

COLORADO OFFICE
10758 W. CENTENNIAL RD., STE. 200
LITTLETON, CO 80127
TEL: (866) 981-4588
FAX: (720) 981-5643



WYOMING OFFICE
5880 ENTERPRISE DR., STE. 200
CASPER, WY 82609
TEL: (307) 265-2373
FAX: (307) 265-2801

LOST CREEK ISR, LLC

January 25, 2018

40-9068

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**Re: Quarterly Reporting Pursuant to License Condition 11.1(A) and 10.8(C)
4th Quarter 2017
Lost Creek ISR Project License SUA-1598**

To Whom It May Concern:

This report for the fourth calendar quarter of 2017 has been submitted in accordance with License Condition (LC) 11.1(A) for Lost Creek ISR, LLC's (LCI) Lost Creek Project License SUA-1598. LC 11.1(A) requires quarterly reporting of the results of excursion monitoring. Additionally, this report includes the results of the quarterly Storage Pond inspections pursuant to LC 10.8(C). Therefore, this report summarizes the following items:

- Excursion monitoring that has occurred during operations as described in the NRC License Application Technical Report (TR) Section 5.7.8.2;
- Summary report of the quarterly Storage Ponds inspections and monitoring in accordance with TR Section 5.3.2.3.

MONITORING AND RESULTS

Header houses HH1-1 through HH1-13 within Mine Unit 1 (MU1) as well as HH2-2 in Mine Unit 2 (MU2) were operational as of the end of the reporting period. The monitor wells for MU1 and MU2 were sampled routinely on a semi-monthly basis at least 10 days apart during production to monitor for potential excursions. Well categories include ring ("M"), overlying ("MO" or "FG"), and underlying ("MU" or "KM") monitor wells.

Excursion monitoring parameters include alkalinity, chloride, and specific conductance for which associated Upper Control Limits (UCLs) have been established on a well-by-well basis. An excursion may be indicated by any one analytical parameter result exceeding the associated UCL by 20% or more or by two or three results exceeding the applicable UCL. The percent difference (or percent change) of the analytical result compared to the UCL value is determined by the following formula:

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NM5501

$$\% \text{ Difference} = \frac{\text{Result} - \text{UCL}}{\text{UCL}} \times 100\%$$

The results of sample analysis are provided on **Attachment 1**. The attachment table displays the analytical result, the applicable UCL value, and the percent difference. A negative percent difference indicates the analytical value is less than the UCL.

As a result of monitoring, the following parameters were in excess of the UCL but less than the 20% threshold:

- Alkalinity:
 - 10/12/2017 - M106 slightly exceeded the UCL
 - 10/13/2017 - MO107 slightly exceeded the UCL
 - 10/13/2017-12/28/2017 - MO111 exceeded the UCL
 - 11/2/2017 - M202 slightly exceeded UCL
- Conductivity:
 - 10/13/2017-12/28/2017 - MU109 exceeded the UCL
 - 11/3/2017 - M-FG213 slightly exceeded UCL
 - 11/3/2017-12/20/2017 - M-KM213 slightly exceeded the UCL. The cause is unknown and the conductivity had been elevated since the startup of HH2-2.
 - 11/3/2017-12/19/2017 - M-KM214 exceeded the UCL. The cause is unknown and the conductivity had been elevated just prior to and since the startup of HH2-2.
- Alkalinity, Chloride, and Conductivity
 - 10/8/2017-11/20/2017 - KPW2 See Excursion Status

Each case of exceedance is reviewed and wellfield flow adjustments are made, as necessary, to help prevent a potential excursion.

Samples were not collected from the regional DE horizon wells LC29M and MB-10 due to lack of water.

Excursion Status and Corrective Action

As of the end of the quarter, no wells were on excursion status. However, during the quarter, an excursion at well KPW2 was confirmed based on NRC method UCL criteria on October 9, 2017 and was corrected within 60 days as of December 6, 2017 as described in the 60-day Excursion Report submitted to NRC December 7, 2017.

STORAGE PONDS INSPECTION AND MONITORING

The quarterly Pond inspection was completed by the RSO and Environmental Technician on November 22, 2017. No issues were identified. The following items are related to overall operations of the Ponds over the quarter:

- *Freeboard*

The proper amount of freeboard was maintained during the reporting period. The freeboard heights in either Pond were not less than the minimum freeboard limit of 3 feet.

- *Routine Inspections*

The daily and weekly inspections were completed for the quarter. No significant issues were identified. Pond photographs were taken weekly and submitted to EPA for Subpart W reporting to demonstrate that water remained over any sediment.

- *Leak Detection System*

Only trace amounts of water were present in the leak detection (LD) sumps during the quarter and both were essentially dry as of the end of the quarter.

The average rates of residual water accumulating in the North and South Pond LD Sumps remained low (**Table 1**). A decline in accumulation rates by the end of the quarter was apparent.

TABLE 1: LD Sump Accumulation Rates

Month	North LD Sump Rate (in/hr)	South LD Sump Rate (in/hr)
October 2017	0.007	0.011
November 2017	0.001	0.005
December 2017	0.000	0.001
<i>Average</i>	<i>0.003</i>	<i>0.006</i>

- *Water Quality Monitoring*

Quarterly Pond samples were collected from the Pond surfaces on November 22, 2017. The samples were submitted to Energy Labs in Casper, WY and analyzed for the required parameters (**Table 2**).

TABLE 2: Pond Water Quality

Sample ID	Sample Date	Total Alkalinity (CaCO ₃)	Chloride	Cond., Specific @ 25°C	pH	Sodium	Sulfate	Total Dissolved Solids	Arsenic	Selenium	Uranium, Total	Radium-226
		mg/L	mg/L	µS/cm	s. u.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
N Pond	11/22/2017	448	11,200	32,500	7.53	6,490	1,560	17,800	0.005	0.046	205	451
S Pond	11/22/2017	217	10,000	30,200	8.20	6,540	1,810	17,800	0.006	0.068	41.8	141

- Pond Monitor Wells**

Pond monitor wells were measured in association with the quarterly water sample collection. No water was detected in the wells as summarized on **Table 3**:

TABLE 3: Pond Monitor Well Water Levels

Well ID	Date	Water Level (ft-bmp)	Total Depth (ft-bmp)
MW-1	11/22/2017	ND	NM
MW-2	11/22/2017	ND	NM
MW-3	11/22/2017	ND	NM
MW-4	11/22/2017	ND	NM

If you have any questions regarding this report or require additional information please contact me at the Casper office.

Sincerely,



Michael D. Gaither
Manager EHS and Regulatory Affairs
Ur-Energy USA, Inc

Attachments: **Attachment 1: Water Quality Data Tables**

Cc: Deputy Director, Division of Decommissioning
Uranium Recovery and Waste Programs
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Mail Stop T-8F5
11545 Rockville Pike, Two White Flint North
Rockville, MD 20852-2738
John Saxton, NRC (via e-mail)
Nancy Williams, WDEQ-LQD, Lander (via e-mail)
Theresa Horne, Ur-Energy, Littleton (via e-mail)

Attachment 1: MU1 Water Quality Data
4th Quarter 2017
Lost Creek ISR Project SUA-1598

Well ID	Well Type	Collection Date	Days Apart	Alkalinity (mg/L)			Chloride (mg/L)			Specific Conductance @ 25°C (µS/cm)			Comments
				Assay	UCL*	% Chg	Assay	UCL*	% Chg	Assay	UCL*	% Chg	
M101	MU1 Ring	10/11/2017	---	121	172	-30	6.1	21	-71	646	965	-33	
M101	MU1 Ring	10/24/2017	13	113	172	-34	5.4	21	-74	645	965	-33	
M101	MU1 Ring	11/8/2017	15	116	172	-33	6.7	21	-68	645	965	-33	
M101	MU1 Ring	11/28/2017	20	117	172	-32	6.2	21	-70	630	965	-35	
M101	MU1 Ring	12/12/2017	14	119	172	-31	5.6	21	-73	643	965	-33	
M101	MU1 Ring	12/27/2017	15	120	172	-30	5.9	21	-72	656	965	-32	
M102	MU1 Ring	10/11/2017	---	142	173	-18	8.4	20	-58	803	971	-17	
M102	MU1 Ring	10/24/2017	13	141	173	-18	7.0	20	-65	802	971	-17	
M102	MU1 Ring	11/9/2017	16	137	173	-21	6.0	20	-70	800	971	-18	
M102	MU1 Ring	11/28/2017	19	157	173	-9	5.8	20	-71	791	971	-19	
M102	MU1 Ring	12/12/2017	14	142	173	-18	6.2	20	-69	807	971	-17	
M102	MU1 Ring	12/27/2017	15	136	173	-21	6.0	20	-70	821	971	-15	
M103A	MU1 Ring	10/11/2017	---	144	150	-4	6.7	21	-68	814	1171	-30	
M103A	MU1 Ring	10/24/2017	13	139	150	-7	6.6	21	-69	811	1171	-31	
M103A	MU1 Ring	11/9/2017	16	141	150	-6	7.0	21	-67	808	1171	-31	
M103A	MU1 Ring	11/28/2017	19	135	150	-10	6.5	21	-69	807	1171	-31	
M103A	MU1 Ring	12/12/2017	14	142	150	-6	6.4	21	-70	812	1171	-31	
M103A	MU1 Ring	12/27/2017	15	138	150	-8	6.9	21	-67	822	1171	-30	
M104	MU1 Ring	10/11/2017	---	123	173	-29	7.2	22	-67	646	1162	-44	
M104	MU1 Ring	10/24/2017	13	117	173	-32	5.9	22	-73	640	1162	-45	
M104	MU1 Ring	11/9/2017	16	120	173	-30	5.5	22	-75	636	1162	-45	
M104	MU1 Ring	11/28/2017	19	121	173	-30	6.1	22	-72	633	1162	-46	
M104	MU1 Ring	12/12/2017	14	120	173	-31	5.4	22	-76	636	1162	-45	
M104	MU1 Ring	12/27/2017	15	117	173	-32	5.9	22	-73	645	1162	-44	
M105	MU1 Ring	10/12/2017	---	138	148	-7	8.5	21	-59	743	1036	-28	
M105	MU1 Ring	10/26/2017	14	144	148	-3	6.4	21	-70	773	1036	-25	
M105	MU1 Ring	11/9/2017	14	131	148	-12	6.9	21	-67	721	1036	-30	
M105	MU1 Ring	11/28/2017	19	135	148	-9	5.6	21	-73	731	1036	-29	
M105	MU1 Ring	12/12/2017	14	126	148	-15	6.3	21	-70	662	1036	-36	
M105	MU1 Ring	12/27/2017	15	125	148	-15	6.2	21	-71	686	1036	-34	
M106	MU1 Ring	10/12/2017	---	135	134	1	6.2	21	-71	696	980	-29	
M106	MU1 Ring	10/26/2017	14	123	134	-8	5.7	21	-73	691	980	-29	
M106	MU1 Ring	11/9/2017	14	133	134	-1	5.5	21	-74	675	980	-31	
M106	MU1 Ring	11/29/2017	20	125	134	-7	6.6	21	-68	692	980	-29	
M106	MU1 Ring	12/12/2017	13	127	134	-5	5.5	21	-74	675	980	-31	
M106	MU1 Ring	12/28/2017	16	124	134	-7	6.2	21	-71	698	980	-29	
M107	MU1 Ring	10/12/2017	---	123	138	-11	8.2	21	-61	676	1033	-35	
M107	MU1 Ring	10/26/2017	14	122	138	-12	5.7	21	-73	682	1033	-34	
M107	MU1 Ring	11/9/2017	14	120	138	-13	6.4	21	-69	675	1033	-35	
M107	MU1 Ring	11/29/2017	20	127	138	-8	5.8	21	-72	673	1033	-35	
M107	MU1 Ring	12/13/2017	14	122	138	-11	6.5	21	-69	675	1033	-35	
M107	MU1 Ring	12/28/2017	15	120	138	-13	5.9	21	-72	682	1033	-34	
M108	MU1 Ring	10/12/2017	---	116	127	-9	7.5	21	-64	548	905	-39	
M108	MU1 Ring	10/26/2017	14	106	127	-16	6.4	21	-69	557	905	-38	
M108	MU1 Ring	11/9/2017	14	110	127	-13	6.3	21	-70	548	905	-39	
M108	MU1 Ring	11/29/2017	20	110	127	-13	6.6	21	-68	544	905	-40	
M108	MU1 Ring	12/13/2017	14	111	127	-13	5.8	21	-72	547	905	-40	
M108	MU1 Ring	12/28/2017	15	107	127	-16	6.9	21	-67	552	905	-39	
M109	MU1 Ring	10/12/2017	---	108	161	-33	6.3	20	-68	518	703	-26	
M109	MU1 Ring	10/26/2017	14	104	161	-35	5.4	20	-73	528	703	-25	
M109	MU1 Ring	11/9/2017	14	105	161	-35	5.3	20	-74	512	703	-27	
M109	MU1 Ring	11/29/2017	20	108	161	-33	6.3	20	-69	510	703	-27	
M109	MU1 Ring	12/13/2017	14	109	161	-32	5.6	20	-72	514	703	-27	
M109	MU1 Ring	12/28/2017	15	105	161	-35	5.6	20	-72	518	703	-26	
M110	MU1 Ring	10/12/2017	---	114	147	-23	9.5	21	-55	544	1022	-47	
M110	MU1 Ring	10/26/2017	14	107	147	-27	6.8	21	-67	533	1022	-48	
M110	MU1 Ring	11/9/2017	14	106	147	-28	7.4	21	-65	533	1022	-48	
M110	MU1 Ring	11/29/2017	20	110	147	-25	6.6	21	-69	530	1022	-48	
M110	MU1 Ring	12/13/2017	14	106	147	-28	7.5	21	-65	531	1022	-48	
M110	MU1 Ring	12/28/2017	15	106	147	-28	7.4	21	-65	527	1022	-48	
M111	MU1 Ring	10/12/2017	---	113	146	-22	7.2	21	-66	530	897	-41	
M111	MU1 Ring	10/26/2017	14	108	146	-26	5.6	21	-73	541	897	-40	
M111	MU1 Ring	11/9/2017	14	117	146	-20	5.2	21	-75	545	897	-39	
M111	MU1 Ring	11/29/2017	20	112	146	-23	6.3	21	-70	543	897	-39	
M111	MU1 Ring	12/13/2017	14	118	146	-19	5.3	21	-75	548	897	-39	
M111	MU1 Ring	12/28/2017	15	110	146	-25	6.1	21	-71	546	897	-39	
M112	MU1 Ring	10/12/2017	---	114	147	-23	7.0	20	-65	550	636	-14	
M112	MU1 Ring	10/26/2017	14	112	147	-24	5.3	20	-73	546	636	-14	
M112	MU1 Ring	11/9/2017	14	111	147	-25	6.1	20	-69	545	636	-14	
M112	MU1 Ring	11/29/2017	20	118	147	-20	6.0	20	-70	539	636	-15	

Attachment 1: MU1 Water Quality Data
4th Quarter 2017
Lost Creek ISR Project SUA-1598

Well ID	Well Type	Collection Date	Days Apart	Alkalinity (mg/L)			Chloride (mg/L)			Specific Conductance @ 25°C (µS/cm)			Comments
				Assay	UCL*	% Chg	Assay	UCL*	% Chg	Assay	UCL*	% Chg	
M112	MU1 Ring	12/13/2017	14	112	147	-24	6.4	20	-68	544	636	-14	
M112	MU1 Ring	12/28/2017	15	109	147	-26	5.3	20	-73	543	636	-15	
M116A	MU1 Ring	10/11/2017	---	113	134	-16	7.4	20	-63	494	679	-27	
M116A	MU1 Ring	10/24/2017	13	103	134	-23	6.7	20	-67	490	679	-28	
M116A	MU1 Ring	11/8/2017	15	107	134	-20	6.9	20	-66	492	679	-28	
M116A	MU1 Ring	11/28/2017	20	104	134	-23	6.7	20	-66	489	679	-28	
M116A	MU1 Ring	12/12/2017	14	103	134	-23	5.2	20	-74	492	679	-28	
M116A	MU1 Ring	12/27/2017	15	104	134	-23	6.0	20	-70	488	679	-28	
M117	MU1 Ring	10/11/2017	---	111	139	-20	6.0	20	-70	487	711	-32	
M117	MU1 Ring	10/24/2017	13	108	139	-22	5.3	20	-74	481	711	-32	
M117	MU1 Ring	11/8/2017	15	102	139	-27	6.2	20	-69	492	711	-31	
M117	MU1 Ring	11/28/2017	20	100	139	-28	5.2	20	-74	514	711	-28	
M117	MU1 Ring	12/12/2017	14	110	139	-21	5.3	20	-74	511	711	-28	
M117	MU1 Ring	12/27/2017	15	101	139	-27	5.1	20	-75	506	711	-29	
M118	MU1 Ring	10/11/2017	---	104	108	-4	6.6	21	-69	500	762	-34	
M118	MU1 Ring	10/24/2017	13	97	108	-10	5.7	21	-73	495	762	-35	
M118	MU1 Ring	11/8/2017	15	101	108	-6	5.2	21	-75	504	762	-34	
M118	MU1 Ring	11/28/2017	20	101	108	-7	5.6	21	-73	496	762	-35	
M118	MU1 Ring	12/12/2017	14	100	108	-8	5.5	21	-74	500	762	-34	
M118	MU1 Ring	12/27/2017	15	96	108	-11	5.3	21	-75	500	762	-34	
M119	MU1 Ring	10/11/2017	---	121	128	-5	7.5	20	-62	459	622	-26	
M119	MU1 Ring	10/24/2017	13	112	128	-13	6.7	20	-67	460	622	-26	
M119	MU1 Ring	11/8/2017	15	115	128	-10	5.9	20	-70	477	622	-23	
M119	MU1 Ring	11/28/2017	20	117	128	-9	5.7	20	-71	459	622	-26	
M119	MU1 Ring	12/12/2017	14	113	128	-11	5.3	20	-74	459	622	-26	
M119	MU1 Ring	12/27/2017	15	114	128	-11	6.0	20	-70	458	622	-26	
M120A	MU1 Ring	10/11/2017	---	112	142	-21	6.5	20	-68	470	715	-34	
M120A	MU1 Ring	10/24/2017	13	113	142	-21	5.9	20	-71	484	715	-32	
M120A	MU1 Ring	11/8/2017	15	109	142	-23	7.2	20	-64	483	715	-32	
M120A	MU1 Ring	11/28/2017	20	111	142	-22	5.5	20	-73	468	715	-35	
M120A	MU1 Ring	12/12/2017	14	112	142	-21	6.6	20	-67	475	715	-34	
M120A	MU1 Ring	12/27/2017	15	110	142	-23	5.3	20	-74	474	715	-34	
M121	MU1 Ring	10/11/2017	---	120	140	-14	6.9	20	-65	510	755	-32	
M121	MU1 Ring	10/24/2017	13	108	140	-23	6.6	20	-67	510	755	-32	
M121	MU1 Ring	11/8/2017	15	115	140	-18	3.5	20	-82	522	755	-31	
M121	MU1 Ring	11/28/2017	20	117	140	-17	6.1	20	-70	505	755	-33	
M121	MU1 Ring	12/12/2017	14	113	140	-20	5.0	20	-75	510	755	-32	
M121	MU1 Ring	12/27/2017	15	108	140	-23	6.0	20	-70	508	755	-33	
M122	MU1 Ring	10/11/2017	---	113	142	-21	7.3	20	-63	496	593	-16	
M122	MU1 Ring	10/24/2017	13	110	142	-23	5.5	20	-72	496	593	-16	
M122	MU1 Ring	11/8/2017	15	109	142	-23	6.1	20	-69	510	593	-14	
M122	MU1 Ring	11/28/2017	20	111	142	-22	5.1	20	-75	493	593	-17	
M122	MU1 Ring	12/12/2017	14	117	142	-17	5.8	20	-71	496	593	-16	
M122	MU1 Ring	12/27/2017	15	112	142	-21	5.1	20	-74	494	593	-17	
M123	MU1 Ring	10/11/2017	---	123	131	-6	6.6	20	-67	488	718	-32	
M123	MU1 Ring	10/24/2017	13	116	131	-11	5.7	20	-71	488	718	-32	
M123	MU1 Ring	11/8/2017	15	118	131	-10	7.0	20	-65	497	718	-31	
M123	MU1 Ring	11/28/2017	20	119	131	-10	5.9	20	-71	486	718	-32	
M123	MU1 Ring	12/12/2017	14	117	131	-10	5.3	20	-73	491	718	-32	
M123	MU1 Ring	12/27/2017	15	111	131	-15	5.7	20	-71	488	718	-32	
M124	MU1 Ring	10/11/2017	---	115	123	-7	7.7	20	-62	467	536	-13	
M124	MU1 Ring	10/24/2017	13	109	123	-11	6.0	20	-70	468	536	-13	
M124	MU1 Ring	11/8/2017	15	112	123	-9	5.6	20	-72	472	536	-12	
M124	MU1 Ring	11/28/2017	20	114	123	-8	5.1	20	-74	464	536	-13	
M124	MU1 Ring	12/12/2017	14	113	123	-8	4.9	20	-75	467	536	-13	
M124	MU1 Ring	12/27/2017	15	114	123	-7	5.1	20	-74	465	536	-13	
M125	MU1 Ring	10/11/2017	---	120	135	-11	7.0	21	-67	542	657	-18	
M125	MU1 Ring	10/24/2017	13	109	135	-19	6.2	21	-70	549	657	-16	
M125	MU1 Ring	11/8/2017	15	108	135	-20	7.2	21	-66	548	657	-17	
M125	MU1 Ring	11/28/2017	20	108	135	-20	6.4	21	-70	537	657	-18	
M125	MU1 Ring	12/12/2017	14	113	135	-16	6.6	21	-69	541	657	-18	
M125	MU1 Ring	12/27/2017	15	105	135	-22	6.0	21	-72	537	657	-18	
M126	MU1 Ring	10/11/2017	---	116	194	-40	8.5	21	-60	548	682	-20	
M126	MU1 Ring	10/24/2017	13	109	194	-44	7.0	21	-67	559	682	-18	
M126	MU1 Ring	11/8/2017	15	117	194	-40	8.4	21	-60	557	682	-18	
M126	MU1 Ring	11/28/2017	20	122	194	-37	6.5	21	-69	543	682	-20	

Attachment 1: MU1 Water Quality Data
4th Quarter 2017
Lost Creek ISR Project SUA-1598

Well ID	Well Type	Collection Date	Days Apart	Alkalinity (mg/L)			Chloride (mg/L)			Specific Conductance @ 25°C (µS/cm)			Comments
				Assay	UCL*	% Chg	Assay	UCL*	% Chg	Assay	UCL*	% Chg	
M126	MU1 Ring	12/12/2017	14	108	194	-44	6.0	21	-72	549	682	-20	
M126	MU1 Ring	12/27/2017	15	108	194	-44	7.2	21	-66	544	682	-20	
M127	MU1 Ring	10/11/2017	---	118	149	-21	8.8	21	-58	559	792	-29	
M127	MU1 Ring	10/24/2017	13	109	149	-27	6.9	21	-67	563	792	-29	
M127	MU1 Ring	11/8/2017	15	111	149	-26	6.9	21	-67	576	792	-27	
M127	MU1 Ring	11/28/2017	20	113	149	-24	6.1	21	-71	561	792	-29	
M127	MU1 Ring	12/12/2017	14	117	149	-22	7.0	21	-66	564	792	-29	
M127	MU1 Ring	12/27/2017	15	120	149	-19	5.9	21	-72	563	792	-29	
M128	MU1 Ring	10/11/2017	---	119	122	-2	6.6	21	-68	562	802	-30	
M128	MU1 Ring	10/24/2017	13	115	122	-6	6.4	21	-69	554	802	-31	
M128	MU1 Ring	11/8/2017	15	112	122	-8	7.2	21	-66	569	802	-29	
M128	MU1 Ring	11/28/2017	20	114	122	-7	6.7	21	-68	547	802	-32	
M128	MU1 Ring	12/12/2017	14	114	122	-7	5.6	21	-74	560	802	-30	
M128	MU1 Ring	12/27/2017	15	109	122	-10	6.5	21	-69	557	802	-31	
MO101	MU1 Ring	10/12/2017	---	113	136	-17	9.8	23	-57	644	824	-22	
MO101	MU1 Ring	10/27/2017	15	107	136	-22	10.0	23	-56	636	824	-23	
MO101	MU1 Ring	11/10/2017	14	110	136	-19	7.5	23	-67	645	824	-22	
MO101	MU1 Ring	11/30/2017	20	110	136	-19	7.0	23	-69	629	824	-24	
MO101	MU1 Ring	12/14/2017	14	103	136	-24	8.7	23	-62	636	824	-23	
MO101	MU1 Ring	12/29/2017	15	110	136	-19	8.3	23	-64	643	824	-22	
MO102	MU1 Ring	10/12/2017	---	111	125	-11	8.6	21	-59	590	670	-12	
MO102	MU1 Ring	10/27/2017	15	101	125	-19	6.9	21	-67	590	670	-12	
MO102	MU1 Ring	11/10/2017	14	108	125	-14	6.7	21	-68	596	670	-11	
MO102	MU1 Ring	11/30/2017	20	105	125	-16	7.3	21	-65	591	670	-12	
MO102	MU1 Ring	12/14/2017	14	104	125	-17	6.5	21	-69	601	670	-10	
MO102	MU1 Ring	12/29/2017	15	104	125	-17	6.7	21	-68	595	670	-11	
MO103	MU1 Ring	10/12/2017	---	120	130	-8	10.0	21	-52	721	849	-15	
MO103	MU1 Ring	10/27/2017	15	125	130	-4	12.6	21	-40	730	849	-14	
MO103	MU1 Ring	11/10/2017	14	117	130	-10	10.5	21	-50	724	849	-15	
MO103	MU1 Ring	11/30/2017	20	124	130	-5	10.0	21	-53	729	849	-14	
MO103	MU1 Ring	12/14/2017	14	118	130	-9	11.0	21	-47	733	849	-14	
MO103	MU1 Overlying	12/29/2017	15	118	130	-9	10.4	21	-50	735	849	-13	
MO104	MU1 Overlying	10/12/2017	---	122	160	-24	12.3	24	-49	594	714	-17	
MO104	MU1 Overlying	10/27/2017	15	114	160	-28	9.3	24	-61	600	714	-16	
MO104	MU1 Overlying	11/10/2017	14	122	160	-24	8.8	24	-63	593	714	-17	
MO104	MU1 Overlying	11/30/2017	20	119	160	-26	9.7	24	-60	598	714	-16	
MO104	MU1 Overlying	12/14/2017	14	129	160	-20	10.4	24	-57	614	714	-14	
MO104	MU1 Overlying	12/29/2017	15	125	160	-22	10.5	24	-56	616	714	-14	
MO105	MU1 Overlying	10/12/2017	---	110	128	-14	6.9	20	-65	477	669	-29	
MO105	MU1 Overlying	10/27/2017	15	109	128	-15	5.5	20	-72	476	669	-29	
MO105	MU1 Overlying	11/10/2017	14	105	128	-18	6.7	20	-66	480	669	-28	
MO105	MU1 Overlying	11/29/2017	19	110	128	-14	6.2	20	-69	476	669	-29	
MO105	MU1 Overlying	12/14/2017	15	104	128	-19	5.8	20	-71	474	669	-29	
MO105	MU1 Overlying	12/28/2017	14	102	128	-20	6.1	20	-69	474	669	-29	
MO106	MU1 Overlying	10/13/2017	---	106	143	-26	6.8	20	-66	464	626	-26	
MO106	MU1 Overlying	10/27/2017	14	101	143	-29	6.2	20	-69	461	626	-26	
MO106	MU1 Overlying	11/13/2017	17	103	143	-28	5.7	20	-72	459	626	-27	
MO106	MU1 Overlying	11/29/2017	16	102	143	-28	5.5	20	-72	465	626	-26	
MO106	MU1 Overlying	12/13/2017	14	102	143	-29	5.3	20	-73	464	626	-26	
MO106	MU1 Overlying	12/28/2017	15	101	143	-29	6.1	20	-70	464	626	-26	
MO107	MU1 Overlying	10/13/2017	---	112	110	2	8.1	20	-60	466	502	-7	
MO107	MU1 Overlying	10/27/2017	14	101	110	-8	5.2	20	-74	456	502	-9	
MO107	MU1 Overlying	11/13/2017	17	109	110	-1	5.5	20	-72	460	502	-8	
MO107	MU1 Overlying	11/29/2017	16	103	110	-6	6.2	20	-69	462	502	-8	
MO107	MU1 Overlying	12/13/2017	14	106	110	-4	6.0	20	-70	461	502	-8	
MO107	MU1 Overlying	12/28/2017	15	104	110	-5	5.5	20	-73	460	502	-8	
MO108	MU1 Overlying	10/12/2017	---	106	118	-10	6.6	20	-67	478	513	-7	
MO108	MU1 Overlying	10/26/2017	14	101	118	-14	6.4	20	-68	480	513	-6	
MO108	MU1 Overlying	11/9/2017	14	102	118	-13	6.1	20	-69	478	513	-7	
MO108	MU1 Overlying	11/27/2017	18	106	118	-10	5.9	20	-70	478	513	-7	
MO108	MU1 Overlying	12/13/2017	16	104	118	-12	5.5	20	-73	478	513	-7	
MO108	MU1 Overlying	12/28/2017	15	100	118	-16	5.2	20	-74	480	513	-6	
MO109	MU1 Overlying	10/13/2017	---	113	120	-6	9.3	21	-56	505	567	-11	
MO109	MU1 Overlying	10/30/2017	17	114	120	-5	7.7	21	-63	509	567	-10	
MO109	MU1 Overlying	11/13/2017	14	113	120	-6	7.5	21	-64	512	567	-10	
MO109	MU1 Overlying	11/30/2017	17	109	120	-9	9.1	21	-57	507	567	-11	

Attachment 1: MU1 Water Quality Data
4th Quarter 2017
Lost Creek ISR Project SUA-1598

Well ID	Well Type	Collection Date	Days Apart	Alkalinity (mg/L)			Chloride (mg/L)			Specific Conductance @ 25°C (µS/cm)			Comments
				Assay	UCL*	% Chg	Assay	UCL*	% Chg	Assay	UCL*	% Chg	
MO109	MU1 Overlying	12/13/2017	13	108	120	-10	9.1	21	-57	513	567	-10	
MO109	MU1 Overlying	12/28/2017	15	105	120	-12	9.3	21	-56	507	567	-11	
MO110	MU1 Overlying	10/13/2017	—	106	128	-17	7.3	23	-68	430	533	-19	
MO110	MU1 Overlying	10/30/2017	17	98	128	-23	5.9	23	-74	430	533	-19	
MO110	MU1 Overlying	11/9/2017	10	102	128	-20	0.0	23	-100	433	533	-19	
MO110	MU1 Overlying	11/29/2017	20	98	128	-23	5.9	23	-74	422	533	-21	
MO110	MU1 Overlying	12/13/2017	14	100	128	-22	5.8	23	-75	438	533	-18	
MO110	MU1 Overlying	12/28/2017	15	99	128	-23	6.2	23	-73	431	533	-19	
MO111	MU1 Overlying	10/13/2017	—	118	115	2	10.0	20	-50	477	639	-25	
MO111	MU1 Overlying	10/30/2017	17	122	115	6	10.6	20	-47	498	639	-22	
MO111	MU1 Overlying	11/9/2017	10	121	115	5	9.1	20	-54	498	639	-22	
MO111	MU1 Overlying	11/29/2017	20	130	115	13	12.1	20	-40	503	639	-21	
MO111	MU1 Overlying	12/13/2017	14	129	115	12	10.6	20	-47	513	639	-20	
MO111	MU1 Overlying	12/28/2017	15	122	115	6	11.5	20	-43	498	639	-22	
MO112	MU1 Overlying	10/13/2017	—	119	252	-53	9.1	22	-59	430	541	-21	
MO112	MU1 Overlying	10/30/2017	17	113	252	-55	7.0	22	-68	431	541	-20	
MO112	MU1 Overlying	11/13/2017	14	113	252	-55	5.4	22	-75	434	541	-20	
MO112	MU1 Overlying	11/29/2017	16	109	252	-57	6.9	22	-69	425	541	-21	
MO112	MU1 Overlying	12/13/2017	14	111	252	-56	8.1	22	-63	436	541	-19	
MO112	MU1 Overlying	12/28/2017	15	110	252	-56	7.2	22	-67	433	541	-20	
MO113	MU1 Overlying	10/13/2017	—	108	121	-11	9.4	21	-55	458	484	-5	
MO113	MU1 Overlying	10/30/2017	17	103	121	-15	8.9	21	-57	461	484	-5	
MO113	MU1 Overlying	11/13/2017	14	108	121	-11	6.1	21	-71	464	484	-4	
MO113	MU1 Overlying	11/30/2017	17	108	121	-10	9.2	21	-56	463	484	-4	
MO113	MU1 Overlying	12/14/2017	14	102	121	-16	9.0	21	-57	460	484	-5	
MO113	MU1 Overlying	12/29/2017	15	105	121	-13	8.7	21	-58	461	484	-5	
MU101	MU1 Overlying	10/12/2017	—	115	157	-27	6.4	20	-68	543	653	-17	
MU101	MU1 Overlying	10/27/2017	15	111	157	-29	5.2	20	-74	548	653	-16	
MU101	MU1 Overlying	11/10/2017	14	107	157	-32	5.2	20	-74	543	653	-17	
MU101	MU1 Overlying	11/30/2017	20	114	157	-27	7.0	20	-65	542	653	-17	
MU101	MU1 Overlying	12/14/2017	14	107	157	-32	5.2	20	-74	546	653	-16	
MU101	MU1 Overlying	12/29/2017	15	108	157	-31	6.9	20	-66	543	653	-17	
MU102	MU1 Overlying	10/12/2017	—	111	119	-6	7.2	19	-62	429	507	-15	
MU102	MU1 Overlying	10/27/2017	15	106	119	-11	5.3	19	-72	427	507	-16	
MU102	MU1 Overlying	11/10/2017	14	115	119	-3	10.5	19	-45	429	507	-15	
MU102	MU1 Overlying	11/30/2017	20	107	119	-10	4.9	19	-74	427	507	-16	
MU102	MU1 Overlying	12/14/2017	14	104	119	-12	5.8	19	-69	423	507	-17	
MU102	MU1 Overlying	12/29/2017	15	105	119	-12	5.1	19	-73	423	507	-17	
MU103	MU1 Overlying	10/12/2017	—	105	213	-51	6.0	20	-70	424	560	-24	
MU103	MU1 Overlying	10/27/2017	15	101	213	-53	5.2	20	-74	413	560	-26	
MU103	MU1 Overlying	11/10/2017	14	103	213	-52	7.1	20	-64	422	560	-25	
MU103	MU1 Overlying	11/30/2017	20	105	213	-51	5.4	20	-73	415	560	-26	
MU103	MU1 Overlying	12/14/2017	14	100	213	-53	4.8	20	-76	412	560	-26	
MU103	MU1 Underlying	12/29/2017	15	104	213	-51	5.4	20	-73	413	560	-26	
MU104	MU1 Underlying	10/12/2017	—	99	159	-38	4.9	21	-77	434	572	-24	
MU104	MU1 Underlying	10/27/2017	15	98	159	-38	4.7	21	-78	430	572	-25	
MU104	MU1 Underlying	11/10/2017	14	99	159	-37	5.4	21	-74	430	572	-25	
MU104	MU1 Underlying	11/30/2017	20	104	159	-34	5.3	21	-75	431	572	-25	
MU104	MU1 Underlying	12/14/2017	14	97	159	-39	5.2	21	-75	430	572	-25	
MU104	MU1 Underlying	12/29/2017	15	100	159	-37	5.0	21	-76	432	572	-24	
MU105	MU1 Underlying	10/12/2017	—	112	124	-10	6.2	19	-67	456	562	-19	
MU105	MU1 Underlying	10/27/2017	15	105	124	-15	5.7	19	-70	435	562	-23	
MU105	MU1 Underlying	11/10/2017	14	104	124	-16	5.0	19	-73	438	562	-22	
MU105	MU1 Underlying	11/29/2017	19	104	124	-16	5.1	19	-73	432	562	-23	
MU105	MU1 Underlying	12/14/2017	15	103	124	-17	5.3	19	-72	436	562	-22	
MU105	MU1 Underlying	12/28/2017	14	106	124	-15	5.3	19	-72	439	562	-22	
MU106	MU1 Underlying	10/13/2017	—	106	137	-23	5.5	20	-72	462	522	-11	
MU106	MU1 Underlying	10/27/2017	14	104	137	-24	5.2	20	-74	445	522	-15	
MU106	MU1 Underlying	11/13/2017	17	105	137	-24	5.3	20	-73	454	522	-13	
MU106	MU1 Underlying	11/29/2017	16	103	137	-25	5.6	20	-72	447	522	-14	
MU106	MU1 Underlying	12/13/2017	14	107	137	-22	5.0	20	-75	456	522	-13	
MU106	MU1 Underlying	12/28/2017	15	109	137	-21	5.4	20	-73	456	522	-13	
MU107	MU1 Underlying	10/13/2017	—	109	136	-20	6.9	20	-65	485	556	-13	
MU107	MU1 Underlying	10/27/2017	14	101	136	-26	5.7	20	-71	469	556	-16	
MU107	MU1 Underlying	11/13/2017	17	103	136	-24	5.2	20	-74	471	556	-15	
MU107	MU1 Underlying	11/29/2017	16	105	136	-23	5.6	20	-72	465	556	-16	

Attachment 1: MU1 Water Quality Data
4th Quarter 2017
Lost Creek ISR Project SUA-1598

Well ID	Well Type	Collection Date	Days Apart	Alkalinity (mg/L)			Chloride (mg/L)			Specific Conductance @ 25°C (µS/cm)			Comments
				Assay	UCL*	% Chg	Assay	UCL*	% Chg	Assay	UCL*	% Chg	
MU107	MU1 Underlying	12/13/2017	14	103	136	-24	5.8	20	-71	474	556	-15	
MU107	MU1 Underlying	12/28/2017	15	101	136	-26	5.8	20	-71	473	556	-15	
KPW2	MU1 Underlying	10/8/2017	---	143	136	5	20.0	21	-5	648	615	5	
KPW2	MU1 Underlying	10/12/2017	4	149	136	9	19.2	21	-9	657	615	7	
KPW2	MU1 Underlying	10/17/2017	5	139	136	2	17.6	21	-16	652	615	6	
KPW2	MU1 Underlying	10/26/2017	9	141	136	3	16.3	21	-22	642	615	4	
KPW2	MU1 Underlying	11/2/2017	7	140	136	3	20.6	21	-2	652	615	6	
KPW2	MU1 Underlying	11/14/2017	12	151	136	11	18.9	21	-10	689	615	12	
KPW2	MU1 Underlying	11/20/2017	6	153	136	13	22.0	21	5	676	615	10	
KPW2	MU1 Underlying	11/27/2017	7	117	136	-14	7.0	21	-66	521	615	-15	
KPW2	MU1 Underlying	11/30/2017	3	118	136	-13	8.7	21	-58	538	615	-13	
KPW2	MU1 Underlying	12/6/2017	6	121	136	-11	18.6	21	-11	540	615	-12	
KPW2	MU1 Underlying	12/13/2017	7	114	136	-16	6.8	21	-68	515	615	-16	
KPW2	MU1 Underlying	12/28/2017	15	116	136	-15	9.9	21	-53	535	615	-13	
MU109	MU1 Underlying	10/13/2017	---	127	196	-35	11.7	23	-49	540	525	3	
MU109	MU1 Underlying	10/30/2017	17	130	196	-34	10.9	23	-53	525	525	0	
MU109	MU1 Underlying	11/13/2017	14	132	196	-33	10.5	23	-55	557	525	6	
MU109	MU1 Underlying	11/30/2017	17	128	196	-35	12.7	23	-45	546	525	4	
MU109	MU1 Underlying	12/13/2017	13	137	196	-30	13.1	23	-43	559	525	6	
MU109	MU1 Underlying	12/28/2017	15	136	196	-30	14.1	23	-39	571	525	9	
MU110	MU1 Underlying	10/13/2017	---	101	144	-30	6.5	24	-73	477	596	-20	
MU110	MU1 Underlying	10/30/2017	17	96	144	-34	6.6	24	-72	459	596	-23	
MU110	MU1 Underlying	11/9/2017	10	97	144	-33	6.9	24	-71	468	596	-21	
MU110	MU1 Underlying	11/29/2017	20	99	144	-31	6.5	24	-73	464	596	-22	
MU110	MU1 Underlying	12/13/2017	14	101	144	-30	6.4	24	-73	467	596	-22	
MU110	MU1 Underlying	12/28/2017	15	98	144	-32	6.2	24	-74	466	596	-22	
MU111	MU1 Underlying	10/13/2017	---	102	188	-46	6.9	22	-69	517	652	-21	
MU111	MU1 Underlying	10/30/2017	17	96	188	-49	5.8	22	-74	502	652	-23	
MU111	MU1 Underlying	11/9/2017	10	98	188	-48	5.3	22	-76	507	652	-22	
MU111	MU1 Underlying	11/29/2017	20	101	188	-46	5.1	22	-77	503	652	-23	
MU111	MU1 Underlying	12/13/2017	14	99	188	-47	4.8	22	-78	505	652	-23	
MU111	MU1 Underlying	12/28/2017	15	98	188	-48	5.3	22	-76	503	652	-23	
MU112	MU1 Underlying	10/13/2017	---	105	224	-53	5.3	24	-78	454	483	-6	
MU112	MU1 Underlying	10/30/2017	17	97	224	-57	4.9	24	-80	439	483	-9	
MU112	MU1 Underlying	11/13/2017	14	99	224	-56	5.0	24	-79	446	483	-8	
MU112	MU1 Underlying	11/29/2017	16	99	224	-56	6.2	24	-74	449	483	-7	
MU112	MU1 Underlying	12/13/2017	14	99	224	-56	5.8	24	-76	455	483	-6	
MU112	MU1 Underlying	12/28/2017	15	96	224	-57	5.7	24	-76	446	483	-8	
MU113	MU1 Underlying	10/13/2017	---	99	140	-29	6.3	25	-75	489	590	-17	
MU113	MU1 Underlying	10/30/2017	17	97	140	-31	6.1	25	-76	475	590	-19	
MU113	MU1 Underlying	11/13/2017	14	98	140	-30	5.7	25	-77	481	590	-18	
MU113	MU1 Underlying	11/30/2017	17	97	140	-31	6.5	25	-74	498	590	-16	
MU113	MU1 Underlying	12/14/2017	14	95	140	-32	5.1	25	-79	477	590	-19	
MU113	MU1 Underlying	12/29/2017	15	94	140	-33	5.1	25	-80	480	590	-19	
LC29M	Regional DE	10/7/2017	N/A	--	N/A	N/A	--	N/A	N/A	--	N/A	N/A	Insufficient water
MB-10	Regional DE	10/7/2017	N/A	--	N/A	N/A	--	N/A	N/A	--	N/A	N/A	Insufficient water

UCL : Upper Control Limit
 * : UCL calculated on a per-well basis
Italics : Indicates warning when result is > UCL but < 120% of UCL
Bold Italics : Indicates value > 120% of UCL

Attachment 1: MU1 Water Quality Data
4th Quarter 2017
Lost Creek ISR Project SUA-1598

Well ID	Well Type	Collection Date	Days Apart	Alkalinity (mg/L)			Chloride (mg/L)			Specific Conductance @ 25°C (µS/cm)			Comments
				Assay	UCL*	% Chg	Assay	UCL*	% Chg	Assay	UCL*	% Chg	
M201	Ring	10/2/2017	---	97	116	-16	6.0	20	-70	462	515	-10	
M201	Ring	10/19/2017	17	95	116	-18	5.3	20	-73	454	515	-12	
M201	Ring	11/2/2017	14	90	116	-22	4.9	20	-76	441	515	-14	
M201	Ring	11/16/2017	14	99	116	-15	5.1	20	-74	466	515	-10	
M201	Ring	12/1/2017	15	102	116	-12	5.0	20	-75	462	515	-10	
M201	Ring	12/19/2017	18	97	116	-16	5.2	20	-74	472	515	-8	
M202	Ring	10/2/2017	---	85	98	-13	5.1	20	-75	448	584	-23	
M202	Ring	10/19/2017	17	89	98	-9	5.0	20	-75	451	584	-23	
M202	Ring	11/2/2017	14	101	98	3	5.8	20	-71	463	584	-21	
M202	Ring	11/16/2017	14	91	98	-7	5.3	20	-73	434	584	-26	
M202	Ring	12/1/2017	15	90	98	-8	5.8	20	-71	425	584	-27	
M202	Ring	12/19/2017	18	85	98	-13	4.8	20	-76	424	584	-27	
M229	Ring	10/3/2017	---	93	111	-16	6.1	20	-70	503	666	-24	
M229	Ring	10/19/2017	16	95	111	-15	6.0	20	-70	513	666	-23	
M229	Ring	11/3/2017	15	101	111	-9	6.6	20	-67	522	666	-22	
M229	Ring	11/16/2017	13	105	111	-5	5.8	20	-71	515	666	-23	
M229	Ring	12/1/2017	15	101	111	-9	5.3	20	-74	517	666	-22	
M229	Ring	12/19/2017	18	104	111	-6	6.0	20	-70	509	666	-24	
M231A	Ring	10/3/2017	---	109	126	-13	5.6	20	-72	559	759	-26	
M231A	Ring	10/19/2017	16	111	126	-12	6.3	20	-68	578	759	-24	
M231A	Ring	11/3/2017	15	109	126	-13	6.4	20	-68	576	759	-24	
M231A	Ring	11/16/2017	13	113	126	-10	6.7	20	-67	565	759	-26	
M231A	Ring	12/1/2017	15	111	126	-12	5.5	20	-72	525	759	-31	
M231A	Ring	12/19/2017	18	108	126	-14	6.2	20	-69	561	759	-26	
M-FG213	Overlying	10/3/2017	---	103	117	-12	6.4	20	-68	418	443	-6	
M-FG213	Overlying	10/20/2017	17	106	117	-9	5.9	20	-70	444	443	0	
M-FG213	Overlying	11/3/2017	14	109	117	-7	6.3	20	-69	460	443	4	
M-FG213	Overlying	11/16/2017	13	115	117	-2	5.2	20	-74	418	443	-6	
M-FG213	Overlying	12/6/2017	20	112	117	-4	5.8	20	-71	409	443	-8	
M-FG213	Overlying	12/20/2017	14	107	117	-8	5.7	20	-72	412	443	-7	
M-FG214	Overlying	10/3/2017	---	102	117	-13	4.9	19	-74	380	399	-5	
M-FG214	Overlying	10/20/2017	17	105	117	-10	4.6	19	-76	383	399	-4	
M-FG214	Overlying	11/3/2017	14	106	117	-9	5.5	19	-71	397	399	-1	
M-FG214	Overlying	11/16/2017	13	105	117	-11	5.2	19	-73	379	399	-5	
M-FG214	Overlying	12/6/2017	20	104	117	-11	4.5	19	-76	383	399	-4	
M-FG214	Overlying	12/20/2017	14	104	117	-11	5.1	19	-73	382	399	-4	
M-FG215	Overlying	10/3/2017	---	101	160	-37	5.4	20	-73	391	677	-42	
M-FG215	Overlying	10/19/2017	16	100	160	-38	5.9	20	-70	396	677	-42	
M-FG215	Overlying	11/3/2017	15	99	160	-38	6.3	20	-68	417	677	-38	
M-FG215	Overlying	11/16/2017	13	102	160	-36	5.6	20	-72	397	677	-41	
M-FG215	Overlying	12/6/2017	20	110	160	-31	6.1	20	-70	396	677	-42	
M-FG215	Overlying	12/19/2017	13	101	160	-37	5.3	20	-73	418	677	-38	
M-HJ211	Interim Ring	10/3/2017	---	55	n/a	n/a	5.5	n/a	n/a	436	n/a	n/a	
M-HJ211	Interim Ring	10/19/2017	16	56	n/a	n/a	4.9	n/a	n/a	447	n/a	n/a	
M-HJ211	Interim Ring	11/2/2017	14	77	n/a	n/a	5.2	n/a	n/a	470	n/a	n/a	
M-HJ211	Interim Ring	11/16/2017	14	78	n/a	n/a	5.8	n/a	n/a	466	n/a	n/a	
M-HJ211	Interim Ring	12/1/2017	15	6	n/a	n/a	0.0	n/a	n/a	20.7	n/a	n/a	
M-HJ211	Interim Ring	12/19/2017	18	88	n/a	n/a	5.3	n/a	n/a	476	n/a	n/a	

Attachment 1: MU1 Water Quality Data
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M-HJ226	Interim Ring	10/3/2017	---	97	n/a	n/a	5.2	n/a	n/a	522	n/a	n/a	
M-HJ226	Interim Ring	10/19/2017	16	101	n/a	n/a	6.3	n/a	n/a	522	n/a	n/a	
M-HJ226	Interim Ring	11/2/2017	14	99	n/a	n/a	5.7	n/a	n/a	521	n/a	n/a	
M-HJ226	Interim Ring	11/16/2017	14	100	n/a	n/a	5.3	n/a	n/a	530	n/a	n/a	
M-HJ226	Interim Ring	12/1/2017	15	83	n/a	n/a	4.9	n/a	n/a	469	n/a	n/a	
M-HJ226	Interim Ring	12/19/2017	18	99	n/a	n/a	5.6	n/a	n/a	522	n/a	n/a	
M-HJ232	Interim Ring	10/3/2017	---	101	n/a	n/a	6.2	n/a	n/a	522	n/a	n/a	
M-HJ232	Interim Ring	10/19/2017	16	104	n/a	n/a	5.1	n/a	n/a	523	n/a	n/a	
M-HJ232	Interim Ring	11/2/2017	14	98	n/a	n/a	5.4	n/a	n/a	510	n/a	n/a	
M-HJ232	Interim Ring	11/16/2017	14	99	n/a	n/a	5.1	n/a	n/a	509	n/a	n/a	
M-HJ232	Interim Ring	12/1/2017	15	95	n/a	n/a	6.2	n/a	n/a	503	n/a	n/a	
M-HJ232	Interim Ring	12/19/2017	18	100	n/a	n/a	5.9	n/a	n/a	548	n/a	n/a	
M-HJ233	Interim Ring	10/4/2017	---	97	n/a	n/a	5.0	n/a	n/a	480	n/a	n/a	
M-HJ233	Interim Ring	10/19/2017	15	95	n/a	n/a	5.3	n/a	n/a	474	n/a	n/a	
M-HJ233	Interim Ring	11/2/2017	14	100	n/a	n/a	5.6	n/a	n/a	468	n/a	n/a	
M-HJ233	Interim Ring	11/16/2017	14	103	n/a	n/a	5.6	n/a	n/a	472	n/a	n/a	
M-HJ233	Interim Ring	12/1/2017	15	100	n/a	n/a	5.4	n/a	n/a	479	n/a	n/a	
M-HJ233	Interim Ring	12/19/2017	18	97	n/a	n/a	5.9	n/a	n/a	475	n/a	n/a	
M-KM213	Underlying	10/3/2017	---	83	141	-41	5.9	20	-71	474	480	-1	
M-KM213	Underlying	10/20/2017	17	85	141	-40	4.9	20	-76	478	480	0	
M-KM213	Underlying	11/3/2017	14	88	141	-38	5.6	20	-72	492	480	3	
M-KM213	Underlying	11/16/2017	13	92	141	-35	4.6	20	-77	482	480	0	
M-KM213	Underlying	12/6/2017	20	89	141	-37	4.8	20	-76	481	480	0	
M-KM213	Underlying	12/20/2017	14	90	141	-36	5.7	20	-71	488	480	2	
M-KM214	Underlying	10/3/2017	---	102	135	-25	5.2	20	-74	514	480	7	
M-KM214	Underlying	10/20/2017	17	103	135	-24	5.9	20	-70	515	480	7	
M-KM214	Underlying	11/3/2017	14	105	135	-22	5.4	20	-73	521	480	9	
M-KM214	Underlying	11/16/2017	13	109	135	-19	5.9	20	-71	517	480	8	
M-KM214	Underlying	12/6/2017	20	106	135	-22	6.0	20	-70	526	480	10	
M-KM214	Underlying	12/19/2017	13	106	135	-22	5.3	20	-73	551	480	15	
M-KM215	Underlying	10/3/2017	---	97	128	-24	5.9	20	-71	477	489	-2	
M-KM215	Underlying	10/19/2017	16	101	128	-21	5.4	20	-73	476	489	-3	
M-KM215	Underlying	11/3/2017	15	103	128	-20	5.5	20	-72	481	489	-2	
M-KM215	Underlying	11/16/2017	13	100	128	-22	4.9	20	-75	478	489	-2	
M-KM215	Underlying	12/6/2017	20	101	128	-21	5.4	20	-73	477	489	-2	
M-KM215	Underlying	12/19/2017	13	100	128	-22	5.7	20	-72	475	489	-3	

UCL : Upper Control Limit

* UCL calculated on a per-well basis

Italics : Indicates warning when result is > UCL but < 120% of UCL

Bold Italics : Indicates value > 120% of UCL

Attachment 1: MU1 Water Quality Data - QC
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QC Sample ID	Collection Date	QC Type	Source Sample ID	Alkalinity (mg/L)			Chloride (mg/L)			Sp. Cond. (uS/cm)		
				QC Sample Assay	Source Sample Assay	RPD	QC Sample Assay	Source Sample Assay	RPD	QC Sample Assay	Source Sample Assay	RPD
M129	10/11/2017	Dup	M118	103	104	1	6.3	6.6	4	514	500	3
M129	10/24/2017	Dup	M123	112	116	4	6.7	5.7	15	488	488	0
M129	11/8/2017	Dup	M117	105	102	3	6.3	6.2	1	509	492	3
M129	11/28/2017	Dup	M101	122	117	4	7.4	6.2	18	675	630	7
M129	12/12/2017	Dup	M116	104	103	1	5.1	5.2	2	499	492	1
M129	12/27/2017	Dup	M117	100	101	2	5.9	5.1	16	511	506	1
M130	10/11/2017	Blank	N/A	5	N/A	N/A	0.0	N/A	N/A	6	N/A	N/A
M130	10/24/2017	Blank	N/A	0	N/A	N/A	0.0	N/A	N/A	22	N/A	N/A
M130	11/8/2017	Blank	N/A	3	N/A	N/A	0.0	N/A	N/A	21	N/A	N/A
M130	11/28/2017	Dup	M102	139	157	12	6.2	5.8	6	821	791	4
M130	12/12/2017	Blank	N/A	12	N/A	N/A	0.0	N/A	N/A	27	N/A	N/A
M130	12/27/2017	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	5	N/A	N/A
M131	10/11/2017	Dup	M119	123	121	1	5.8	7.5	25	475	459	3
M131	10/24/2017	Dup	M124	111	109	2	5.2	6.0	14	475	468	1
M131	11/8/2017	Dup	M118	98	101	4	8.3	5.2	46*	507	504	1
M131	11/28/2017	Blank	N/A	8	N/A	N/A	0.0	N/A	N/A	18	N/A	N/A
M131	12/12/2017	Dup	M117	105	110	5	5.2	5.3	2	515	511	1
M131	12/27/2017	Dup	M118	100	96	4	5.1	5.3	5	505	500	1
M132	10/11/2017	Blank	N/A	16	N/A	N/A	0.0	N/A	N/A	37	N/A	N/A
M132	10/24/2017	Blank	N/A	0	N/A	N/A	0.0	N/A	N/A	16	N/A	N/A
M132	11/8/2017	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	11	N/A	N/A
M132	11/28/2017	Blank	N/A	6	N/A	N/A	0.0	N/A	N/A	12	N/A	N/A
M132	12/12/2017	Blank	N/A	7	N/A	N/A	0.0	N/A	N/A	18	N/A	N/A
M132	12/27/2017	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
MO121	10/12/2017	Dup	MO102	108	111	3	7.9	8.6	9	608	590	3
MO121	10/30/2017	Dup	MO112	116	113	3	7.0	7.0	0	430	431	0
MO121	11/13/2017	Dup	MO109	112	113	1	7.7	7.5	3	514	512	0
MO121	11/29/2017	Dup	MO111	126	130	3	10.1	12.1	18	508	503	1
MO121	12/13/2017	Dup	MO111	125	129	3	12.0	10.6	12	522	513	2
MO121	12/28/2017	Dup	MO109	106	105	0	7.2	9.3	25	508	507	0
MO122	10/12/2017	Blank	N/A	18	N/A	N/A	0.0	N/A	N/A	33	N/A	N/A
MO122	10/30/2017	Blank	N/A	7	N/A	N/A	0.0	N/A	N/A	18	N/A	N/A
MO122	11/13/2017	Blank	N/A	112	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
MO122	11/13/2017	Blank	N/A	10	N/A	N/A	0.0	N/A	N/A	26	N/A	N/A
MO122	11/30/2017	Blank	N/A	7	N/A	N/A	0.0	N/A	N/A	17	N/A	N/A
MO122	12/13/2017	Blank	N/A	3	N/A	N/A	0.0	N/A	N/A	13	N/A	N/A
MO122	12/28/2017	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
MU123	10/12/2017	Dup	MO103	122	120	2	10.4	10.0	4	744	721	3
MU123	10/30/2017	Dup	MO113	104	103	1	8.2	8.9	9	456	461	1
MU123	11/13/2017	Dup	MO112	116	113	2	6.9	5.4	24	430	434	1
MU123	11/29/2017	Dup	MO112	119	109	9	7.7	6.9	11	428	425	1
MU123	12/13/2017	Dup	MO110	101	100	1	5.9	5.8	2	438	438	0
MU123	12/28/2017	Dup	MU111	95	98	3	5.5	5.3	4	503	503	0
MU124	10/12/2017	Blank	N/A	17	N/A	N/A	0.0	N/A	N/A	37	N/A	N/A
MU124	10/30/2017	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
MU124	11/13/2017	Blank	N/A	97	N/A	N/A	0.0	N/A	N/A	0	N/A	N/A
MU124	11/13/2017	Blank	N/A	14	N/A	N/A	0.0	N/A	N/A	31	N/A	N/A
MU124	11/30/2017	Blank	N/A	9	N/A	N/A	0.0	N/A	N/A	20	N/A	N/A
MU124	12/13/2017	Blank	N/A	3	N/A	N/A	0.0	N/A	N/A	13	N/A	N/A
MU124	12/28/2017	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
M232	10/2/2017	Dup	M201	100	97	3	5.7	6.0	5	467	462	1
M232	10/19/2017	Dup	M202	90	89	1	5.6	5.0	10	457	451	1
M232	11/2/2017	Dup	M202	100	101	1	5.0	5.8	15	460	463	1
M232	11/16/2017	Dup	M202	91	91	0	4.7	5.3	12	431	434	1
M232	12/1/2017	Dup	M201	114	102	12	5.7	5.0	14	570	462	21
M232	12/19/2017	Dup	M-HJ226	100	100	0	5.2	5.9	13	524	548	4
M233	10/3/2017	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	5	N/A	N/A
M233	10/19/2017	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	3	N/A	N/A
M233	11/2/2017	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	5	N/A	N/A
M233	11/16/2017	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	6	N/A	N/A
M233	12/1/2017	Dup	M-HJ233	100	100	0	5.6	5.4	3	467	479	3
M233	12/19/2017	Blank	N/A	6	N/A	N/A	0.0	N/A	N/A	13	N/A	N/A
M234	10/4/2017	Dup	M-HJ233	93	97	4	4.6	5.0	10	473	480	1
M234	10/19/2017	Dup	M201	97	95	1	5.7	5.3	7	457	454	1
M234	11/2/2017	Dup	M-HJ233	97	100	3	4.7	5.6	18	474	468	1
M234	11/16/2017	Dup	M201	97	99	2	4.8	5.1	7	465	466	0
M234	12/1/2017	Blank	N/A	3	N/A	N/A	0.0	N/A	N/A	7	N/A	N/A
M234	12/19/2017	Dup	M229	103	104	1	6.0	6.0	0	514	509	1
M235	10/3/2017	Blank	N/A	4	N/A	N/A	0.0	N/A	N/A	14	N/A	N/A
M235	10/19/2017	Blank	N/A	4	N/A	N/A	0.0	N/A	N/A	9	N/A	N/A
M235	11/2/2017	Blank	N/A	4	N/A	N/A	0.0	N/A	N/A	10	N/A	N/A

Attachment 1: MU1 Water Quality Data - QC
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M235	11/16/2017	Blank	N/A	6	N/A	N/A	0.0	N/A	N/A	14	N/A	N/A
M235	12/1/2017	Dup	M231A	104	100	4	5.8	5.4	7	469	479	2
M235	12/19/2017	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	3	N/A	N/A
M-FG232	10/3/2017	Dup	M-KM213	83	83	1	5.2	5.9	13	477	474	1
M-FG232	10/19/2017	Dup	M-FG215	98	100	2	5.5	5.9	7	396	396	0
M-FG232	11/3/2017	Dup	M-FG213	110	109	1	6.4	6.3	2	426	460	8
M-FG232	11/16/2017	Dup	M-FG214	108	105	3	4.6	5.2	12	380	379	0
M-FG232	12/6/2017	Dup	M-KM213	90	89	1	5.0	4.8	5	483	481	0
M-FG232	12/20/2017	Dup	M-FG214	106	104	2	5.0	5.1	2	381	382	0
M-FG233	10/3/2017	Blank	N/A	10	N/A	N/A	0.0	N/A	N/A	24	N/A	N/A
M-FG233	10/19/2017	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	5	N/A	N/A
M-FG233	11/3/2017	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
M-FG233	11/16/2017	Blank	N/A	10	N/A	N/A	0.0	N/A	N/A	27	N/A	N/A
M-FG233	12/6/2017	Blank	N/A	8	N/A	N/A	0.0	N/A	N/A	31	N/A	N/A
M-FG233	12/20/2017	Blank	N/A	3	N/A	N/A	0.0	N/A	N/A	6	N/A	N/A
M-KM230	10/3/2017	Dup	M-FG213	106	103	2	5.3	6.4	19	418	418	0
M-KM230	10/19/2017	Dup	M-KM215	101	101	1	5.2	5.4	3	478	476	0
M-KM230	11/3/2017	Dup	M-KM214	103	105	2	6.1	5.4	12	535	521	3
M-KM230	11/16/2017	Dup	M-FG213	122	115	6	5.0	5.2	4	409	418	2
M-KM230	12/6/2017	Dup	M-FG214	107	104	2	5.0	4.5	9	381	383	1
M-KM230	12/19/2017	Dup	M-FG215	100	101	1	5.8	5.3	9	406	418	3
M-KM231	10/3/2017	Blank	N/A	11	N/A	N/A	0.0	N/A	N/A	26	N/A	N/A
M-KM231	10/19/2017	Blank	N/A	4	N/A	N/A	0.0	N/A	N/A	10	N/A	N/A
M-KM231	11/3/2017	Blank	N/A	5	N/A	N/A	0.0	N/A	N/A	25	N/A	N/A
M-KM231	11/16/2017	Blank	N/A	9	N/A	N/A	0.0	N/A	N/A	18	N/A	N/A
M-KM231	12/6/2017	Blank	N/A	9	N/A	N/A	0.0	N/A	N/A	20	N/A	N/A
M-KM231	12/20/2017	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	4	N/A	N/A

RPD: Relative Percent Difference

*NOTE: RPD indicative of titrator issue. Chloride probe was replaced afterwards