

RICE *Operating Company*

112 West Taylor • Hobbs, New Mexico 88240

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

April 1, 2020

Bradford Billings

New Mexico Oil Conservation Division

1220 So. St. Francis Drive

Santa Fe, New Mexico 87505

**RE: 2019 Annual Groundwater Report
Rice Operating Company – BD SWD System
BD K-4 Release (1R0459): Unit K, Section 4, T22S, R37E**

Mr. Billings:

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

The site is located approximately 1 mile southwest of Eunice, New Mexico at UL/K, Sec. 4, T22S, R37E as shown on the Geographical Location Map. Groundwater sampling at the site indicated the depth to groundwater is approximately 83 ft below ground surface (bgs).

ROC completed the Corrective Action Plan (CAP) dated April 23, 2007, which was granted verbal approval by the New Mexico Oil Conservation Division (NMOCD) on December 16, 2009. The CAP was implemented in February 2010. A site Termination Request was submitted to the NMOCD on September 23, 2010 and denied by the NMOCD on October 13, 2010, requiring ROC to continue removing chloride impacted groundwater from MW-1 and to continue monitoring MW-1, MW-2 and MW-3 on a quarterly basis. Based on the completed CAP work, NMOCD granted 'Soil Closure' on October 11, 2012.

All wells were sampled quarterly per NMOCD guidelines. The attached tables summarize the analytical results from groundwater samples collected from the monitor wells at the site.

During 2019, approximately 3,520 gallons of chloride impacted groundwater were removed from MW-1 and quarterly sampling of the three monitor wells was completed. Since the removal of liquids that began on September 3, 2009, a total of 40,179.4 gallons of chloride impacted groundwater have been removed at the site. Results indicate the site chloride and TDS concentrations have overall decreased in MW-1 and have remained below 250 mg/L since 2018. Chloride concentrations remain stable and below 250 mg/L in MW-2 and MW-3. BTEX concentration have remained below detectable limits since the wells were installed. This indicates

the removal of chloride impacted groundwater from MW-1 is decreasing the chloride plume. Removed groundwater was utilized for a beneficial use.

Given that BTEX concentrations have been below detectable limits since installation, ROC requests to suspend BTEX sampling in all three wells (MW-1, MW-2 and MW-3). Further, due to the current climate, and in the interest of safety, ROC proposes to reduce groundwater monitoring from quarterly to semi-annually beginning this year. In addition, ROC is proposing to suspend groundwater recovery for this year. These proposals are only temporary and regularly scheduled groundwater monitoring and recovery will commence as soon as possible.

Attached is the Appendix, which contains:

1. A Geographical Location Map.
2. A map showing well locations.
3. A table presenting all laboratory results and depth to groundwater for each well at the site, and a graph showing recent laboratory results.
4. The laboratory analytical results for 2019.

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

Sincerely,

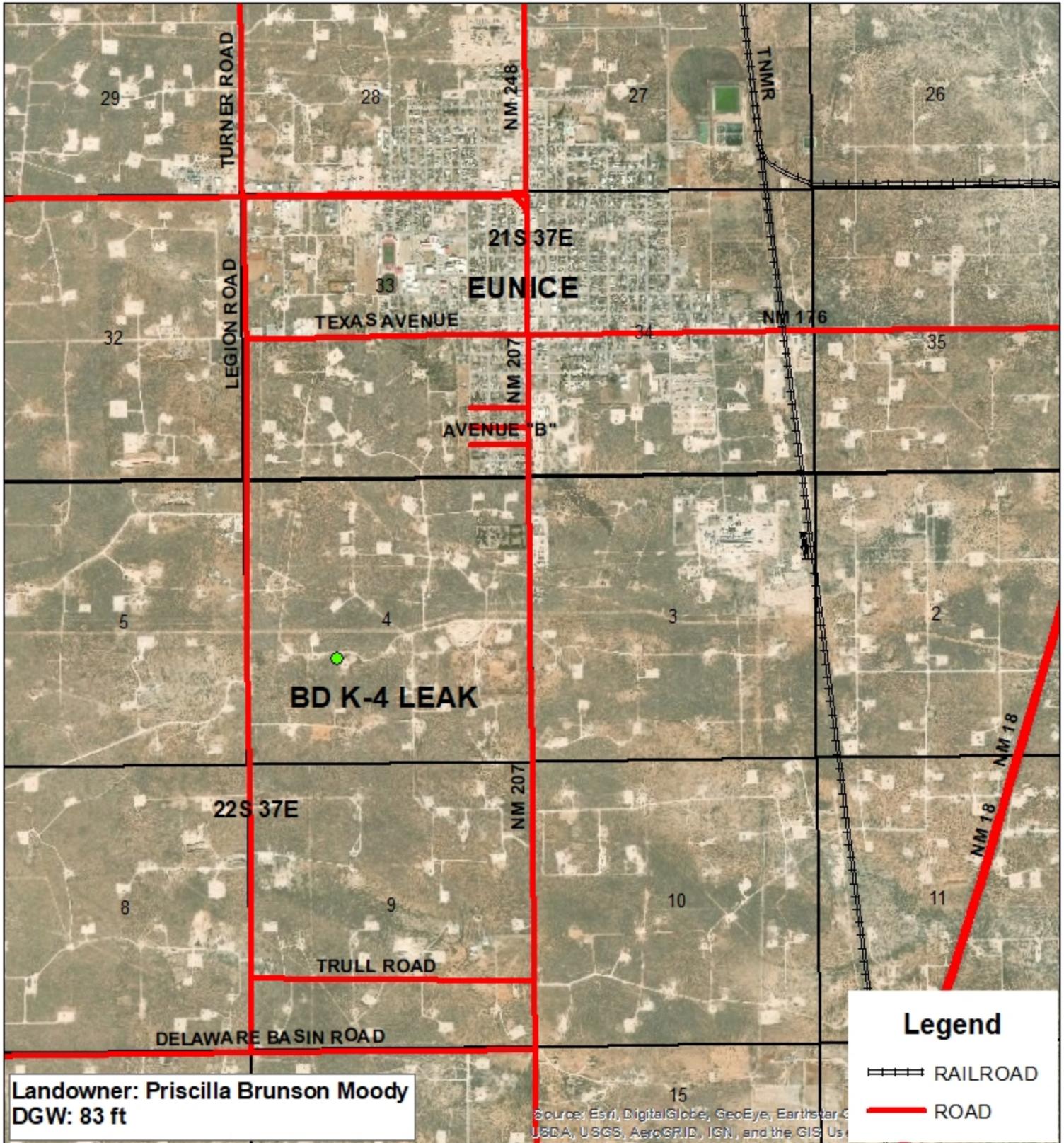


Katie Davis
Environmental Manager
RICE Operating Company (ROC)

Cc – Edward J. Hansen (ROC)

appendix

Geographic Location



Landowner: Priscilla Brunson Moody
DGW: 83 ft

Legend

- RAILROAD
- ROAD



BD
K-4 LEAK
1R0459

UL/K SECTION 4
T-22-S R-37-E
LEA COUNTY, NM

GPS: 32.419088 -103.171969
NAD83 STATE PLANE PROJ
NM EAST ZONE

0 0.25 0.5
Miles

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

Site Map



Legend

- ACTIVE MW
- ROC ACTIVE LINE
- ROC ISOLATED LINE PROJECTED
- ROC ISOLATED LINE LOCATED
- ACTIVE CONCRETE JCT BOX
- REMOVED PLASTIC JCT BOX
- NON ROC BATTERY

Landowner: Priscilla Brunson Moody
 DGW: 83 ft



BD
K-4 LEAK
 1R0459

UL/K SECTION 4
 T-22-S R-37-E
 LEA COUNTY, NM

GPS: 32.419088 -103.171969
 NAD83 STATE PLANE PROJ.
 NM EAST ZONE

0 10 20
 Feet

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

ROC - BD K-4 (1R-459)

Unit Letter K, Section 4, T22S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	85.02	93.63	1.4	5	11/13/2006	1040	2120	<0.001	<0.001	<0.001	<0.001	152	Silt to clear No odor
1	84.99	93.62	1.4	6	3/8/2007	916	2100	<0.001	<0.001	<0.001	<0.001	148	Silt to clear No odor
1	84.96	93.62	1.4	6	4/23/2007	917	1950	<0.001	<0.001	<0.001	<0.001	339	Silt to clear No odor
1	XXX	XXX	XXX	XXX	8/7/2007	XXX	XXX	XXX	XXX	XXX	XXX	XXX	converted from a 2 in well to a 4 in well
1	86.06	97.7	7.6	6	9/14/2007	760	2,028	<0.001	<0.001	<0.001	<0.003	159	Silt to clear No odor
1	86.06	97.7	7.6	20	10/31/2007	736	1,770	<0.002	<0.002	<0.002	<0.006	124	Silt to clear No odor
1	85.93	98.6	8.2	30	2/15/2008	760	1,880	<0.002	<0.002	<0.002	<0.006	157	Clear No odor
1	85.73	98.6	8.4	30	5/5/2008	720	1,880	<0.002	<0.002	<0.002	<0.006	195	Clear No odor
1	85.81	98.6	8.3	30	8/11/2008	620	1,590	<0.001	<0.001	<0.001	<0.003	106	Clear No odor
1	85.65	98.6	8.4	30	11/13/2008	570	1,470	<0.001	<0.001	<0.001	<0.003	148	Clear No odor
1	85.64	98.4	8.3	30	1/21/2009	630	1,560	<0.001	<0.001	<0.001	<0.003	143	Clear No odor
1	85.61	98.4	8.3	30	4/22/2009	600	1,680	<0.001	<0.001	<0.001	<0.003	123	Clear No odor
1	85.48	98.4	8.4	30	7/20/2009	520	1,380	<0.001	<0.001	<0.001	<0.003	113	Clear No odor
1	85.49	98.4	8.4	30	10/13/2009	700	1,700	<0.001	<0.001	<0.001	<0.003	131	Clear No odor
1	85.32	98.41	8.5	30	1/19/2010	780	1,860	<0.001	<0.001	<0.001	<0.003	173	Clear No odor
1	85.31	98.41	8.5	30	4/15/2010	680	1,610	<0.001	<0.001	<0.001	<0.003	155	Clear No odor
1	85.23	98.41	8.6	30	7/20/2010	610	1,550	<0.001	<0.001	<0.001	<0.003	143	Clear No odor
1	85.15	98.41	8.6	30	10/15/2010	600	1,460	<0.001	<0.001	<0.001	<0.003	125	Clear No odor
1	85.14	98.4	8.6	30	1/26/2011	680	1,580	<0.001	<0.001	<0.001	<0.003	164	Clear No odor
1	84.97	98.4	8.7	30	4/22/2011	740	1,620	<0.001	<0.001	<0.001	<0.003	144	Clear No odor
1	84.96	98.4	8.7	30	7/29/2011	640	1,530	<0.001	<0.001	<0.001	<0.001	108	Clear No odor
1	85.07	98.4	8.7	30	10/24/2011	650	1,510	<0.001	<0.001	<0.001	<0.003	122	Clear No odor
1	84.88	98.4	8.8	30	1/31/2012	660	1,500	<0.001	<0.001	<0.001	<0.003	140	Clear No odor
1	84.82	98.4	8.8	125	5/3/2012	670	1,440	<0.001	<0.001	<0.001	<0.003	143	Clear No odor
1	XXX	98.4	0	Running	7/25/2012	730	1,670	<0.001	<0.001	<0.001	<0.003	165	Clear No odor
1	XXX	98.4	0	Running	10/25/2012	870	1,960	<0.001	<0.001	<0.001	<0.003	182	Clear No odor
1	84.58	98.4	9	80	3/26/2013	520	1,240	<0.001	<0.001	<0.001	<0.003	129	Clear No odor
1	85.65	98.4	8.3	80	4/24/2013	524	1,290	<0.001	<0.001	<0.001	<0.003	143	Clear No odor

ROC - BD K-4 (1R-459)

Unit Letter K, Section 4, T22S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	84.61	98.4	9	80	7/30/2013	500	1,300	<0.001	<0.001	<0.001	<0.003	129	Clear No odor
1	84.5	98.4	9	80	10/23/2013	500	1,320	<0.001	<0.001	<0.001	<0.003	131	Clear No odor
1	84.39	98.4	9.1	80	2/7/2014	470	1,160	<0.001	<0.001	<0.001	<0.003	122	Clear No odor
1	84.53	98.4	9	80	4/10/2014	510	1,210	<0.001	<0.001	<0.001	<0.003	131	Clear No odor
1	84.36	98.4	9.1	80	7/28/2014	424	1,170	<0.001	<0.001	<0.001	<0.003	116	Clear No odor
1	84.34	98.4	9.1	100	10/30/2014	770	1,900	<0.001	<0.001	<0.001	<0.003	136	Clear No odor
1	84.28	98.4	9.2	100	2/9/2015	780	1,780	<0.001	<0.001	<0.001	<0.003	131	Clear No odor
1	84.34	98.4	9.1	100	4/23/2015	529	1,450	<0.001	<0.001	<0.001	<0.003	95.7	Clear No odor
1	84.24	98.4	9.2	100	7/31/2015	220	788	<0.001	<0.001	<0.001	<0.003	80	Clear No odor
1	84.21	98.4	9.22	100	10/26/2015	570	1,690	<0.001	<0.001	<0.001	<0.003	119	Clear No odor
1	84.05	98.4	9.3	100	1/29/2016	750	1,680	<0.001	<0.001	<0.001	<0.003	203	Clear No odor
1	84.06	98.4	9.3	100	4/22/2016	660	1,490	<0.001	<0.001	<0.001	<0.003	170	Clear No odor
1	84.07	98.4	9.3	100	7/22/2016	560	1,590	<0.001	<0.001	<0.001	<0.003	130	Clear No odor
1	83.98	98.4	9.4	100	10/26/2016	690	1,720	<0.001	<0.001	<0.001	<0.003	99	Clear No odor
1	84.04	98.4	9.3	100	2/6/2017	630	1,370	<0.001	<0.001	<0.001	<0.003	192	Clear No odor
1	83.96	98.4	9.4	100	4/12/2017	500	1,400	<0.001	<0.001	<0.001	<0.003	228	Clear No odor
1	83.9	98.4	9.4	100	7/27/2017	510	1,510	<0.001	<0.001	<0.001	<0.003	291	Clear No odor
1	83.93	98.4	9.4	100	10/23/2017	470	1,360	<0.001	<0.001	<0.001	<0.003	212	Clear No odor
1	83.72	98.4	9.5	100	1/17/2018	332	1,050	<0.001	<0.001	<0.001	<0.003	140	Clear No odor
1	83.76	98.4	9.5	100	4/27/2018	272	846	<0.001	<0.001	<0.001	<0.003	136	Clear No odor
1	83.64	98.4	9.6	100	8/3/2018	200	780	<0.001	<0.001	<0.001	<0.003	113	Clear No odor
1	83.72	98.4	9.5	100	1/17/2018	332	1,050	<0.001	<0.001	<0.001	<0.003	140	Clear No odor
1	83.76	98.4	9.5	100	4/27/2018	272	846	<0.001	<0.001	<0.001	<0.003	136	Clear No odor
1	83.64	98.4	9.6	100	8/3/2018	200	780	<0.001	<0.001	<0.001	<0.003	113	Clear No odor
1	83.65	98.4	9.6	100	11/2/2018	156	562	<0.001	<0.001	<0.001	<0.003	113	Clear No odor
1	83.6	98.4	9.6	100	2/5/2019	156	620	<0.001	<0.001	<0.001	<0.003	123	Clear No odor
1	83.12	98.4	9.6	100	4/23/2019	156	562	<0.001	<0.001	<0.001	<0.003	119	Clear No odor

ROC - BD K-4 (1R-459)

Unit Letter K, Section 4, T22S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
1	83.54	98.4	9.6	100	7/25/2019	156	663	<0.001	<0.001	<0.001	<0.003	131	Clear No odor
1	83.49	98.4	9.6	100	10/25/2019	140	647	<0.001	<0.001	<0.001	<0.003	114	Clear No odor

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	83.35	94.1	1.7	7	11/13/2006	77	542	<0.001	<0.001	<0.001	<0.001	85	Silt to clear No odor
2	83.28	94.08	1.7	7	3/8/2007	75.3	574	<0.001	<0.001	<0.001	<0.001	80.8	Silt to clear No odor
2	83.25	94.08	1.7	7	4/23/2007	83.5	564	<0.001	<0.001	<0.001	<0.001	83	Silt to clear No odor
2	83.12	94.08	1.8	7	9/14/2007	110	588	<0.001	<0.001	<0.001	<0.003	130	Silt to clear No odor
2	83.11	94.08	1.8	6	10/31/2007	84	596	<0.002	<0.002	<0.002	<0.006	82.7	Silt to clear No odor
2	82.97	94.05	1.8	6	2/15/2008	92	574	<0.002	<0.002	<0.002	<0.006	86.6	Silt to clear No odor
2	82.81	94.05	1.8	6	5/5/2008	100	570	<0.002	<0.002	<0.002	<0.006	117	Silt to clear No odor
2	82.86	94.05	1.8	6	8/11/2008	108	596	<0.001	<0.001	<0.001	<0.003	94	Silt to clear No odor
2	82.75	94.05	1.8	6	11/13/2008	144	578	<0.001	<0.001	<0.001	<0.003	93.7	Silt to clear No odor
2	82.77	93.98	1.8	6	1/21/2009	104	598	<0.001	<0.001	<0.001	<0.003	95.4	Silt to clear No odor
2	82.69	93.98	1.8	6	4/22/2009	108	621	<0.001	<0.001	<0.001	<0.003	89.8	Silt to clear No odor
2	82.61	93.98	1.8	6	7/20/2009	144	628	<0.001	<0.001	<0.001	<0.003	95.4	Silt to clear No odor
2	82.58	93.98	1.8	6	10/13/2009	108	641	<0.001	<0.001	<0.001	<0.003	78.9	Silt to clear No odor
2	82.4	93.67	1.8	6	1/19/2010	116	605	<0.001	<0.001	<0.001	<0.003	105	Silt to clear No odor
2	82.37	93.67	1.8	6	4/15/2010	112	625	<0.001	<0.001	<0.001	<0.003	91.2	Silt to clear No odor
2	82.32	93.67	1.8	6	7/20/2010	116	596	<0.001	<0.001	<0.001	<0.003	74.2	Silt to clear No odor
2	82.23	93.67	1.8	6	10/15/2010	116	609	<0.001	<0.001	<0.001	<0.003	93.9	Silt to clear No odor
2	82.18	93.7	1.8	6	1/26/2011	112	549	<0.001	<0.001	<0.001	<0.003	91.2	Silt to clear No odor
2	82.08	93.7	1.9	6	4/22/2011	112	575	<0.001	<0.001	<0.001	<0.003	89.7	Silt to clear No odor
2	82.05	93.7	1.9	6	7/29/2011	112	601	<0.001	<0.001	<0.001	<0.003	75.5	Silt to clear No odor
2	82.03	93.7	1.9	6	10/24/2011	116	612	<0.001	<0.001	<0.001	<0.003	81.4	Silt to clear No odor
2	81.94	93.7	1.9	6	1/31/2012	104	603	<0.001	<0.001	<0.001	<0.003	94.9	Silt to clear No odor
2	81.93	93.7	1.9	6	5/3/2012	112	607	<0.001	<0.001	<0.001	<0.003	96	Silt to clear No odor

ROC - BD K-4 (1R-459)

Unit Letter K, Section 4, T22S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	81.88	93.7	1.9	6	7/25/2012	112	592	<0.001	<0.001	<0.001	<0.003	82	Silt to clear No odor
2	81.77	93.7	1.9	6	10/24/2012	96	564	<0.001	<0.001	<0.001	<0.003	79	Silt to clear No odor
2	81.72	93.7	1.9	6	3/26/2013	108	583	<0.001	<0.001	<0.001	<0.003	91	Silt to clear No odor
2	81.73	93.7	1.9	6	4/24/2013	104	560	<0.001	<0.001	<0.001	<0.003	101	Silt to clear No odor
2	81.69	93.7	1.9	6	7/30/2013	104	583	<0.001	<0.001	<0.001	<0.003	122	Silt to clear No odor
2	81.59	93.7	1.9	6	10/23/2013	104	551	<0.001	<0.001	<0.001	<0.003	90	Silt to clear No odor
2	81.48	93.7	2	6	2/7/2014	120	581	<0.001	<0.001	<0.001	<0.003	101	Silt to clear No odor
2	81.64	93.7	1.9	6	4/10/2014	104	568	<0.001	<0.001	<0.001	<0.003	96.6	Silt to clear No odor
2	81.46	93.7	2	6	7/28/2014	112	588	<0.001	<0.001	<0.001	<0.003	85.1	Silt to clear No odor
2	81.52	93.7	1.9	6	10/30/2014	100	504	<0.001	<0.001	<0.001	<0.003	71	Silt to clear No odor
2	81.44	93.7	2	6	2/9/2015	108	602	<0.001	<0.001	<0.001	<0.003	83	Silt to clear No odor
2	81.52	93.7	1.9	6	4/23/2015	92	628	<0.001	<0.001	<0.001	<0.003	86	Silt to clear No odor
2	81.33	93.7	1.98	6	7/31/2015	128	694	<0.001	<0.001	<0.001	<0.003	84	Silt to clear No odor
2	81.31	93.7	1.98	6	10/26/2015	120	622	<0.001	<0.001	<0.001	<0.003	65	Silt to clear No odor
2	81.17	93.7	2	6	1/29/2016	60	620	<0.001	<0.001	<0.001	<0.003	140	Silt to clear No odor
2	81.13	93.7	2	6	4/22/2016	112	582	<0.001	<0.001	<0.001	<0.003	101	Silt to clear No odor
2	81.15	93.7	2	6	7/22/2016	112	646	<0.001	<0.001	<0.001	<0.003	79	Silt to clear No odor
2	81.08	93.7	2	6	10/26/2016	128	592	<0.001	<0.001	<0.001	<0.003	102	Silt to clear No odor
2	81.12	93.7	2	6	2/6/2017	128	632	<0.001	<0.001	<0.001	<0.003	102	Silt to clear No odor
2	81.04	93.7	2	6	4/12/2017	136	670	<0.001	<0.001	<0.001	<0.003	95	Silt to clear No odor
2	80.98	93.7	2	6	7/27/2017	132	646	<0.001	<0.001	<0.001	<0.003	89	Silt to clear No odor
2	81	93.7	2	6	10/23/2017	148	676	<0.001	<0.001	<0.001	<0.003	107	Silt to clear No odor
2	80.85	93.7	2.1	6	1/17/2018	140	652	<0.001	<0.001	<0.001	<0.003	109	Silt to clear No odor
2	80.88	93.7	2.1	6	4/27/2018	140	614	<0.001	<0.001	<0.001	<0.003	116	Silt to clear No odor
2	80.78	93.7	2.1	6	8/3/2018	148	630	<0.001	<0.001	<0.001	<0.003	91.5	Silt to clear No odor
2	80.72	93.7	2.1	6	11/2/2018	140	586	<0.001	<0.001	<0.001	<0.003	103	Silt to clear No odor
2	80.68	93.7	2.1	6	2/5/2019	128	646	<0.001	<0.001	<0.001	<0.003	122	Silt to clear No odor
2	80.69	93.7	2.1	6	4/23/2019	112	562	<0.001	<0.001	<0.001	<0.003	101	Silt to clear No odor

ROC - BD K-4 (1R-459)

Unit Letter K, Section 4, T22S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
2	80.64	93.7	2.1	6	7/25/2019	108	596	<0.001	<0.001	<0.001	<0.003	115	Silt to clear No odor
2	80.6	93.7	2.1	6	10/25/2019	120	603	<0.001	<0.001	<0.001	<0.003	93	Silt to clear No odor

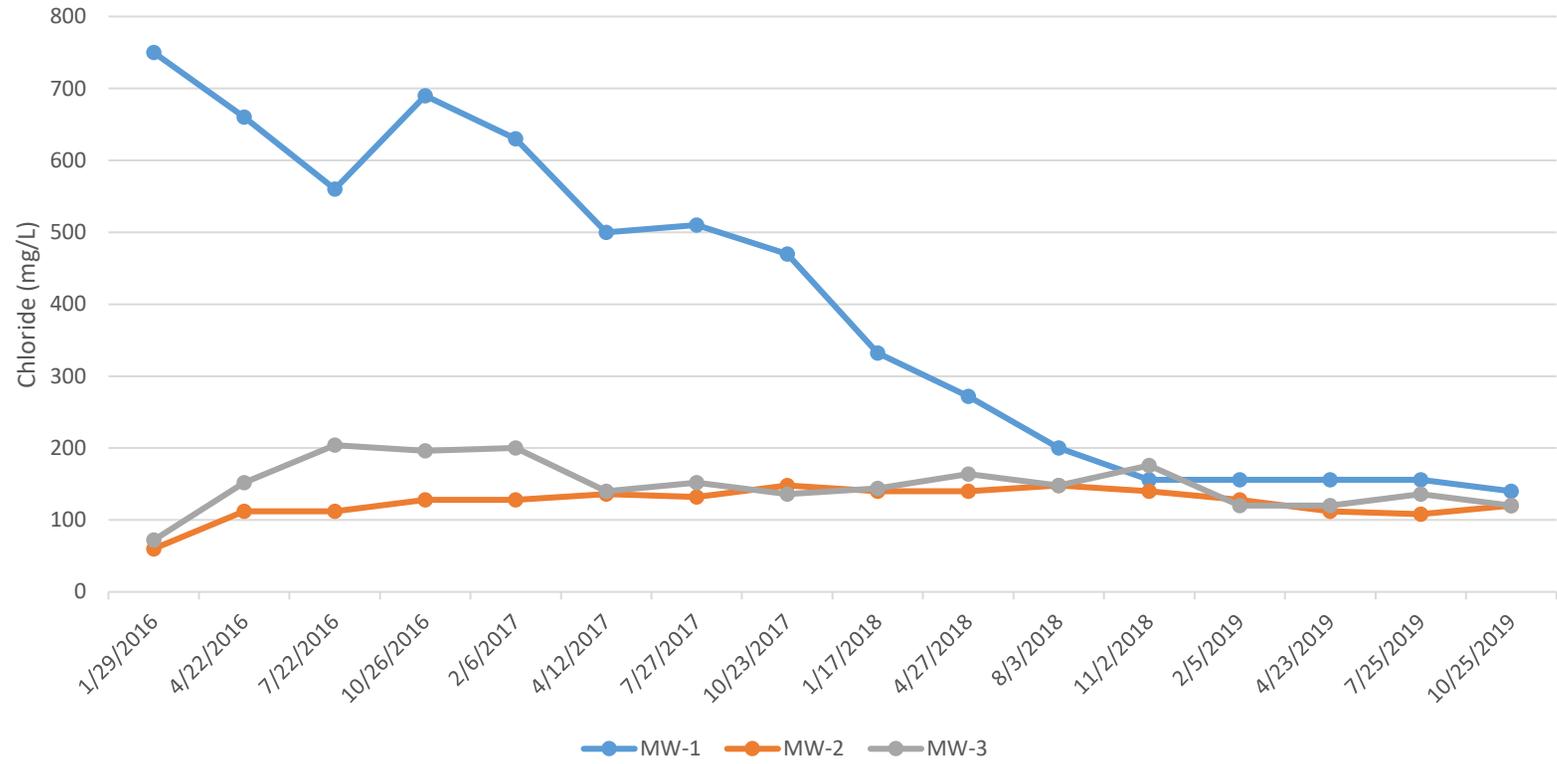
MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	86.45	94.6	1.3	5	11/13/2006	148	622	<0.001	<0.001	<0.001	<0.001	97.6	Silt to clear No odor
3	86.41	94.5	1.3	5	3/8/2007	199	678	<0.001	<0.001	<0.001	<0.001	103	Silt to clear No odor
3	86.35	94.5	1.3	6	4/23/2007	145	674	<0.001	<0.001	<0.001	<0.001	92.1	Silt to clear No odor
3	86.23	94.5	1.3	6	9/14/2007	170	710	<0.001	<0.001	<0.001	<0.003	151	Silt to clear No odor
3	86.19	94.5	1.3	6	10/31/2007	156	689	<0.002	<0.002	<0.002	<0.006	106	Silt to clear No odor
3	86.09	94.35	1.3	6	2/15/2008	160	668	<0.002	<0.002	<0.002	<0.006	110	Silt to clear No odor
3	85.89	94.35	1.4	6	5/5/2008	160	710	<0.002	<0.002	<0.002	<0.006	166	Silt to clear No odor
3	85.94	94.35	1.3	6	8/11/2008	172	691	<0.001	<0.001	<0.001	<0.003	117	Silt to clear No odor
3	85.84	94.35	1.4	6	11/13/2008	168	711	<0.001	<0.001	<0.001	<0.003	124	Silt to clear No odor
3	85.84	94.2	1.3	6	1/21/2009	164	713	<0.001	<0.001	<0.001	<0.003	116	Silt to clear No odor
3	85.76	94.2	1.4	6	4/22/2009	168	730	<0.001	<0.001	<0.001	<0.003	108	Silt to clear No odor
3	85.64	94.2	1.4	6	7/20/2009	172	718	<0.001	<0.001	<0.001	<0.003	107	Silt to clear No odor
3	85.63	94.2	1.4	6	10/13/2009	168	688	<0.001	<0.001	<0.001	<0.003	94.1	Silt to clear No odor
3	85.52	94.58	1.4	6	1/19/2010	176	729	<0.001	<0.001	<0.001	<0.003	108	Silt to clear No odor
3	85.46	94.58	1.5	6	4/15/2010	180	708	<0.001	<0.001	<0.001	<0.003	108	Silt to clear No odor
3	85.38	94.58	1.5	6	7/20/2010	192	706	<0.001	<0.001	<0.001	<0.003	89.5	Silt to clear No odor
3	85.33	94.58	1.5	6	10/15/2010	188	675	<0.001	<0.001	<0.001	<0.003	87.7	Silt to clear No odor
3	85.29	94.61	1.5	6	1/26/2010	188	696	<0.001	<0.001	<0.001	<0.003	114	Silt to clear No odor
3	85.15	94.61	1.5	6	4/22/2011	208	719	<0.001	<0.001	<0.001	<0.003	111	Silt to clear No odor
3	85.11	94.61	1.5	6	7/29/2011	224	743	<0.001	<0.001	<0.001	<0.003	74.7	Silt to clear No odor
3	85.07	94.61	1.5	6	10/24/2011	252	765	<0.001	<0.001	<0.001	<0.003	101	Silt to clear No odor
3	85.04	94.61	1.5	6	1/31/2012	196	728	<0.001	<0.001	<0.001	<0.003	101	Silt to clear No odor
3	84.64	94.61	1.6	6	5/3/2012	272	824	<0.001	<0.001	<0.001	<0.003	104	Silt to clear No odor

ROC - BD K-4 (1R-459)

Unit Letter K, Section 4, T22S, R37E

MW	Depth to Water	Total Depth	Well Volume	Volume Purged	Sample Date	Cl	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate	Comments
3	84.9	94.61	1.6	6	7/25/2012	184	723	<0.001	<0.001	<0.001	<0.003	109	Silt to clear No odor
3	84.82	94.61	1.6	6	10/24/2012	124	617	<0.001	<0.001	<0.001	<0.003	96	Silt to clear No odor
3	84.81	94.61	1.6	6	3/26/2013	220	751	<0.001	<0.001	<0.001	<0.003	109	Silt to clear No odor
3	84.78	94.61	1.6	6	4/24/2013	208	741	<0.001	<0.001	<0.001	<0.003	128	Silt to clear No odor
3	84.77	94.61	1.6	6	7/30/2013	188	725	<0.001	<0.001	<0.001	<0.003	167	Silt to clear No odor
3	84.63	94.61	1.6	6	10/23/2013	228	733	<0.001	<0.001	<0.001	<0.003	116	Silt to clear No odor
3	84.54	94.61	1.6	6	2/7/2014	220	748	<0.001	<0.001	<0.001	<0.003	106	Silt to clear No odor
3	84.66	94.61	1.6	6	4/10/2014	152	622	<0.001	<0.001	<0.001	<0.003	121	Silt to clear No odor
3	84.48	94.61	1.6	6	7/28/2014	188	636	<0.001	<0.001	<0.001	<0.003	89.8	Silt to clear No odor
3	84.34	94.61	1.6	6	10/30/2014	144	656	<0.001	<0.001	<0.001	<0.003	92	Silt to clear No odor
3	84.47	94.61	1.6	6	2/9/2015	120	646	<0.001	<0.001	<0.001	<0.003	109	Silt to clear No odor
3	84.54	94.61	1.6	6	4/23/2015	268	814	<0.001	<0.001	<0.001	<0.003	79	Silt to clear No odor
3	84.35	94.61	1.64	6	7/31/2015	156	608	<0.001	<0.001	<0.001	<0.003	76	Silt to clear No odor
3	84.34	94.61	1.64	6	10/26/2015	120	892	<0.001	<0.001	<0.001	<0.003	240	Silt to clear No odor
3	84.21	94.61	1.7	6	1/29/2016	72	590	<0.001	<0.001	<0.001	<0.003	150	Silt to clear No odor
3	84.19	94.61	1.7	6	4/22/2016	152	696	<0.001	<0.001	<0.001	<0.003	112	Silt to clear No odor
3	84.18	94.61	1.7	6	7/22/2016	204	784	<0.001	<0.001	<0.001	<0.003	109	Silt to clear No odor
3	84.14	94.61	1.7	6	10/26/2016	196	740	<0.001	<0.001	<0.001	<0.003	115	Silt to clear No odor
3	84.18	94.61	1.7	6	2/6/2017	200	852	<0.001	<0.001	<0.001	<0.003	117	Silt to clear No odor
3	84.11	94.61	1.7	6	4/12/2017	140	694	<0.001	<0.001	<0.001	<0.003	96	Silt to clear No odor
3	84.04	94.61	1.7	6	7/27/2017	152	700	<0.001	<0.001	<0.001	<0.003	95	Silt to clear No odor
3	84.07	94.61	1.7	6	10/23/2017	136	650	<0.001	<0.001	<0.001	<0.003	113	Silt to clear No odor
3	83.91	94.61	1.7	6	1/17/2018	144	652	<0.001	<0.001	<0.001	<0.003	107	Silt to clear No odor
3	83.93	94.61	1.7	6	4/27/2018	164	726	<0.001	<0.001	<0.001	<0.003	119	Silt to clear No odor
3	83.83	94.61	1.7	6	8/3/2018	148	630	<0.001	<0.001	<0.001	<0.003	103	Silt to clear No odor
3	83.76	94.61	1.7	6	11/2/2018	176	450	<0.001	<0.001	<0.001	<0.003	106	Silt to clear No odor
3	83.72	94.61	1.7	6	2/5/2019	120	586	<0.001	<0.001	<0.001	<0.003	114	Silt to clear No odor
3	83.74	94.61	1.7	6	4/23/2019	120	580	<0.001	<0.001	<0.001	<0.003	98	Silt to clear No odor
3	83.69	94.61	1.7	6	7/25/2019	136	634	<0.001	<0.001	<0.001	<0.003	124	Silt to clear No odor
3	83.65	94.61	1.7	6	10/25/2019	120	564	<0.001	<0.001	<0.001	<0.003	94	Silt to clear No odor

BD K-4 (1R-459)



February 12, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD K-4 RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 02/07/19 15:55.

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

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received:	02/07/2019	Sampling Date:	02/05/2019
Reported:	02/12/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #1 (H900490-01)

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	02/10/2019	ND	0.023	114	0.0200	2.40	
Toluene*	<0.001	0.001	02/10/2019	ND	0.022	108	0.0200	1.01	
Ethylbenzene*	<0.001	0.001	02/10/2019	ND	0.022	108	0.0200	0.235	
Total Xylenes*	<0.003	0.003	02/10/2019	ND	0.067	112	0.0600	0.952	
Total BTEX	<0.006	0.006	02/10/2019	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*	156	4.00	02/11/2019	ND	104	104	100	3.77	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	123	25.0	02/12/2019	ND	22.9	115	20.0	6.39	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	620	5.00	02/12/2019	ND	524	99.4	527	2.58	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	02/07/2019	Sampling Date:	02/05/2019
Reported:	02/12/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #2 (H900490-02)

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	02/10/2019	ND	0.023	114	0.0200	2.40		
Toluene*	<0.001	0.001	02/10/2019	ND	0.022	108	0.0200	1.01		
Ethylbenzene*	<0.001	0.001	02/10/2019	ND	0.022	108	0.0200	0.235		
Total Xylenes*	<0.003	0.003	02/10/2019	ND	0.067	112	0.0600	0.952		
Total BTEX	<0.006	0.006	02/10/2019	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*	128	4.00	02/11/2019	ND	104	104	100	3.77		

Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	122	25.0	02/12/2019	ND	22.9	115	20.0	6.39		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	646	5.00	02/12/2019	ND	524	99.4	527	2.58		

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	02/07/2019	Sampling Date:	02/05/2019
Reported:	02/12/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #3 (H900490-03)

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	02/10/2019	ND	0.023	114	0.0200	2.40		
Toluene*	<0.001	0.001	02/10/2019	ND	0.022	108	0.0200	1.01		
Ethylbenzene*	<0.001	0.001	02/10/2019	ND	0.022	108	0.0200	0.235		
Total Xylenes*	<0.003	0.003	02/10/2019	ND	0.067	112	0.0600	0.952		
Total BTEX	<0.006	0.006	02/10/2019	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*	120	4.00	02/11/2019	ND	104	104	100	3.77		

Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	114	25.0	02/12/2019	ND	22.9	115	20.0	6.39		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	586	5.00	02/12/2019	ND	524	99.4	527	2.58		

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



May 02, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD K-4 RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 04/25/19 14:51.

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

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received:	04/25/2019	Sampling Date:	04/23/2019
Reported:	05/02/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #1 (H901493-01)

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	04/27/2019	ND	0.021	104	0.0200	1.04	
Toluene*	<0.001	0.001	04/27/2019	ND	0.021	107	0.0200	0.520	
Ethylbenzene*	<0.001	0.001	04/27/2019	ND	0.020	102	0.0200	0.0147	
Total Xylenes*	<0.003	0.003	04/27/2019	ND	0.062	103	0.0600	1.67	
Total BTEX	<0.006	0.006	04/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 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*	156	4.00	04/30/2019	ND	108	108	100	3.77	

Sulfate 375.4		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate*	119	25.0	05/01/2019	ND	20.5	103	20.0	12.7	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	562	5.00	05/02/2019	ND	562	107	527	15.7	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	04/25/2019	Sampling Date:	04/23/2019
Reported:	05/02/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #2 (H901493-02)

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	04/27/2019	ND	0.021	104	0.0200	1.04		
Toluene*	<0.001	0.001	04/27/2019	ND	0.021	107	0.0200	0.520		
Ethylbenzene*	<0.001	0.001	04/27/2019	ND	0.020	102	0.0200	0.0147		
Total Xylenes*	<0.003	0.003	04/27/2019	ND	0.062	103	0.0600	1.67		
Total BTEX	<0.006	0.006	04/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 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*	112	4.00	04/30/2019	ND	108	108	100	3.77		

Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	101	25.0	05/01/2019	ND	20.5	103	20.0	12.7		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	562	5.00	05/02/2019	ND	562	107	527	15.7		

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	04/25/2019	Sampling Date:	04/23/2019
Reported:	05/02/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Jodi Henson
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #3 (H901493-03)

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	04/27/2019	ND	0.021	104	0.0200	1.04		
Toluene*	<0.001	0.001	04/27/2019	ND	0.021	107	0.0200	0.520		
Ethylbenzene*	<0.001	0.001	04/27/2019	ND	0.020	102	0.0200	0.0147		
Total Xylenes*	<0.003	0.003	04/27/2019	ND	0.062	103	0.0600	1.67		
Total BTEX	<0.006	0.006	04/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.6 % 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*	120	4.00	04/30/2019	ND	108	108	100	3.77		

Sulfate 375.4		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Sulfate*	98.3	25.0	05/01/2019	ND	20.5	103	20.0	12.7		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	580	5.00	05/02/2019	ND	562	107	527	15.7		

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



August 02, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD K-4 RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 07/29/19 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 accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received:	07/29/2019	Sampling Date:	07/25/2019
Reported:	08/02/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #1 (H902583-01)

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	07/31/2019	ND	0.020	101	0.0200	1.45	
Toluene*	<0.001	0.001	07/31/2019	ND	0.021	103	0.0200	1.22	
Ethylbenzene*	<0.001	0.001	07/31/2019	ND	0.020	97.7	0.0200	1.68	
Total Xylenes*	<0.003	0.003	07/31/2019	ND	0.060	99.5	0.0600	2.63	
Total BTEX	<0.006	0.006	07/31/2019	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*	156	4.00	07/30/2019	ND	104	104	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*	131	25.0	07/31/2019	ND	18.7	93.6	20.0	0.107	

TDS 160.1		mg/L		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	663	5.00	08/02/2019	ND	533	101	527	2.69	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	07/29/2019	Sampling Date:	07/25/2019
Reported:	08/02/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #2 (H902583-02)

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	07/31/2019	ND	0.020	101	0.0200	1.45		
Toluene*	<0.001	0.001	07/31/2019	ND	0.021	103	0.0200	1.22		
Ethylbenzene*	<0.001	0.001	07/31/2019	ND	0.020	97.7	0.0200	1.68		
Total Xylenes*	<0.003	0.003	07/31/2019	ND	0.060	99.5	0.0600	2.63		
Total BTEX	<0.006	0.006	07/31/2019	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*	108	4.00	07/30/2019	ND	104	104	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*	115	25.0	07/31/2019	ND	18.7	93.6	20.0	0.107		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	596	5.00	08/02/2019	ND	533	101	527	2.69		

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	07/29/2019	Sampling Date:	07/25/2019
Reported:	08/02/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #3 (H902583-03)

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	07/31/2019	ND	0.020	101	0.0200	1.45		
Toluene*	<0.001	0.001	07/31/2019	ND	0.021	103	0.0200	1.22		
Ethylbenzene*	<0.001	0.001	07/31/2019	ND	0.020	97.7	0.0200	1.68		
Total Xylenes*	<0.003	0.003	07/31/2019	ND	0.060	99.5	0.0600	2.63		
Total BTEX	<0.006	0.006	07/31/2019	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*	136	4.00	07/30/2019	ND	104	104	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*	124	25.0	07/31/2019	ND	18.7	93.6	20.0	0.107		

TDS 160.1		mg/L		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TDS*	634	5.00	08/02/2019	ND	533	101	527	2.69		

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report



Celey D. Keene, Lab Director/Quality Manager

November 06, 2019

KATIE JONES

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD K-4 RELEASE

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

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

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:	10/25/2019
Reported:	11/06/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #1 (H903719-01)

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) 98.3 % 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*	140	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*	114	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*	647	5.00	11/01/2019	ND	495	93.9	527	1.68	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

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:	10/25/2019
Reported:	11/06/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #2 (H903719-02)

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) 101 % 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*	120	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*	92.7	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*	603	5.00	11/04/2019	ND	495	93.9	527	1.68		

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Celey D. Keene, Lab Director/Quality Manager

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:	10/25/2019
Reported:	11/06/2019	Sampling Type:	Water
Project Name:	BD K-4 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	T22S R37E SEC4K - LEA CTY., NM		

Sample ID: MONITOR WELL #3 (H903719-03)

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) 98.1 % 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*	120	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*	94.2	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*	564	5.00	11/01/2019	ND	495	93.9	527	1.68		

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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



Celey D. Keene, Lab Director/Quality Manager

