017	220	1,090	<0.001	<0.001	<0.001	<0.003	199	Sand to clear No odor
3	48.5	64.6	2.4	8.0	10/26/2017	224	1,060	<0.001	<0.001	<0.001	<0.003	220	Sand to clear No odor
3	47.6	64.6	2.7	8.0	1/18/2018	212	1,140	<0.001	<0.001	<0.001	<0.003	202	Sand to clear No odor
3	47.2	64.6	2.8	8.0	4/30/2018	280	1,080	<0.001	<0.001	<0.001	<0.003	276	Sand to clear No odor
3	47.0	64.6	2.8	8.0	8/14/2018	344	1,420	<0.001	<0.001	<0.001	<0.003	240	Sand to clear No odor
3	46.9	64.6	2.8	8.0	11/1/2018	288	1,250	<0.001	<0.001	<0.001	<0.003	237	Sand to clear No odor
3	46.7	64.6	2.9	8.0	2/12/2019	228	977	<0.001	<0.001	<0.001	<0.003	247	Sand to clear No odor
3	46.6	64.4	2.9	8.0	4/26/2019	220	977	<0.001	<0.001	<0.001	<0.003	247	Sand to clear No odor
3	46.5	64.4	2.9	8.0	7/29/2019	212	931	<0.001	<0.001	<0.001	<0.003	142	Sand to clear No odor
3	46.6	64.4	2.9	8.0	10/28/2019	216	1,080	<0.001	<0.001	<0.001	<0.003	198	Sand to clear No odor


BD P-26-2 Vent
Groundwater Chloride Concentrations
chloride conc (mg/l)
5,500
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
2005
2007
2009
2011
2013
2015
2017
2019
MW-1 (at-source)
MW-2 (down-gradient)
MW-3 (far down-gradient)
OCD Std

APPENDIX

ROC - BD P-26-2 (AP-97)
Groundwater Chloride Concentrations
Table 3 - Annual Averages (mg/l)

year	MW-1 (at-source)	MW-2 (down-gradient)	MW-3 (far down-gradient)	OCD Std
2007	5,000			250
2008	5,325	408		250
2009	3,413	431		250
2010	2,048	698		250
2011	1,105	845		250
2012	2,078	1,045		250
2013	1,315	1,133	705	250
2014	521	955	705	250
2015	562	1,160	868	250
2016	515	1,195	828	250
2017	554	1,383	760	250
2018	748	1,735	710	250
2019	740	1,378	728	250

APPENDIX

Table 4a - BD P-26-2 Groundwater Data

MW	Depth to Water (ft)	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
1	47.8	59.4	1.9	6.0	11/12/2007	5,000	9,415	<0.002	<0.002	<0.002	<0.006	430	Clear No odor
1	47.4	59.5	1.9	8.0	1/14/2008	5,100	9,453	<0.001	<0.001	<0.001	<0.003	469	Clear No odor
1	47.5	59.5	1.9	8.0	4/4/2008	5,300	10,100	<0.001	<0.001	<0.001	<0.003	437	Sand to clear No odor
1	48.1	59.5	1.8	8.0	7/16/2008	5,300	9,870	<0.001	<0.001	<0.001	<0.003	448	Sand to clear No odor
1	48.4	59.5	1.8	8.0	10/6/2008	5,600	10,700	<0.001	<0.001	<0.001	<0.003	473	Sand to clear No odor
1	48.8	59.4	1.7	8.0	1/16/2009	4,000	7,680	<0.001	<0.001	<0.001	<0.003	497	Sand to clear No odor
1	47.9	59.4	1.8	6.0	4/15/2009	4,500	8,190	<0.001	<0.001	<0.001	<0.003	462	Sand to clear No odor
1	47.2	59.4	2.0	6.0	7/15/2009	3,050	6,000	<0.001	<0.001	<0.001	<0.003	403	Sand to clear No odor
1	46.9	59.4	2.0	6.0	10/9/2009	2,100	4,360	<0.001	<0.001	<0.001	<0.003	516	Sand to clear No odor
1	47.2	59.5	2.0	6.0	1/15/2010	2,120	4,600	<0.001	<0.001	<0.001	<0.003	410	Sand to clear No odor
1	47.4	59.5	1.9	6.0	4/13/2010	2,850	5,530	<0.001	<0.001	<0.001	<0.003	489	Sand to clear No odor
1	47.3	59.5	2.0	6.0	7/13/2010	2,300	4,750	<0.001	<0.001	<0.001	<0.003	453	Sand to clear No odor
1	46.5	59.5	2.1	6.0	10/8/2010	920	2,540	<0.001	<0.001	<0.001	<0.003	437	Sand to clear No odor
1	46.2	59.5	2.1	6.0	1/18/2011	820	2,140	<0.001	<0.001	<0.001	<0.003	319	Sand to clear No odor
1	46.0	59.5	2.1	6.0	4/14/2011	800	2,100	<0.001	<0.001	<0.001	<0.003	356	Sand to clear No odor
1	46.2	59.5	2.1	6.0	7/19/2011	1,320	2,760	<0.001	<0.001	<0.001	<0.003	327	Sand to clear No odor
1	46.5	59.5	2.1	6.0	10/17/2011	1,480	3,260	<0.001	<0.001	<0.001	<0.003	281	Sand to clear No odor
1	46.5	59.5	2.1	6.0	1/20/2012	2,370	4,630	<0.001	<0.001	<0.001	<0.003	392	Sand to clear No odor
1	46.5	59.5	2.1	6.0	4/19/2012	2,100	4,190	<0.001	<0.001	<0.001	<0.003	384	Sand to clear No odor
1	51.6	59.5	1.3	6.0	7/17/2012	2,220	3,810	<0.001	<0.001	<0.001	<0.003	376	Sand to clear No odor
1	49.6	59.5	1.6	6.0	10/15/2012	1,620	3,480	<0.001	<0.001	<0.001	<0.003	427	Sand to clear No odor
1	51.0	59.5	1.3	6.0	1/9/2013	1,780	4,100	<0.001	<0.001	<0.001	<0.003	370	Sand to clear No odor
1	52.0	59.5	1.2	6.0	4/22/2013	1,900	3,800	<0.001	<0.001	<0.001	<0.003	368	Sand to clear No odor
1	51.0	59.5	1.3	6.0	7/18/2013	840	2,190	<0.001	<0.001	<0.001	<0.003	284	Sand to clear No odor
1	52.3	59.5	1.1	6.0	10/18/2013	740	2,110	<0.001	<0.001	<0.001	<0.003	312	Sand to clear No odor
1	54.0	59.5	0.9	6.0	1/24/2014	600	1,760	<0.001	<0.001	<0.001	<0.003	284	Sand to clear No odor
1	54.9	59.5	0.7	6.0	4/8/2014	620	1,710	<0.001	<0.001	<0.001	<0.003	276	Sand to clear No odor
1	55.5	59.5	0.6	6.0	7/22/2014	490	1,570	<0.001	<0.001	<0.001	<0.003	307	Sand to clear No odor
1	50.6	59.5	1.4	6.0	10/24/2014	372	1,260	<0.001	<0.001	<0.001	<0.003	188	Sand to clear No odor
1	50.9	59.5	1.4	6.0	2/4/2015	460	1,560	<0.001	<0.001	<0.001	<0.003	270	Sand to clear No odor
1	51.1	59.5	1.3	6.0	4/22/2015	540	1,640	<0.001	<0.001	<0.001	<0.003	245	Sand to clear No odor
1	52.2	59.5	1.2	6.0	7/30/2015	749	2,140	<0.001	<0.001	<0.001	<0.003	252	Sand to clear No odor
1	51.0	59.5	1.4	6.0	10/23/2015	500	1,600	<0.001	<0.001	<0.001	<0.003	192	Sand to clear No odor
1	50.1	59.5	1.5	6.0	2/1/2016	384	1,390	<0.001	<0.001	<0.001	<0.003	199	Sand to clear No odor
1	51.2	59.5	1.3	6.0	4/25/2016	560	1,500	<0.001	<0.001	<0.001	<0.003	250	Sand to clear No odor
1	49.7	59.5	1.6	6.0	7/25/2016	396	1,410	<0.001	<0.001	<0.001	<0.003	226	Sand to clear No odor
1	50.1	59.5	1.5	6.0	10/31/2016	720	2,120	<0.001	<0.001	<0.001	<0.003	360	Sand to clear No odor
1	49.3	59.5	1.6	6.0	2/8/2017	700	1,880	<0.001	<0.001	<0.001	<0.003	240	Sand to clear No odor
1	48.9	59.5	1.7	6.0	4/13/2017	790	1,900	<0.001	<0.001	<0.001	<0.003	256	Sand to clear No odor
1	47.9	59.5	1.9	6.0	8/17/2017	356	1,300	<0.001	<0.001	<0.001	<0.003	229	Sand to clear No odor
1	47.8	59.5	1.9	6.0	10/26/2017	368	1,400	<0.001	<0.001	<0.001	<0.003	204	Sand to clear No odor
1	46.8	59.5	2.0	6.0	1/18/2018	740	1,370	<0.001	<0.001	<0.001	<0.003	245	Sand to clear No odor
1	46.4	59.5	2.1	8.0	4/30/2018	710	1,590	<0.001	<0.001	<0.001	<0.003	250	Sand to clear No odor
1	46.3	59.5	2.1	8.0	8/14/2018	730	1,760	<0.001	<0.001	<0.001	<0.003	211	Sand to clear No odor
1	46.2	59.5	2.1	8.0	11/1/2018	810	1,770	<0.001	<0.001	<0.001	<0.003	264	Sand to clear No odor
1	45.9	59.5	2.2	8.0	2/12/2019	760	1,650	<0.001	<0.001	<0.001	<0.003	273	Sand to clear No odor
1	45.7	59.5	2.2	8.0	4/26/2019	710	1,700	<0.001	<0.001	<0.001	<0.003	230	Sand to clear No odor
1	46.7	59.5	2.2	8.0	7/29/2019	730	1,870	<0.001	<0.001	<0.001	<0.003	230	Sand to clear No odor
1	45.8	59.5	2.2	8.0	10/28/2019	760	1,860	<0.001	<0.001	<0.001	<0.003	224	Sand to clear No odor

APPENDIX

Table 4b - BD P-26-2 Groundwater Data

MW	Depth to Water (ft)	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
2	47.1	59.9	3.0	10.0	7/16/2008	432	1,470	<0.001	<0.001	<0.001	<0.003	253	Sand to clear No odor
2	47.4	59.9	2.0	10.0	10/6/2008	384	1,350	<0.001	<0.001	<0.001	<0.003	289	Sand to clear No odor
2	47.8	60.4	2.0	10.0	1/16/2009	400	1,360	<0.001	<0.001	<0.001	<0.003	262	Sand to clear No odor
2	47.0	60.4	2.1	10.0	4/15/2009	412	1,370	<0.001	<0.001	<0.001	<0.003	259	Sand to clear No odor
2	46.5	60.4	2.2	10.0	7/15/2009	432	1,420	<0.001	<0.001	<0.001	<0.003	268	Sand to clear No odor
2	46.1	60.4	2.3	10.0	10/9/2009	480	1,470	<0.001	<0.001	<0.001	<0.003	237	Sand to clear No odor
2	46.4	60.5	2.3	10.0	1/15/2010	590	1,660	<0.001	<0.001	<0.001	<0.003	215	Sand to clear No odor
2	46.5	60.5	2.2	10.0	4/13/2010	690	1,720	<0.001	<0.001	<0.001	<0.003	261	Sand to clear No odor
2	46.4	60.5	2.3	10.0	7/13/2010	820	1,940	<0.001	<0.001	<0.001	<0.003	255	Sand to clear No odor
2	45.8	60.5	2.4	10.0	10/8/2010	690	1,760	<0.001	<0.001	<0.001	<0.003	246	Sand to clear No odor
2	45.4	60.5	2.4	10.0	1/18/2011	900	2,400	<0.001	<0.001	<0.001	<0.003	361	Sand to clear No odor
2	45.3	60.5	2.4	10.0	4/14/2011	890	2,010	<0.001	<0.001	<0.001	<0.003	319	Sand to clear No odor
2	45.5	60.5	2.4	10.0	7/19/2011	810	1,900	<0.001	<0.001	<0.001	<0.003	283	Sand to clear No odor
2	45.8	60.5	2.4	10.0	10/17/2011	780	1,950	<0.001	<0.001	<0.001	<0.003	237	Sand to clear No odor
2	45.7	60.5	2.4	10.0	1/20/2012	830	1,950	<0.001	<0.001	<0.001	<0.003	323	Sand to clear No odor
2	45.8	60.5	2.4	10.0	4/19/2012	870	2,100	<0.001	<0.001	<0.001	<0.003	363	Sand to clear No odor
2	50.7	60.5	1.6	10.0	7/17/2012	1,340	2,870	<0.001	<0.001	<0.001	<0.003	278	Sand to clear No odor
2	48.6	60.5	1.9	10.0	10/15/2012	1,140	2,470	<0.001	<0.001	<0.001	<0.003	373	Sand to clear No odor
2	49.8	60.5	1.7	10.0	1/9/2013	1,090	2,410	<0.001	<0.001	<0.001	<0.003	298	Sand to clear No odor
2	51.1	60.5	1.5	10.0	4/22/2013	1,340	2,700	<0.001	<0.001	<0.001	<0.003	284	Sand to clear No odor
2	50.2	60.5	1.6	10.0	7/18/2013	980	2,400	<0.001	<0.001	<0.001	<0.003	222	Sand to clear No odor
2	51.5	60.5	1.5	10.0	10/18/2013	1,120	2,560	<0.001	<0.001	<0.001	<0.003	304	Sand to clear No odor
2	53.0	60.5	1.2	10.0	1/24/2014	1,000	2,580	<0.001	<0.001	<0.001	<0.003	251	Sand to clear No odor
2	53.9	60.5	1.1	10.0	4/8/2014	1,160	2,510	<0.001	<0.001	<0.001	<0.003	229	Sand to clear No odor
2	54.6	60.5	1.0	10.0	7/22/2014	970	2,390	<0.001	<0.001	<0.001	<0.003	245	Sand to clear No odor
2	50.0	60.5	1.7	10.0	10/24/2014	690	1,890	<0.001	<0.001	<0.001	<0.003	196	Sand to clear No odor
2	50.2	60.5	1.7	10.0	2/4/2015	1,140	2,510	<0.001	<0.001	<0.001	<0.003	285	Sand to clear No odor
2	51.1	60.5	1.5	10.0	4/22/2015	1,300	2,810	<0.001	<0.001	<0.001	<0.003	296	Sand to clear No odor
2	51.4	60.5	1.5	10.0	7/30/2015	980	2,770	<0.001	<0.001	<0.001	<0.003	162	Sand to clear No odor
2	50.3	60.5	1.6	10.0	10/23/2015	1,220	2,680	<0.001	<0.001	<0.001	<0.003	205	Sand to clear No odor
2	49.4	60.5	1.8	10.0	2/1/2016	1,260	2,900	<0.001	<0.001	<0.001	<0.003	258	Sand to clear No odor
2	50.5	60.5	1.6	10.0	4/25/2016	1,100	2,350	<0.001	<0.001	<0.001	<0.003	288	Sand to clear No odor
2	49.0	60.5	1.9	10.0	7/25/2016	1,160	2,520	<0.001	<0.001	<0.001	<0.003	276	Sand to clear No odor
2	49.4	60.5	1.8	10.0	10/31/2016	1,260	2,400	<0.001	<0.001	<0.001	<0.003	304	Sand to clear No odor
2	48.3	60.5	2.0	10.0	2/8/2017	1,020	2,510	<0.001	<0.001	<0.001	<0.003	291	Sand to clear No odor
2	47.9	60.5	2.0	10.0	4/13/2017	1,340	2,710	<0.001	<0.001	<0.001	<0.003	294	Sand to clear No odor
2	47.2	60.5	2.0	10.0	8/17/2017	1,570	3,160	<0.001	<0.001	<0.001	<0.003	260	Sand to clear No odor
2	47.1	60.5	2.0	10.0	10/26/2017	1,600	3,430	<0.001	<0.001	<0.001	<0.003	272	Sand to clear No odor
2	46.0	60.5	2.3	8.0	1/18/2018	1,700	3,310	<0.001	<0.001	<0.001	<0.003	351	Sand to clear No odor
2	45.6	60.5	2.4	8.0	4/30/2018	1,580	3,360	<0.001	<0.001	<0.001	<0.003	395	Sand to clear No odor
2	45.5	60.5	2.4	8.0	8/14/2018	1,580	3,040	<0.001	<0.001	<0.001	<0.003	276	Sand to clear No odor
2	45.4	60.5	2.4	8.0	11/1/2018	2,080	3,170	<0.001	<0.001	<0.001	<0.003	302	Sand to clear No odor
2	45.2	60.5	2.5	8.0	2/12/2019	1,540	3,030	<0.001	<0.001	<0.001	<0.003	365	Sand to clear No odor
2	45.1	60.5	2.5	8.0	4/26/2019	1,580	3,080	<0.001	<0.001	<0.001	<0.003	351	Sand to clear No odor
2	45.0	60.5	2.5	8.0	7/29/2019	1,220	2,840	<0.001	<0.001	<0.001	<0.003	317	Sand to clear No odor
2	45.0	60.5	2.8	8.0	10/28/2019	1,170	2,660	<0.001	<0.001	<0.001	<0.003	324	Sand to clear No odor

APPENDIX

Table 4c - BD P-26-2 Groundwater Data

MW	Depth to Water (ft)	Total Depth (ft)	Well Volume (gal)	Volume Purged (gal)	Sample Date	Cl (mg/l)	TDS (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl Benzene (mg/l)	Total Xylenes (mg/l)	Sulfate (mg/l)	Comments
3	51.1	62.1	1.8	8.0	7/18/2013	670	1,640	<0.001	<0.001	<0.001	<0.003	204	Sand to clear No odor
3	52.2	62.1	1.6	8.0	10/18/2013	740	1,710	<0.001	<0.001	<0.001	<0.003	216	Sand to clear No odor
3	53.6	62.1	1.4	8.0	1/24/2014	680	1,780	<0.001	<0.001	<0.001	<0.003	213	Sand to clear No odor
3	54.5	62.1	1.2	8.0	4/8/2014	820	1,760	<0.001	<0.001	<0.001	<0.003	223	Sand to clear No odor
3	55.2	62.1	1.1	8.0	7/22/2014	500	1,980	<0.001	<0.001	<0.001	<0.003	201	Sand to clear No odor
3	50.9	62.1	1.8	8.0	10/24/2014	820	2,190	<0.001	<0.001	<0.001	<0.003	224	Sand to clear No odor
3	51.0	62.1	1.8	8.0	2/4/2015	820	1,970	<0.001	<0.001	<0.001	<0.003	214	Sand to clear No odor
3	51.8	62.1	1.6	8.0	4/22/2015	870	2,100	<0.001	<0.001	<0.001	<0.003	213	Sand to clear No odor
3	52.3	62.1	1.6	8.0	7/30/2015	910	2,360	<0.001	<0.001	<0.001	<0.003	163	Sand to clear No odor
3	51.1	62.1	1.8	8.0	10/23/2015	870	2,170	<0.001	<0.001	<0.001	<0.003	221	Sand to clear No odor
3	50.3	62.1	1.9	8.0	2/1/2016	860	2,040	<0.001	<0.001	<0.001	<0.003	209	Sand to clear No odor
3	51.2	62.1	1.7	8.0	4/25/2016	830	2,030	<0.001	<0.001	<0.001	<0.003	262	Sand to clear No odor
3	49.8	62.1	2.0	8.0	7/25/2016	820	1,920	<0.001	<0.001	<0.001	<0.003	249	Sand to clear No odor
3	50.3	62.1	1.9	8.0	10/31/2016	800	1,990	<0.001	<0.001	<0.001	<0.003	242	Sand to clear No odor
3	49.1	62.1	2.1	8.0	2/8/2017	760	1,720	<0.001	<0.001	<0.001	<0.003	223	Sand to clear No odor
3	48.7	62.1	2.1	8.0	4/13/2017	810	1,970	<0.001	<0.001	<0.001	<0.003	225	Sand to clear No odor
3	48.1	62.1	2.2	8.0	8/17/2017	780	1,920	<0.001	<0.001	<0.001	<0.003	222	Sand to clear No odor
3	48.0	62.1	2.3	8.0	10/26/2017	690	1,850	<0.001	<0.001	<0.001	<0.003	233	Sand to clear No odor
3	46.9	62.1	2.4	8.0	1/18/2018	610	1,530	<0.001	<0.001	<0.001	<0.003	236	Sand to clear No odor
3	46.5	62.1	2.5	8.0	4/30/2018	720	1,630	<0.001	<0.001	<0.001	<0.003	287	Sand to clear No odor
3	46.4	62.1	2.5	8.0	8/14/2018	730	1,760	<0.001	<0.001	<0.001	<0.003	186	Sand to clear No odor
3	46.3	62.1	2.5	8.0	11/1/2018	780	1,700	<0.001	<0.001	<0.001	<0.003	237	Sand to clear No odor
3	46.1	62.1	2.6	8.0	2/12/2019	710	1,740	<0.001	<0.001	<0.001	<0.003	253	Sand to clear No odor
3	46.0	62.1	2.6	8.0	4/26/2019	730	1,720	<0.001	<0.001	<0.001	<0.003	242	Sand to clear No odor
3	45.9	62.1	2.6	8.0	7/29/2019	750	1,740	<0.001	<0.001	<0.001	<0.003	235	Sand to clear No odor
3	45.9	62.1	2.6	8.0	10/28/2019	720	1,780	<0.001	<0.001	<0.001	<0.003	206	Sand to clear No odor

CARDINAL Laboratories

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

February 21, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD P-26-1 VENT

Enclosed are the results of analyses for samples received by the laboratory on 02/15/19 13:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	02/15/2019	Sampling Date:	02/12/2019
Reported:	02/21/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #1 (H900621-01)

BTEX 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	02/19/2019	ND	0.024	120	0.0200	1.25	
Toluene*	<0.001	0.001	02/19/2019	ND	0.023	114	0.0200	1.65	
Ethylbenzene*	<0.001	0.001	02/19/2019	ND	0.021	104	0.0200	2.53	
Total Xylenes*	<0.003	0.003	02/19/2019	ND	0.062	103	0.0600	2.53	
Total BTEX	<0.006	0.006	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *70.4 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**220**	4.00	02/18/2019	ND	104	104	100	3.92	

Sulfate 375.4 mg/L Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**244**	50.0	02/18/2019	ND	23.3	117	20.0	0.556	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1060**	5.00	02/19/2019	ND	516	97.9	527	2.62	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	02/15/2019	Sampling Date:	02/12/2019
Reported:	02/21/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #2 (H900621-02)

BTEX 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	02/19/2019	ND	0.024	120	0.0200	1.25	
Toluene*	<0.001	0.001	02/19/2019	ND	0.023	114	0.0200	1.65	
Ethylbenzene*	<0.001	0.001	02/19/2019	ND	0.021	104	0.0200	2.53	
Total Xylenes*	<0.003	0.003	02/19/2019	ND	0.062	103	0.0600	2.53	
Total BTEX	<0.006	0.006	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *68.1 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**196**	4.00	02/18/2019	ND	104	104	100	3.92	

Sulfate 375.4 mg/L Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**196**	50.0	02/18/2019	ND	23.3	117	20.0	0.556	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**839**	5.00	02/19/2019	ND	516	97.9	527	2.62	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	02/15/2019	Sampling Date:	02/12/2019
Reported:	02/21/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #3 (H900621-03)

BTEX 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	02/19/2019	ND	0.024	120	0.0200	1.25	
Toluene*	<0.001	0.001	02/19/2019	ND	0.023	114	0.0200	1.65	
Ethylbenzene*	<0.001	0.001	02/19/2019	ND	0.021	104	0.0200	2.53	
Total Xylenes*	<0.003	0.003	02/19/2019	ND	0.062	103	0.0600	2.53	
Total BTEX	<0.006	0.006	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *74.1 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**228**	4.00	02/18/2019	ND	104	104	100	3.92	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**247**	50.0	02/18/2019	ND	23.3	117	20.0	0.556	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**977**	5.00	02/19/2019	ND	516	97.9	527	2.62	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
BS1	Blank spike recovery above laboratory acceptance criteria. Results for analyte potentially biased high.
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

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: BD P-26-1 Vent
Project Location: T21S R37E Sec26 P ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY) H900621	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME
1	Monitor Well #1	G	3	X					2				1		2/12	14:30
2	Monitor Well #2	G	3	X					2				1		2/12	16:00
3	Monitor Well #3	G	3	X					2				1		2/12	13:10

ANALYSIS REQUEST

(Circle or Specify Method No.)

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

Relinquished by: Rozanne Johnson	Date: 2/15/19	Time: 13:40	Received by:	Date: 2-15-19	Time: 13:40
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 — Yes ✓ / No; Intact — Yes ✓ / No

CHECKED BY: (Initials) JO

REMARKS:

Email Results: kjones@riceswd.com
rozanne11@windstream.net

CARDINAL Laboratories

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

May 14, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD P-26-1 VENT

Enclosed are the results of analyses for samples received by the laboratory on 05/01/19 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	05/01/2019	Sampling Date:	04/26/2019
Reported:	05/14/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #1 (H901570-01)

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	05/08/2019	ND	0.021	103	0.0200	1.25	
Toluene*	<0.001	0.001	05/08/2019	ND	0.021	106	0.0200	2.31	
Ethylbenzene*	<0.001	0.001	05/08/2019	ND	0.020	99.2	0.0200	0.232	
Total Xylenes*	<0.003	0.003	05/08/2019	ND	0.060	101	0.0600	0.0281	
Total BTEX	<0.006	0.006	05/08/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**208**	4.00	05/06/2019	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*	**158**	25.0	05/13/2019	ND	21.4	107	20.0	5.25	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**953**	5.00	05/09/2019	ND	533	101	527	0.153	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	05/01/2019	Sampling Date:	04/26/2019
Reported:	05/14/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #2 (H901570-02)

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	05/08/2019	ND	0.021	103	0.0200	1.25	
Toluene*	<0.001	0.001	05/08/2019	ND	0.021	106	0.0200	2.31	
Ethylbenzene*	<0.001	0.001	05/08/2019	ND	0.020	99.2	0.0200	0.232	
Total Xylenes*	<0.003	0.003	05/08/2019	ND	0.060	101	0.0600	0.0281	
Total BTEX	<0.006	0.006	05/08/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**192**	4.00	05/06/2019	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*	**178**	25.0	05/13/2019	ND	21.4	107	20.0	5.25	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**944**	5.00	05/09/2019	ND	533	101	527	0.153	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	05/01/2019	Sampling Date:	04/26/2019
Reported:	05/14/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #3 (H901570-03)

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	05/08/2019	ND	0.021	103	0.0200	1.25	
Toluene*	<0.001	0.001	05/08/2019	ND	0.021	106	0.0200	2.31	
Ethylbenzene*	<0.001	0.001	05/08/2019	ND	0.020	99.2	0.0200	0.232	
Total Xylenes*	<0.003	0.003	05/08/2019	ND	0.060	101	0.0600	0.0281	
Total BTEX	<0.006	0.006	05/08/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**220**	4.00	05/06/2019	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*	**247**	50.0	05/13/2019	ND	21.4	107	20.0	5.25	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**977**	5.00	05/09/2019	ND	533	101	527	0.153	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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: BD P-26-1 Vent
Project Location: T21S R37E Sec26 P ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY H901570)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME	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	Anions (Cl, SO4, CO3, HCO3)	Cations (Ca, Mg, Na, K)	Sulfates (SO_4)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
1	Monitor Well #1	G	3	X					2				1		4/26	14:15		X																X	X	X	
2	Monitor Well #2	G	3	X					2				1		4/26	15:50		X																X	X	X	
3	Monitor Well #3	G	3	X					2				1		4/26	13:05		X																X	X	X	

Relinquished by: Rozanne Johnson	Date: 5/1/2019	Time: 14:00	Received by: Tamara Oldaker
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)

Date: 5-1-19 Time: 14:00

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

REMARKS:

Email Results: kjones@riceswd.com
rozanne11@windstream.net

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes ✓ / No; Intact: Yes ✓ / No

CHECKED BY: (Initials) T.O.

CARDINAL Laboratories

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

August 08, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD P-26-1 VENT

Enclosed are the results of analyses for samples received by the laboratory on 08/01/19 13:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	08/01/2019	Sampling Date:	07/29/2019
Reported:	08/08/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #1 (H902638-01)

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	08/07/2019	ND	0.021	103	0.0200	1.38	
Toluene*	<0.001	0.001	08/07/2019	ND	0.021	106	0.0200	1.40	
Ethylbenzene*	<0.001	0.001	08/07/2019	ND	0.020	99.5	0.0200	1.02	
Total Xylenes*	<0.003	0.003	08/07/2019	ND	0.060	99.8	0.0600	0.785	
Total BTEX	<0.006	0.006	08/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.9 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**296**	4.00	08/02/2019	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*	**175**	25.0	08/07/2019	ND	19.2	96.0	20.0	5.73	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1080**	5.00	08/06/2019	ND	531	101	527	0.840	

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	08/01/2019	Sampling Date:	07/29/2019
Reported:	08/08/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #2 (H902638-02)

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	08/07/2019	ND	0.021	103	0.0200	1.38	
Toluene*	<0.001	0.001	08/07/2019	ND	0.021	106	0.0200	1.40	
Ethylbenzene*	<0.001	0.001	08/07/2019	ND	0.020	99.5	0.0200	1.02	
Total Xylenes*	<0.003	0.003	08/07/2019	ND	0.060	99.8	0.0600	0.785	
Total BTEX	<0.006	0.006	08/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**208**	4.00	08/02/2019	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*	**185**	25.0	08/07/2019	ND	19.2	96.0	20.0	5.73	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**931**	5.00	08/06/2019	ND	531	101	527	0.840	

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	08/01/2019	Sampling Date:	07/29/2019
Reported:	08/08/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #3 (H902638-03)

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	08/07/2019	ND	0.021	103	0.0200	1.38	
Toluene*	<0.001	0.001	08/07/2019	ND	0.021	106	0.0200	1.40	
Ethylbenzene*	<0.001	0.001	08/07/2019	ND	0.020	99.5	0.0200	1.02	
Total Xylenes*	<0.003	0.003	08/07/2019	ND	0.060	99.8	0.0600	0.785	
Total BTEX	<0.006	0.006	08/07/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.0 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**212**	4.00	08/02/2019	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*	**142**	25.0	08/07/2019	ND	19.2	96.0	20.0	5.73	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**931**	5.00	08/06/2019	ND	531	101	527	0.840	

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Mike Snyder For 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: BD P-26-1 Vent
Project Location: T21S R37E Sec26 P ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H902638

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME
1	Monitor Well #1	G	3	X				2				1		7/29	14:00
2	Monitor Well #2	G	3	X				2				1		7/29	15:30
3	Monitor Well #3	G	3	X				2				1		7/29	12:25

ANALYSIS REQUEST
(Circle or Specify Method No.)

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

Relinquished by: Rozanne Johnson	Date: 8/1/2019	Time: 13:15	Received by: Tamara Elliott	Date: 8-1-19	Time: 13:15
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
rozanne11@windstream.net

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes ✓ / No; Intact: Yes ✓ / No

CHECKED BY: (Initials) JP

CARDINAL Laboratories

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

November 06, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD P-26-1 VENT

Enclosed are the results of analyses for samples received by the laboratory on 10/31/19 13:20.

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.

Cardinal Laboratories is accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	10/31/2019	Sampling Date:	10/28/2019
Reported:	11/06/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #1 (H903721-01)

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	11/05/2019	ND	0.020	98.4	0.0200	0.744	
Toluene*	<0.001	0.001	11/05/2019	ND	0.017	84.5	0.0200	3.21	
Ethylbenzene*	<0.001	0.001	11/05/2019	ND	0.018	90.9	0.0200	3.11	
Total Xylenes*	<0.003	0.003	11/05/2019	ND	0.056	93.3	0.0600	1.61	
Total BTEX	<0.006	0.006	11/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *74-98*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**244**	4.00	11/01/2019	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*	**151**	25.0	11/01/2019	ND	19.9	99.4	20.0	15.8	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**879**	5.00	11/05/2019	ND	495	93.9	527	1.68	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	10/31/2019	Sampling Date:	10/28/2019
Reported:	11/06/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #2 (H903721-02)

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	11/05/2019	ND	0.020	98.4	0.0200	0.744	
Toluene*	<0.001	0.001	11/05/2019	ND	0.017	84.5	0.0200	3.21	
Ethylbenzene*	<0.001	0.001	11/05/2019	ND	0.018	90.9	0.0200	3.11	
Total Xylenes*	<0.003	0.003	11/05/2019	ND	0.056	93.3	0.0600	1.61	
Total BTEX	<0.006	0.006	11/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.8 %* *74-98*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**212**	4.00	11/01/2019	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*	**166**	25.0	11/01/2019	ND	19.9	99.4	20.0	15.8	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**949**	5.00	11/05/2019	ND	495	93.9	527	1.68	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	10/31/2019	Sampling Date:	10/28/2019
Reported:	11/06/2019	Sampling Type:	Water
Project Name:	BD P-26-1 VENT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P~ LEA CO NM		

Sample ID: MONITOR WELL #3 (H903721-03)

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	11/05/2019	ND	0.020	98.4	0.0200	0.744	
Toluene*	<0.001	0.001	11/05/2019	ND	0.017	84.5	0.0200	3.21	
Ethylbenzene*	<0.001	0.001	11/05/2019	ND	0.018	90.9	0.0200	3.11	
Total Xylenes*	<0.003	0.003	11/05/2019	ND	0.056	93.3	0.0600	1.61	
Total BTEX	<0.006	0.006	11/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.0 %* *74-98*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**216**	4.00	11/01/2019	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*	**198**	50.0	11/01/2019	ND	19.9	99.4	20.0	15.8	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1080**	5.00	11/05/2019	ND	495	93.9	527	1.68	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Celey D. Keene

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: BD P-26-1 Vent
Project Location: T21S R37E Sec26 P ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME	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	Anions (Cl, SO4, CO3, HCO3)	Cations (Ca, Mg, Na, K)	Sulfates (SO4)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
H903721																																					
1	Monitor Well #1	G	3	X				2				1		10/28	15:55		X																	X	X	X	
2	Monitor Well #2	G	3	X				2				1		10/28	17:05		X																	X	X	X	
3	Monitor Well #3	G	3	X				2				1		10/28	14:40		X																	X	X	X	

Relinquished by: Rozanne Johnson	Date: 10/31/2019	Time: 13:20	Received by: Tamara Oldaker	Date: 10-31-19	Time: 13:20
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
rozanne11@windstream.net

Delivered By: (Circle One)	Sample Condition		CHECKED BY:
Sampler - UPS - Bus - Other:	Cool: Yes ✓ / No	Intact: Yes ✓ / No	(Initials) TO

CARDINAL Laboratories

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

February 21, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION P-26-2

Enclosed are the results of analyses for samples received by the laboratory on 02/15/19 13:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	02/15/2019	Sampling Date:	02/12/2019
Reported:	02/21/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #1 (H900620-01)

BTEX 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	02/19/2019	ND	0.024	120	0.0200	1.25	
Toluene*	<0.001	0.001	02/19/2019	ND	0.023	114	0.0200	1.65	
Ethylbenzene*	<0.001	0.001	02/19/2019	ND	0.021	104	0.0200	2.53	
Total Xylenes*	<0.003	0.003	02/19/2019	ND	0.062	103	0.0600	2.53	
Total BTEX	<0.006	0.006	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *71.5 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**760**	4.00	02/18/2019	ND	104	104	100	3.92	

Sulfate 375.4 mg/L Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**273**	50.0	02/18/2019	ND	23.3	117	20.0	0.556	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1650**	5.00	02/19/2019	ND	516	97.9	527	2.62	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	02/15/2019	Sampling Date:	02/12/2019
Reported:	02/21/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #2 (H900620-02)

BTEX 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	02/19/2019	ND	0.024	120	0.0200	1.25	
Toluene*	<0.001	0.001	02/19/2019	ND	0.023	114	0.0200	1.65	
Ethylbenzene*	<0.001	0.001	02/19/2019	ND	0.021	104	0.0200	2.53	
Total Xylenes*	<0.003	0.003	02/19/2019	ND	0.062	103	0.0600	2.53	
Total BTEX	<0.006	0.006	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *71.0 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**1540**	4.00	02/18/2019	ND	104	104	100	3.92	

Sulfate 375.4 mg/L Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**365**	83.3	02/18/2019	ND	23.3	117	20.0	0.556	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**3030**	5.00	02/19/2019	ND	516	97.9	527	2.62	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	02/15/2019	Sampling Date:	02/12/2019
Reported:	02/21/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #3 (H900620-03)

BTEX 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	02/19/2019	ND	0.024	120	0.0200	1.25	
Toluene*	<0.001	0.001	02/19/2019	ND	0.023	114	0.0200	1.65	
Ethylbenzene*	<0.001	0.001	02/19/2019	ND	0.021	104	0.0200	2.53	
Total Xylenes*	<0.003	0.003	02/19/2019	ND	0.062	103	0.0600	2.53	
Total BTEX	<0.006	0.006	02/19/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *70.1 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**710**	4.00	02/18/2019	ND	104	104	100	3.92	

Sulfate 375.4 mg/L Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	**253**	50.0	02/18/2019	ND	23.3	117	20.0	0.556	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1740**	5.00	02/19/2019	ND	516	97.9	527	2.62	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
BS1	Blank spike recovery above laboratory acceptance criteria. Results for analyte potentially biased high.
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

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: BD Junction P-26-2
Project Location: T21S R37E Sec26 P ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

LAB # (LAB USE ONLY) H900620	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME
1	Monitor Well #1	G	3	X				2				1		2/12	11:55
2	Monitor Well #2	G	3	X				2				1		2/12	10:45
3	Monitor Well #3	G	3	X				2				1		2/12	9:15

ANALYSIS REQUEST

(Circle or Specify Method No.)

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

Relinquished by: Rozanne Johnson	Date: 2/15/19	Time: 13:40	Received by:	Date: 2-15-19	Time: 13:40
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
rozanne11@windstream.net

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes ✓ / No ; Intact: Yes ✓ / No

CHECKED BY: (Initials) T.O.

CARDINAL Laboratories

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

May 14, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION P-26-2

Enclosed are the results of analyses for samples received by the laboratory on 05/01/19 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	05/01/2019	Sampling Date:	04/26/2019
Reported:	05/14/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #1 (H901569-01)

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	05/08/2019	ND	0.021	103	0.0200	1.25	
Toluene*	**0.002**	0.001	05/08/2019	ND	0.021	106	0.0200	2.31	
Ethylbenzene*	<0.001	0.001	05/08/2019	ND	0.020	99.2	0.0200	0.232	
Total Xylenes*	<0.003	0.003	05/08/2019	ND	0.060	101	0.0600	0.0281	
Total BTEX	<0.006	0.006	05/08/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**710**	4.00	05/08/2019	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*	**230**	50.0	05/04/2019	ND	23.5	118	20.0	2.06	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1700**	5.00	05/09/2019	ND	533	101	527	0.153	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	05/01/2019	Sampling Date:	04/26/2019
Reported:	05/14/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #2 (H901569-02)

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	05/08/2019	ND	0.021	103	0.0200	1.25	
Toluene*	<0.001	0.001	05/08/2019	ND	0.021	106	0.0200	2.31	
Ethylbenzene*	<0.001	0.001	05/08/2019	ND	0.020	99.2	0.0200	0.232	
Total Xylenes*	<0.003	0.003	05/08/2019	ND	0.060	101	0.0600	0.0281	
Total BTEX	<0.006	0.006	05/08/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**1580**	4.00	05/08/2019	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*	**351**	50.0	05/04/2019	ND	23.5	118	20.0	2.06	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**3080**	5.00	05/09/2019	ND	533	101	527	0.153	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	05/01/2019	Sampling Date:	04/26/2019
Reported:	05/14/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #3 (H901569-03)

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	05/08/2019	ND	0.021	103	0.0200	1.25	
Toluene*	<0.001	0.001	05/08/2019	ND	0.021	106	0.0200	2.31	
Ethylbenzene*	<0.001	0.001	05/08/2019	ND	0.020	99.2	0.0200	0.232	
Total Xylenes*	<0.003	0.003	05/08/2019	ND	0.060	101	0.0600	0.0281	
Total BTEX	<0.006	0.006	05/08/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**730**	4.00	05/08/2019	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*	**242**	50.0	05/04/2019	ND	23.5	118	20.0	2.06	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1720**	5.00	05/09/2019	ND	533	101	527	0.153	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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: BD Junction P-26-2
Project Location: T21S R37E Sec26 P ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY) H901569	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME	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	Anions (Cl, SO4, CO3, HCO3)	Cations (Ca, Mg, Na, K)	Sulfates (SO4)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
	Monitor Well #1	G	3	X				2				1		4/26	11:40		X																X	X	X	
	Monitor Well #2	G	3	X				2				1		4/26	10:30		X																X	X	X	
	Monitor Well #3	G	3	X				2				1		4/26	9:00		X																X	X	X	

Relinquished by: Rozanne Johnson	Date: 5/1/2019	Time: 14:00	Received by: Tamara Oldaker	Date: 5-1-19	Time: 14:00
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
rozanne11@windstream.net

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes ✓ / No ; Intact: Yes ✓ / No

CHECKED BY: (Initials) T.O.

CARDINAL Laboratories

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

August 08, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION P-26-2

Enclosed are the results of analyses for samples received by the laboratory on 08/01/19 13:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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 accreditated 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,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	08/01/2019	Sampling Date:	07/29/2019
Reported:	08/08/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #1 (H902637-01)

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	08/06/2019	ND	0.021	103	0.0200	1.38	
Toluene*	<0.001	0.001	08/06/2019	ND	0.021	106	0.0200	1.40	
Ethylbenzene*	<0.001	0.001	08/06/2019	ND	0.020	99.5	0.0200	1.02	
Total Xylenes*	<0.003	0.003	08/06/2019	ND	0.060	99.8	0.0600	0.785	
Total BTEX	<0.006	0.006	08/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**730**	4.00	08/02/2019	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*	**230**	50.0	08/05/2019	ND	22.2	111	20.0	4.55	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1870**	5.00	08/06/2019	ND	531	101	527	0.840	

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	08/01/2019	Sampling Date:	07/29/2019
Reported:	08/08/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #2 (H902637-02)

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	08/06/2019	ND	0.021	103	0.0200	1.38	
Toluene*	<0.001	0.001	08/06/2019	ND	0.021	106	0.0200	1.40	
Ethylbenzene*	<0.001	0.001	08/06/2019	ND	0.020	99.5	0.0200	1.02	
Total Xylenes*	<0.003	0.003	08/06/2019	ND	0.060	99.8	0.0600	0.785	
Total BTEX	<0.006	0.006	08/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**1220**	4.00	08/02/2019	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*	**317**	50.0	08/05/2019	ND	22.2	111	20.0	4.55	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**2840**	5.00	08/06/2019	ND	531	101	527	0.840	

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	08/01/2019	Sampling Date:	07/29/2019
Reported:	08/08/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA COUNTY NM		

Sample ID: MONITOR WELL #3 (H902637-03)

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	08/06/2019	ND	0.021	103	0.0200	1.38	
Toluene*	<0.001	0.001	08/06/2019	ND	0.021	106	0.0200	1.40	
Ethylbenzene*	<0.001	0.001	08/06/2019	ND	0.020	99.5	0.0200	1.02	
Total Xylenes*	<0.003	0.003	08/06/2019	ND	0.060	99.8	0.0600	0.785	
Total BTEX	<0.006	0.006	08/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *81.3-128*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**750**	4.00	08/02/2019	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*	**235**	50.0	08/05/2019	ND	22.2	111	20.0	4.55	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1740**	5.00	08/06/2019	ND	531	101	527	0.840	

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Mike Snyder For 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: BD Junction P-26-2
Project Location: T21S R37E Sec26 P ~ Lea County New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310

H903637

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME	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	Anions (Cl, SO4, CO3, HCO3)	Cations (Ca, Mg, Na, K)	Sulfates (SO4)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
1	Monitor Well #1	G	3	X				2				1		7/29	11:20		X																X	X	X	
2	Monitor Well #2	G	3	X				2				1		7/29	10:15		X																X	X	X	
3	Monitor Well #3	G	3	X				2				1		7/29	8:45		X																X	X	X	

ANALYSIS REQUEST
(Circle or Specify Method No.)

Relinquished by: Rozanne Johnson	Date: 8/1/2019	Time: 13:15	Received by:	Date: 8-1-19	Time: 13:15
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 — Yes ✓ / No ; Intact — Yes ✓ / No

CHECKED BY: (Initials) T.O.

REMARKS:

Email Results: kjones@riceswd.com
rozanne11@windstream.net

CARDINAL Laboratories

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

November 06, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JUNCTION P-26-2

Enclosed are the results of analyses for samples received by the laboratory on 10/31/19 13:20.

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.

Cardinal Laboratories is accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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:	10/31/2019	Sampling Date:	10/28/2019
Reported:	11/06/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA CTY, NM		

Sample ID: MONITOR WELL #1 (H903720-01)

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	11/05/2019	ND	0.020	98.4	0.0200	0.744	
Toluene*	<0.001	0.001	11/05/2019	ND	0.017	84.5	0.0200	3.21	
Ethylbenzene*	<0.001	0.001	11/05/2019	ND	0.018	90.9	0.0200	3.11	
Total Xylenes*	<0.003	0.003	11/05/2019	ND	0.056	93.3	0.0600	1.61	
Total BTEX	<0.006	0.006	11/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.7 %* *74-98*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**760**	4.00	11/01/2019	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*	**224**	50.0	11/01/2019	ND	19.9	99.4	20.0	15.8	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1860**	5.00	11/05/2019	ND	495	93.9	527	1.68	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	10/31/2019	Sampling Date:	10/28/2019
Reported:	11/06/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA CTY, NM		

Sample ID: MONITOR WELL #2 (H903720-02)

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	11/06/2019	ND	0.020	98.4	0.0200	0.744	
Toluene*	<0.001	0.001	11/06/2019	ND	0.017	84.5	0.0200	3.21	
Ethylbenzene*	<0.001	0.001	11/06/2019	ND	0.018	90.9	0.0200	3.11	
Total Xylenes*	<0.003	0.003	11/06/2019	ND	0.056	93.3	0.0600	1.61	
Total BTEX	<0.006	0.006	11/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *74-98*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**1170**	4.00	11/01/2019	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*	**324**	50.0	11/01/2019	ND	19.9	99.4	20.0	15.8	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**2660**	5.00	11/05/2019	ND	495	93.9	527	1.68	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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:	10/31/2019	Sampling Date:	10/28/2019
Reported:	11/06/2019	Sampling Type:	Water
Project Name:	BD JUNCTION P-26-2	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T21S R37E SEC 26 P ~ LEA CTY, NM		

Sample ID: MONITOR WELL #3 (H903720-03)

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	11/05/2019	ND	0.020	98.4	0.0200	0.744	
Toluene*	<0.001	0.001	11/05/2019	ND	0.017	84.5	0.0200	3.21	
Ethylbenzene*	<0.001	0.001	11/05/2019	ND	0.018	90.9	0.0200	3.11	
Total Xylenes*	<0.003	0.003	11/05/2019	ND	0.056	93.3	0.0600	1.61	
Total BTEX	<0.006	0.006	11/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.8 %* *74-98*

Chloride, SM4500Cl-B mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**720**	4.00	11/01/2019	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*	**206**	50.0	11/01/2019	ND	19.9	99.4	20.0	15.8	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**1780**	5.00	11/05/2019	ND	495	93.9	527	1.68	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Celey D. Keene

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: BD Junction P-26-2

Project Location: T21S R37E Sec26 P ~ Lea County New Mexico

Sampler Signature: Rozanne Johnson (575)631-9310

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY) H903720	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2019)	TIME	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	Anions (Cl, SO4, CO3, HCO3)	Cations (Ca, Mg, Na, K)	Sulfates (SO4)	Total Dissolved Solids	Chlorides	Turn Around Time ~ 24 Hours
1	Monitor Well #1	G	3	X				2				1		10/28	13:15		X																X	X	X	
2	Monitor Well #2	G	3	X				2				1		10/28	11:40		X																X	X	X	
3	Monitor Well #3	G	3	X				2				1		10/28	9:20		X																X	X	X	

Relinquished by: Rozanne Johnson Date: 10/31/2019 Time: 13:20

Received by: Date: 10-31-19 Time: 13:20

Relinquished by: Date: Time:

Received By: (Laboratory Staff) Date: Time:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes / No; Intact: Yes / No

CHECKED BY: (Initials) T.O.

Phone Results: Yes / No

Fax Results: Yes / No Additional Fax Number:

REMARKS:

Email Results: kjones@riceswd.com
rozanne11@windstream.net