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LOST CREEK ISR, LLC

July 27, 2018

40-9068

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

**Re: Semi-Annual Reporting Pursuant to License Condition 11.1(B)
1st Half 2018
Lost Creek ISR Project, License SUA-1598**

To Whom It May Concern:

The following semi-annual report has been submitted in accordance with License Condition 11.1(B) for Lost Creek ISR, LLC's (LCI) Lost Creek ISR Project (LC-ISR) License SUA-1598. License Condition 11.1(B) requires semi-annual reporting of:

- Status of production areas in operation,
- Status of production areas in restoration,
- Status of any long-term excursions, and
- A summary of Mechanical Integrity Testing (MIT) of wells.

The reporting period for this report is January 1 through June 30, 2018.

Status of Production Areas in Operation

As of the end of the reporting period, thirteen header houses in MU1 and three header houses in MU2 were in operation as approved by Wyoming Department of Environmental Quality – Land Quality Division (WDEQ-LQD). The following table (**Table 1**) provides a status of production for operating mine units as of the end of the reporting period:

NM5501

Table 1: Operational Status Summary

Mine Unit	Header Houses	Status	Start Date
Mine Unit 1	HH1-1	In Operation	8/2/2013
	HH1-2	In Operation	8/15/2013
	HH1-3	In Operation	9/18/2013
	HH1-4	In Operation	2/4/2014
	HH1-5	In Operation	3/11/2014
	HH1-6	In Operation	7/16/2014
	HH1-7	In Operation	12/11/2014
	HH1-8	In Operation	1/10/2015
	HH1-9	In Operation	2/12/2015
	HH1-10	In Operation	6/18/2015
	HH1-11	In Operation	9/2/2015
	HH1-12	In Operation	11/17/2015
	HH1-13	In Operation	5/25/2016
Mine Unit 2	HH2-1	In Operation	5/11/2018
	HH2-2	In Operation	8/30/2017
	HH2-3	In Operation	1/11/2018
	HH2-4	Partial construction	N/A
	HH2-5	Planned	N/A
	HH2-6	Planned	N/A
	HH2-7	Planned	N/A
Mine Unit 3	N/A	Planned	N/A

Status of Production Areas in Restoration

No restoration activities had been initiated during the reporting period.

Long-Term Excursions

No wells were on long-term excursion status during the reporting period. However, as described in the quarterly report for 2nd quarter 2018, MO104 was placed on excursion in late June 2018.


Summary of MITs

During the reporting period, a total of 156 MITs were performed in accordance with the approved NRC License Application Technical Report Section 3.2.5. Results are summarized on **Attachment I**. The MITs resulted in 136 successful tests and 20 failures with 6 net wells failed. Most of the MITs conducted during the period were associated with a 5-year retest. Of the 6 wells that failed, two were subsequently retested and passed and four will be evaluated to determine if they can be repaired.

If you have any questions regarding this letter or require additional information please feel free to contact me at the Casper office.

Sincerely,
Lost Creek ISR, LLC
By its Member/Manager, Ur-Energy USA Inc.

By:


Michael Gaither
Manager EHS and Regulatory Affairs

Attachments: **Attachment 1: Mechanical Integrity Testing**

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 Project Manager (via e-mail)
Jean Lawlor, WDEQ-LQD, Lander (via e-mail)
Theresa Horne, Ur-Energy, Littleton (via e-mail)

**Attachment 1a: MU1 Water Quality Data
2nd Quarter 2018
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	4/4/2018	---	117	172	-32	6.1	21	-71	634	965	-34	
M101	MU1 Ring	4/19/2018	15	115	172	-33	5.7	21	-73	651	965	-33	
M101	MU1 Ring	5/2/2018	13	113	172	-34	5.7	21	-73	651	965	-33	
M101	MU1 Ring	5/16/2018	14	116	172	-33	5.3	21	-75	646	965	-33	
M101	MU1 Ring	6/7/2018	22	120	172	-30	6.0	21	-72	651	965	-33	
M101	MU1 Ring	6/19/2018	12	114	172	-33	6.5	21	-69	651	965	-33	
M102	MU1 Ring	4/4/2018	---	135	173	-22	5.8	20	-71	824	971	-15	
M102	MU1 Ring	4/19/2018	15	140	173	-19	6.7	20	-66	827	971	-15	
M102	MU1 Ring	5/2/2018	13	139	173	-19	6.8	20	-66	833	971	-14	
M102	MU1 Ring	5/16/2018	14	136	173	-21	6.5	20	-68	831	971	-14	
M102	MU1 Ring	6/7/2018	22	138	173	-20	6.9	20	-65	835	971	-14	
M102	MU1 Ring	6/19/2018	12	140	173	-19	5.7	20	-71	829	971	-15	
M103A	MU1 Ring	4/5/2018	---	135	150	-10	6.5	21	-69	814	1171	-30	
M103A	MU1 Ring	4/19/2018	14	131	150	-13	5.9	21	-72	814	1171	-30	
M103A	MU1 Ring	5/3/2018	14	133	150	-11	6.3	21	-70	817	1171	-30	
M103A	MU1 Ring	5/16/2018	13	134	150	-10	6.6	21	-69	816	1171	-30	
M103A	MU1 Ring	6/7/2018	22	134	150	-11	7.0	21	-67	815	1171	-30	
M103A	MU1 Ring	6/19/2018	12	137	150	-9	7.0	21	-66	813	1171	-31	
M104	MU1 Ring	4/5/2018	---	121	173	-30	5.7	22	-74	631	1162	-46	
M104	MU1 Ring	4/19/2018	14	120	173	-30	5.8	22	-73	629	1162	-46	
M104	MU1 Ring	5/3/2018	14	117	173	-32	5.3	22	-76	623	1162	-46	
M104	MU1 Ring	5/16/2018	13	111	173	-36	5.4	22	-75	621	1162	-47	
M104	MU1 Ring	6/7/2018	22	121	173	-30	5.8	22	-74	613	1162	-47	
M104	MU1 Ring	6/19/2018	12	117	173	-32	5.4	22	-75	610	1162	-48	
M105	MU1 Ring	4/5/2018	---	122	148	-18	5.7	21	-73	690	1036	-33	
M105	MU1 Ring	4/19/2018	14	121	148	-18	6.1	21	-71	700	1036	-32	
M105	MU1 Ring	5/3/2018	14	124	148	-16	6.8	21	-67	703	1036	-32	
M105	MU1 Ring	5/16/2018	13	130	148	-12	6.9	21	-67	705	1036	-32	
M105	MU1 Ring	6/7/2018	22	128	148	-14	7.5	21	-64	756	1036	-27	
M105	MU1 Ring	6/19/2018	12	127	148	-14	6.7	21	-68	696	1036	-33	
M106	MU1 Ring	4/5/2018	---	125	134	-7	6.1	21	-71	681	980	-31	
M106	MU1 Ring	4/19/2018	14	129	134	-4	5.6	21	-74	713	980	-27	
M106	MU1 Ring	5/3/2018	14	124	134	-7	5.6	21	-73	708	980	-28	
M106	MU1 Ring	5/16/2018	13	121	134	-10	5.5	21	-74	710	980	-28	
M106	MU1 Ring	6/7/2018	22	128	134	-4	6.0	21	-72	706	980	-28	
M106	MU1 Ring	6/19/2018	12	126	134	-6	5.8	21	-72	687	980	-30	
M107	MU1 Ring	4/5/2018	---	118	138	-15	5.8	21	-72	680	1033	-34	
M107	MU1 Ring	4/19/2018	14	117	138	-15	6.8	21	-67	687	1033	-33	
M107	MU1 Ring	5/3/2018	14	120	138	-13	6.7	21	-68	685	1033	-34	
M107	MU1 Ring	5/16/2018	13	124	138	-10	6.8	21	-67	686	1033	-34	
M107	MU1 Ring	6/7/2018	22	120	138	-13	7.1	21	-66	682	1033	-34	
M107	MU1 Ring	6/19/2018	12	121	138	-12	5.7	21	-73	685	1033	-34	
M108	MU1 Ring	4/5/2018	---	106	127	-17	6.6	21	-69	546	905	-40	
M108	MU1 Ring	4/19/2018	14	110	127	-13	5.7	21	-73	550	905	-39	
M108	MU1 Ring	5/3/2018	14	109	127	-14	5.9	21	-72	550	905	-39	
M108	MU1 Ring	5/16/2018	13	101	127	-20	5.8	21	-72	550	905	-39	
M108	MU1 Ring	6/7/2018	22	112	127	-12	6.2	21	-71	547	905	-40	
M108	MU1 Ring	6/19/2018	12	110	127	-13	6.6	21	-69	547	905	-40	
M109	MU1 Ring	4/5/2018	---	108	161	-33	5.5	20	-72	529	703	-25	
M109	MU1 Ring	4/19/2018	14	102	161	-37	5.8	20	-71	528	703	-25	
M109	MU1 Ring	5/3/2018	14	100	161	-38	5.8	20	-71	516	703	-27	
M109	MU1 Ring	5/16/2018	13	102	161	-37	5.6	20	-72	515	703	-27	
M109	MU1 Ring	6/7/2018	22	101	161	-37	5.9	20	-71	512	703	-27	
M109	MU1 Ring	6/20/2018	13	105	161	-35	5.4	20	-73	513	703	-27	
M110	MU1 Ring	4/5/2018	---	103	147	-30	12.6	21	-40	540	1022	-47	
M110	MU1 Ring	4/19/2018	14	105	147	-29	12.6	21	-40	544	1022	-47	
M110	MU1 Ring	5/3/2018	14	106	147	-28	12.1	21	-42	543	1022	-47	
M110	MU1 Ring	5/16/2018	13	103	147	-30	12.5	21	-41	548	1022	-46	
M110	MU1 Ring	6/7/2018	22	111	147	-25	13.3	21	-37	553	1022	-46	
M110	MU1 Ring	6/20/2018	13	110	147	-25	13.7	21	-35	559	1022	-45	
M111	MU1 Ring	4/5/2018	---	117	146	-20	6.0	21	-72	550	897	-39	
M111	MU1 Ring	4/19/2018	14	118	146	-19	6.0	21	-72	546	897	-39	
M111	MU1 Ring	5/3/2018	14	114	146	-22	5.2	21	-75	555	897	-38	
M111	MU1 Ring	5/17/2018	14	112	146	-23	5.3	21	-75	556	897	-38	
M111	MU1 Ring	6/7/2018	21	116	146	-21	5.5	21	-74	554	897	-38	
M111	MU1 Ring	6/20/2018	13	115	146	-22	6.0	21	-71	560	897	-38	
M112	MU1 Ring	4/5/2018	---	108	147	-27	5.3	20	-74	544	636	-14	
M112	MU1 Ring	4/19/2018	14	113	147	-23	5.3	20	-73	549	636	-14	
M112	MU1 Ring	5/3/2018	14	107	147	-27	6.5	20	-67	548	636	-14	
M112	MU1 Ring	5/17/2018	14	106	147	-28	6.0	20	-70	544	636	-14	

**Attachment 1a: MU1 Water Quality Data
2nd Quarter 2018
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	6/7/2018	21	108	147	-27	6.5	20	-67	542	636	-15	
M112	MU1 Ring	6/20/2018	13	112	147	-24	5.2	20	-74	549	636	-14	
M116A	MU1 Ring	4/4/2018	---	102	134	-24	6.0	20	-70	488	679	-28	
M116A	MU1 Ring	4/18/2018	14	103	134	-23	5.5	20	-73	492	679	-28	
M116A	MU1 Ring	5/2/2018	14	100	134	-25	5.4	20	-73	489	679	-28	
M116A	MU1 Ring	5/16/2018	14	100	134	-25	5.5	20	-73	487	679	-28	
M116A	MU1 Ring	6/6/2018	21	104	134	-22	5.7	20	-71	496	679	-27	
M116A	MU1 Ring	6/19/2018	13	102	134	-24	5.9	20	-70	492	679	-28	
M117	MU1 Ring	4/4/2018	---	101	139	-28	5.0	20	-75	505	711	-29	
M117	MU1 Ring	4/18/2018	14	99	139	-29	5.6	20	-72	508	711	-29	
M117	MU1 Ring	5/2/2018	14	101	139	-27	5.8	20	-71	500	711	-30	
M117	MU1 Ring	5/16/2018	14	100	139	-28	5.2	20	-74	504	711	-29	
M117	MU1 Ring	6/6/2018	21	103	139	-26	5.9	20	-71	509	711	-28	
M117	MU1 Ring	6/19/2018	13	101	139	-27	4.8	20	-76	507	711	-29	
M118	MU1 Ring	4/4/2018	---	99	108	-8	5.3	21	-75	499	762	-35	
M118	MU1 Ring	4/18/2018	14	104	108	-4	5.2	21	-75	496	762	-35	
M118	MU1 Ring	5/2/2018	14	102	108	-5	5.4	21	-74	498	762	-35	
M118	MU1 Ring	5/16/2018	14	103	108	-5	5.1	21	-76	502	762	-34	
M118	MU1 Ring	6/7/2018	22	102	108	-6	5.4	21	-74	498	762	-35	
M118	MU1 Ring	6/19/2018	12	107	108	-1	5.1	21	-76	504	762	-34	
M119	MU1 Ring	4/4/2018	---	113	128	-11	5.3	20	-73	459	622	-26	
M119	MU1 Ring	4/18/2018	14	112	128	-12	6.5	20	-68	463	622	-26	
M119	MU1 Ring	5/2/2018	14	109	128	-14	5.7	20	-71	469	622	-25	
M119	MU1 Ring	5/16/2018	14	109	128	-15	6.0	20	-70	473	622	-24	
M119	MU1 Ring	6/7/2018	22	118	128	-8	6.7	20	-66	471	622	-24	
M119	MU1 Ring	6/19/2018	12	111	128	-13	5.8	20	-71	478	622	-23	
M120A	MU1 Ring	4/4/2018	---	109	142	-23	6.4	20	-68	480	715	-33	
M120A	MU1 Ring	4/18/2018	14	108	142	-24	5.7	20	-72	477	715	-33	
M120A	MU1 Ring	5/2/2018	14	110	142	-22	6.6	20	-67	484	715	-32	
M120A	MU1 Ring	5/16/2018	14	111	142	-22	5.7	20	-72	482	715	-33	
M120A	MU1 Ring	6/7/2018	22	111	142	-22	6.0	20	-70	484	715	-32	
M120A	MU1 Ring	6/19/2018	12	113	142	-20	6.8	20	-66	460	715	-36	
M121	MU1 Ring	4/4/2018	---	107	140	-23	5.0	20	-75	509	755	-33	
M121	MU1 Ring	4/18/2018	14	111	140	-21	5.9	20	-70	511	755	-32	
M121	MU1 Ring	5/2/2018	14	109	140	-22	5.2	20	-74	511	755	-32	
M121	MU1 Ring	5/16/2018	14	109	140	-22	5.9	20	-71	511	755	-32	
M121	MU1 Ring	6/7/2018	22	113	140	-19	6.0	20	-70	513	755	-32	
M121	MU1 Ring	6/19/2018	12	110	140	-22	5.0	20	-75	516	755	-32	
M122	MU1 Ring	4/4/2018	---	110	142	-23	5.8	20	-71	495	593	-17	
M122	MU1 Ring	4/18/2018	14	106	142	-25	5.4	20	-73	498	593	-16	
M122	MU1 Ring	5/2/2018	14	106	142	-25	6.0	20	-70	499	593	-16	
M122	MU1 Ring	5/16/2018	14	108	142	-24	5.2	20	-74	500	593	-16	
M122	MU1 Ring	6/7/2018	22	110	142	-23	5.8	20	-71	504	593	-15	
M122	MU1 Ring	6/19/2018	12	109	142	-23	5.9	20	-71	503	593	-15	
M123	MU1 Ring	4/4/2018	---	114	131	-13	5.2	20	-74	490	718	-32	
M123	MU1 Ring	4/18/2018	14	113	131	-14	5.1	20	-74	489	718	-32	
M123	MU1 Ring	5/2/2018	14	116	131	-12	5.3	20	-73	490	718	-32	
M123	MU1 Ring	5/16/2018	14	116	131	-11	5.1	20	-75	491	718	-32	
M123	MU1 Ring	6/7/2018	22	118	131	-10	5.6	20	-72	495	718	-31	
M123	MU1 Ring	6/19/2018	12	119	131	-9	4.9	20	-75	496	718	-31	
M124	MU1 Ring	4/4/2018	---	108	123	-13	5.0	20	-75	465	536	-13	
M124	MU1 Ring	4/19/2018	15	112	123	-9	5.6	20	-72	465	536	-13	
M124	MU1 Ring	5/2/2018	13	108	123	-12	4.9	20	-75	466	536	-13	
M124	MU1 Ring	5/16/2018	14	109	123	-11	5.3	20	-73	465	536	-13	
M124	MU1 Ring	6/7/2018	22	111	123	-10	5.9	20	-71	470	536	-12	
M124	MU1 Ring	6/19/2018	12	109	123	-12	5.7	20	-71	471	536	-12	
M125	MU1 Ring	4/4/2018	---	109	135	-19	6.3	21	-70	537	657	-18	
M125	MU1 Ring	4/19/2018	15	105	135	-23	5.9	21	-72	539	657	-18	
M125	MU1 Ring	5/2/2018	13	110	135	-19	5.7	21	-73	535	657	-19	
M125	MU1 Ring	5/16/2018	14	107	135	-20	5.7	21	-73	540	657	-18	
M125	MU1 Ring	6/7/2018	22	110	135	-19	5.9	21	-72	546	657	-17	
M125	MU1 Ring	6/19/2018	12	109	135	-19	6.0	21	-71	546	657	-17	

**Attachment 1a: MU1 Water Quality Data
2nd Quarter 2018
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	4/4/2018	---	107	194	-45	5.8	21	-73	544	682	-20	
M126	MU1 Ring	4/19/2018	15	110	194	-43	7.1	21	-66	546	682	-20	
M126	MU1 Ring	5/2/2018	13	108	194	-44	6.6	21	-69	545	682	-20	
M126	MU1 Ring	5/16/2018	14	111	194	-43	6.7	21	-68	544	682	-20	
M126	MU1 Ring	6/7/2018	22	112	194	-42	7.2	21	-66	547	682	-20	
M126	MU1 Ring	6/19/2018	12	109	194	-44	6.0	21	-71	550	682	-19	
M127	MU1 Ring	4/4/2018	---	109	149	-27	7.3	21	-65	570	792	-28	
M127	MU1 Ring	4/19/2018	15	112	149	-25	6.8	21	-68	574	792	-28	
M127	MU1 Ring	5/2/2018	13	111	149	-25	6.8	21	-68	582	792	-27	
M127	MU1 Ring	5/16/2018	14	111	149	-26	6.6	21	-68	578	792	-27	
M127	MU1 Ring	6/7/2018	22	112	149	-25	7.0	21	-67	575	792	-27	
M127	MU1 Ring	6/19/2018	12	118	149	-21	6.9	21	-67	573	792	-28	
M128	MU1 Ring	4/4/2018	---	112	122	-8	6.0	21	-72	559	802	-30	
M128	MU1 Ring	4/19/2018	15	106	122	-13	5.9	21	-72	549	802	-32	
M128	MU1 Ring	5/2/2018	13	104	122	-15	5.6	21	-73	556	802	-31	
M128	MU1 Ring	5/16/2018	14	106	122	-13	5.9	21	-72	555	802	-31	
M128	MU1 Ring	6/7/2018	22	112	122	-8	6.1	21	-71	561	802	-30	
M128	MU1 Ring	6/19/2018	12	107	122	-12	5.4	21	-74	566	802	-29	
MO101	MU1 Overlying	4/6/2018	---	108	136	-20	10.1	23	-56	643	824	-22	
MO101	MU1 Overlying	4/20/2018	14	116	136	-14	10.3	23	-55	658	824	-20	
MO101	MU1 Overlying	5/4/2018	14	115	136	-16	10.7	23	-53	668	824	-19	
MO101	MU1 Overlying	5/22/2018	18	119	136	-13	9.6	23	-58	665	824	-19	
MO101	MU1 Overlying	6/8/2018	17	119	136	-12	10.7	23	-53	669	824	-19	
MO101	MU1 Overlying	6/21/2018	13	105	136	-23	7.4	23	-68	619	824	-25	
MO102	MU1 Overlying	4/6/2018	---	102	125	-19	6.8	21	-68	594	670	-11	
MO102	MU1 Overlying	4/20/2018	14	103	125	-17	7.3	21	-65	599	670	-11	
MO102	MU1 Overlying	5/4/2018	14	102	125	-18	7.3	21	-65	598	670	-11	
MO102	MU1 Overlying	5/22/2018	18	102	125	-19	7.4	21	-65	601	670	-10	
MO102	MU1 Overlying	6/8/2018	17	103	125	-18	6.6	21	-69	607	670	-9	
MO102	MU1 Overlying	6/21/2018	13	121	125	-3	9.9	21	-53	686	670	2	
MO103	MU1 Overlying	4/6/2018	---	122	130	-6	10.2	21	-52	744	849	-12	
MO103	MU1 Overlying	4/20/2018	14	123	130	-6	10.8	21	-49	750	849	-12	
MO103	MU1 Overlying	5/4/2018	14	125	130	-4	10.1	21	-52	749	849	-12	
MO103	MU1 Overlying	5/22/2018	18	121	130	-7	12.7	21	-40	756	849	-11	
MO103	MU1 Overlying	6/8/2018	17	129	130	0	12.5	21	-41	764	849	-10	
MO103	MU1 Overlying	6/21/2018	13	127	130	-2	11.5	21	-45	772	849	-9	
MO104	MU1 Overlying	4/6/2018	---	137	160	-14	15.8	24	-34	665	714	-7	
MO104	MU1 Overlying	4/20/2018	14	146	160	-9	17.0	24	-29	683	714	-4	
MO104	MU1 Overlying	5/1/2018	11	149	160	-7	15.5	24	-35	686	714	-4	
MO104	MU1 Overlying	5/22/2018	21	156	160	-3	18.7	24	-22	724	714	7	
MO104	MU1 Overlying	6/8/2018	17	167	160	5	18.2	24	-24	746	714	4	
MO104	MU1 Overlying	6/21/2018	13	168	160	5	18.4	24	-23	749	714	5	
MO104	MU1 Overlying	6/26/2018	5	174	160	9	18.8	24	-22	757	714	6	
MO105	MU1 Overlying	4/5/2018	---	104	128	-18	5.3	20	-73	474	669	-29	
MO105	MU1 Overlying	4/20/2018	15	104	128	-19	5.3	20	-74	472	669	-29	
MO105	MU1 Overlying	5/3/2018	13	101	128	-21	5.7	20	-72	472	669	-29	
MO105	MU1 Overlying	5/17/2018	14	143	128	12	6.0	20	-70	480	669	-28	
MO105	MU1 Overlying	6/11/2018	25	102	128	-20	5.4	20	-73	476	669	-29	
MO105	MU1 Overlying	6/21/2018	10	106	128	-17	5.5	20	-72	487	669	-27	
MO106	MU1 Overlying	4/5/2018	---	102	143	-29	6.4	20	-68	466	626	-26	
MO106	MU1 Overlying	4/20/2018	15	102	143	-29	6.6	20	-67	466	626	-26	
MO106	MU1 Overlying	5/3/2018	13	101	143	-29	6.1	20	-70	461	626	-26	
MO106	MU1 Overlying	5/17/2018	14	99	143	-31	6.0	20	-70	465	626	-26	
MO106	MU1 Overlying	6/11/2018	25	105	143	-26	6.2	20	-69	469	626	-25	
MO106	MU1 Overlying	6/21/2018	10	98	143	-31	5.7	20	-71	472	626	-25	
MO107	MU1 Overlying	4/5/2018	---	102	110	-7	5.5	20	-73	456	502	-9	
MO107	MU1 Overlying	4/20/2018	15	100	110	-9	5.7	20	-71	454	502	-10	
MO107	MU1 Overlying	5/3/2018	13	102	110	-7	5.2	20	-74	459	502	-9	
MO107	MU1 Overlying	5/17/2018	14	102	110	-7	6.0	20	-70	454	502	-10	
MO107	MU1 Overlying	6/11/2018	25	102	110	-8	5.4	20	-73	458	502	-9	
MO107	MU1 Overlying	6/21/2018	10	100	110	-9	5.1	20	-75	464	502	-8	
MO108	MU1 Overlying	4/5/2018	---	99	118	-16	5.6	20	-72	472	513	-8	

Attachment 1a: MU1 Water Quality Data
2nd Quarter 2018
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	
MO108	MU1 Overlying	4/19/2018	14	99	118	-16	5.6	20	-72	472	513	-8	
MO108	MU1 Overlying	5/3/2018	14	98	118	-17	6.1	20	-70	474	513	-8	
MO108	MU1 Overlying	5/17/2018	14	101	118	-15	5.4	20	-73	471	513	-8	
MO108	MU1 Overlying	6/11/2018	25	99	118	-16	6.5	20	-68	473	513	-8	
MO108	MU1 Overlying	6/21/2018	10	102	118	-13	6.2	20	-69	481	513	-6	
MO109	MU1 Overlying	4/6/2018	---	109	120	-9	8.5	21	-60	508	567	-10	
MO109	MU1 Overlying	4/20/2018	14	110	120	-9	8.9	21	-57	506	567	-11	
MO109	MU1 Overlying	5/4/2018	14	107	120	-11	7.8	21	-63	508	567	-10	
MO109	MU1 Overlying	5/22/2018	18	106	120	-12	8.6	21	-59	506	567	-11	
MO109	MU1 Overlying	6/11/2018	20	111	120	-8	7.7	21	-63	512	567	-10	
MO109	MU1 Overlying	6/21/2018	10	114	120	-5	8.3	21	-60	524	567	-8	
MO110	MU1 Overlying	4/5/2018	---	97	128	-25	5.0	23	-78	420	533	-21	
MO110	MU1 Overlying	4/20/2018	15	95	128	-26	5.3	23	-77	419	533	-21	
MO110	MU1 Overlying	5/3/2018	13	96	128	-25	5.7	23	-75	419	533	-21	
MO110	MU1 Overlying	5/17/2018	14	93	128	-27	5.3	23	-77	420	533	-21	
MO110	MU1 Overlying	6/11/2018	25	98	128	-24	5.8	23	-75	429	533	-20	
MO110	MU1 Overlying	6/21/2018	10	97	128	-24	5.6	23	-76	435	533	-18	
MO111	MU1 Overlying	4/5/2018	---	116	115	1	11.3	20	-43	491	639	-23	
MO111	MU1 Overlying	4/20/2018	15	116	115	1	11.5	20	-42	491	639	-23	
MO111	MU1 Overlying	5/3/2018	13	115	115	0	10.2	20	-49	486	639	-24	
MO111	MU1 Overlying	5/17/2018	14	116	115	1	10.1	20	-49	482	639	-25	
MO111	MU1 Overlying	6/11/2018	25	113	115	-1	9.9	20	-51	488	639	-24	
MO111	MU1 Overlying	6/21/2018	10	112	115	-2	9.4	20	-53	485	639	-24	
MO112	MU1 Overlying	4/5/2018	---	110	252	-56	6.8	22	-69	430	541	-21	
MO112	MU1 Overlying	4/20/2018	15	110	252	-57	7.0	22	-68	420	541	-22	
MO112	MU1 Overlying	5/3/2018	13	106	252	-58	6.9	22	-69	427	541	-21	
MO112	MU1 Overlying	5/23/2018	20	106	252	-58	7.7	22	-65	425	541	-21	
MO112	MU1 Overlying	6/11/2018	19	112	252	-55	6.5	22	-70	428	541	-21	
MO112	MU1 Overlying	6/21/2018	10	111	252	-56	6.5	22	-71	430	541	-21	
MO113	MU1 Overlying	4/6/2018	---	106	121	-13	10.9	21	-48	469	484	-3	
MO113	MU1 Overlying	4/20/2018	14	105	121	-13	10.2	21	-51	468	484	-3	
MO113	MU1 Overlying	5/4/2018	14	105	121	-13	11.4	21	-46	475	484	-2	
MO113	MU1 Overlying	5/22/2018	18	103	121	-15	10.2	21	-51	479	484	-1	
MO113	MU1 Overlying	6/11/2018	20	109	121	-10	12.0	21	-43	485	484	0	
MO113	MU1 Overlying	6/21/2018	10	107	121	-11	12.3	21	-41	490	484	1	
MU101	MU1 Underlying	4/6/2018	---	108	157	-32	5.5	20	-72	543	653	-17	
MU101	MU1 Underlying	4/20/2018	14	106	157	-33	5.8	20	-71	543	653	-17	
MU101	MU1 Underlying	5/4/2018	14	109	157	-31	5.6	20	-72	546	653	-16	
MU101	MU1 Underlying	5/22/2018	18	111	157	-29	5.8	20	-71	543	653	-17	
MU101	MU1 Underlying	6/8/2018	17	106	157	-32	5.0	20	-75	545	653	-17	
MU101	MU1 Underlying	6/21/2018	13	108	157	-31	5.8	20	-71	547	653	-16	
MU102	MU1 Underlying	4/6/2018	---	103	119	-14	4.8	19	-75	426	507	-16	
MU102	MU1 Underlying	4/20/2018	14	104	119	-12	5.5	19	-71	426	507	-16	
MU102	MU1 Underlying	5/4/2018	14	105	119	-12	5.1	19	-73	432	507	-15	
MU102	MU1 Underlying	5/22/2018	18	101	119	-15	4.8	19	-75	425	507	-16	
MU102	MU1 Underlying	6/8/2018	17	145	119	22	5.3	19	-72	430	507	-15	
MU102	MU1 Underlying	6/21/2018	13	107	119	-10	5.0	19	-74	427	507	-16	
MU103	MU1 Underlying	4/6/2018	---	104	213	-51	5.7	20	-71	420	560	-25	
MU103	MU1 Underlying	4/20/2018	14	102	213	-52	5.0	20	-75	415	560	-26	
MU103	MU1 Underlying	5/4/2018	14	105	213	-51	5.9	20	-70	441	560	-21	
MU103	MU1 Underlying	5/22/2018	18	99	213	-54	5.6	20	-72	433	560	-23	
MU103	MU1 Underlying	6/8/2018	17	101	213	-53	5.2	20	-74	430	560	-23	
MU103	MU1 Underlying	6/21/2018	13	103	213	-51	4.8	20	-76	427	560	-24	
MU104B	MU1 Underlying	4/6/2018	---	99	159	-38	4.8	21	-77	428	572	-25	
MU104B	MU1 Underlying	4/20/2018	14	96	159	-40	5.1	21	-76	421	572	-26	
MU104B	MU1 Underlying	5/4/2018	14	97	159	-39	4.8	21	-77	431	572	-25	
MU104B	MU1 Underlying	5/22/2018	18	98	159	-38	4.9	21	-77	430	572	-25	
MU104B	MU1 Underlying	6/8/2018	17	104	159	-35	5.1	21	-76	428	572	-25	
MU104B	MU1 Underlying	6/21/2018	13	98	159	-38	5.7	21	-73	432	572	-24	
MU105	MU1 Underlying	4/5/2018	---	101	124	-19	5.5	19	-71	442	562	-21	
MU105	MU1 Underlying	4/20/2018	15	101	124	-18	5.6	19	-71	442	562	-21	
MU105	MU1 Underlying	5/3/2018	13	103	124	-17	5.7	19	-70	447	562	-20	
MU105	MU1 Underlying	5/17/2018	14	105	124	-16	6.0	19	-68	447	562	-20	

**Attachment 1a: MU1 Water Quality Data
2nd Quarter 2018
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	
MU105	MU1 Underlying	6/11/2018	25	104	124	-16	5.6	19	-70	447	562	-20	
MU105	MU1 Underlying	6/21/2018	10	105	124	-15	4.8	19	-75	448	562	-20	
MU106	MU1 Underlying	4/5/2018	---	100	137	-27	5.4	20	-73	441	522	-16	
MU106	MU1 Underlying	4/20/2018	15	100	137	-27	5.0	20	-75	459	522	-12	
MU106	MU1 Underlying	5/3/2018	13	102	137	-26	5.5	20	-72	464	522	-11	
MU106	MU1 Underlying	5/17/2018	14	99	137	-28	4.9	20	-75	456	522	-13	
MU106	MU1 Underlying	6/11/2018	25	100	137	-27	5.0	20	-75	460	522	-12	
MU106	MU1 Underlying	6/21/2018	10	105	137	-23	5.8	20	-71	463	522	-11	
MU107	MU1 Underlying	4/5/2018	---	104	136	-24	5.1	20	-75	467	556	-16	
MU107	MU1 Underlying	4/20/2018	15	101	136	-25	6.0	20	-70	464	556	-17	
MU107	MU1 Underlying	5/3/2018	13	100	136	-26	5.5	20	-72	474	556	-15	
MU107	MU1 Underlying	5/17/2018	14	99	136	-27	5.7	20	-72	465	556	-16	
MU107	MU1 Underlying	6/11/2018	25	101	136	-26	5.8	20	-71	463	556	-17	
MU107	MU1 Underlying	6/21/2018	10	102	136	-25	5.1	20	-75	475	556	-15	
MU107	MU1 Underlying	4/5/2018	---	110	136	-19	8.2	21	-61	495	615	-20	
KPW2	MU1 Underlying	4/19/2018	14	113	136	-17	6.1	21	-71	486	615	-21	
KPW2	MU1 Underlying	5/3/2018	14	103	136	-24	6.9	21	-67	487	615	-21	
KPW2	MU1 Underlying	5/17/2018	14	112	136	-18	8.4	21	-60	472	615	-23	
KPW2	MU1 Underlying	6/11/2018	25	116	136	-15	6.6	21	-69	502	615	-18	
KPW2	MU1 Underlying	6/21/2018	10	105	136	-23	6.0	21	-72	482	615	-22	
MU109	MU1 Underlying	4/6/2018	---	124	196	-37	12.3	23	-46	527	525	0	
MU109	MU1 Underlying	4/20/2018	14	115	196	-41	11.5	23	-50	529	525	1	
MU109	MU1 Underlying	5/4/2018	14	114	196	-42	12.1	23	-47	536	525	2	
MU109	MU1 Underlying	5/22/2018	18	113	196	-42	10.1	23	-56	525	525	0	
MU109	MU1 Underlying	6/11/2018	20	117	196	-40	11.4	23	-51	545	525	4	
MU109	MU1 Underlying	6/21/2018	10	125	196	-36	11.0	23	-52	547	525	4	
MU110	MU1 Underlying	4/5/2018	---	96	144	-33	5.9	24	-75	459	596	-23	
MU110	MU1 Underlying	4/20/2018	15	94	144	-35	6.5	24	-73	458	596	-23	
MU110	MU1 Underlying	5/3/2018	13	93	144	-36	6.3	24	-74	464	596	-22	
MU110	MU1 Underlying	5/17/2018	14	93	144	-36	7.3	24	-70	462	596	-22	
MU110	MU1 Underlying	6/11/2018	25	97	144	-32	6.9	24	-71	462	596	-22	
MU110	MU1 Underlying	6/21/2018	10	96	144	-34	5.7	24	-76	466	596	-22	
MU111	MU1 Underlying	4/5/2018	---	94	188	-50	5.4	22	-75	501	652	-23	
MU111	MU1 Underlying	4/20/2018	15	96	188	-49	5.0	22	-77	502	652	-23	
MU111	MU1 Underlying	5/3/2018	13	95	188	-50	5.1	22	-77	506	652	-22	
MU111	MU1 Underlying	5/17/2018	14	95	188	-50	5.0	22	-77	499	652	-23	
MU111	MU1 Underlying	6/11/2018	25	98	188	-48	5.8	22	-74	501	652	-23	
MU111	MU1 Underlying	6/21/2018	10	98	188	-48	5.8	22	-74	502	652	-23	
MU112	MU1 Underlying	4/5/2018	---	134	224	-40	5.3	24	-78	446	483	-8	
MU112	MU1 Underlying	4/20/2018	15	97	224	-57	5.9	24	-76	442	483	-8	
MU112	MU1 Underlying	5/3/2018	13	95	224	-57	5.6	24	-77	442	483	-8	
MU112	MU1 Underlying	5/17/2018	14	96	224	-57	5.5	24	-77	441	483	-9	
MU112	MU1 Underlying	6/11/2018	25	99	224	-56	4.8	24	-80	443	483	-8	
MU112	MU1 Underlying	6/21/2018	10	100	224	-55	4.9	24	-80	447	483	-7	
MU113	MU1 Underlying	4/6/2018	---	96	140	-32	5.0	25	-80	490	590	-17	
MU113	MU1 Underlying	4/20/2018	14	94	140	-33	5.3	25	-79	480	590	-19	
MU113	MU1 Underlying	5/4/2018	14	94	140	-33	5.2	25	-79	480	590	-19	
MU113	MU1 Underlying	5/22/2018	18	95	140	-32	5.4	25	-78	480	590	-19	
MU113	MU1 Underlying	6/11/2018	20	95	140	-32	6.2	25	-75	481	590	-18	
MU113	MU1 Underlying	6/21/2018	10	99	140	-30	5.6	25	-78	485	590	-18	
LC29M	Regional DE	10/7/2017	N/A	--	N/A	N/A	--	N/A	N/A	--	N/A	N/A	
MB-10	Regional DE	10/7/2017	N/A	--	N/A	N/A	--	N/A	N/A	--	N/A	N/A	

UCL : Upper Control Limit

* UCL calculated on a per-well basis

Italics (yellow highlight) : Indicates warning when result is > UCL but < 120% of UCL

Bold Italics (red highlight) : Indicates value > 120% of UCL

**Attachment 1b: MU2 Water Quality Data
2nd Quarter 2018
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	4/2/2018	---	99	116	-14	4.9	20	-76	480	515	-7	
M201	Ring	4/17/2018	15	101	116	-13	5.2	20	-74	486	515	-6	
M201	Ring	5/1/2018	14	100	116	-13	5.2	20	-74	481	515	-7	
M201	Ring	5/14/2018	13	98	116	-15	5.2	20	-74	473	515	-8	
M201	Ring	6/5/2018	22	100	116	-14	4.9	20	-75	483	515	-6	
M201	Ring	6/18/2018	13	100	116	-14	5.5	20	-73	489	515	-5	
M202	Ring	4/2/2018	---	96	98	-3	5.3	20	-73	390	584	-33	
M202	Ring	4/17/2018	15	96	98	-2	5.0	20	-75	400	584	-32	
M202	Ring	5/1/2018	14	97	98	-2	8.3	20	-58	403	584	-31	
M202	Ring	5/14/2018	13	97	98	-2	8.6	20	-56	394	584	-33	
M202	Ring	6/5/2018	22	97	98	-1	5.4	20	-73	417	584	-29	
M202	Ring	6/18/2018	13	98	98	-1	5.3	20	-73	429	584	-27	
M229	Ring	4/2/2018	---	102	111	-8	5.6	20	-72	514	666	-23	
M229	Ring	4/18/2018	16	101	111	-9	6.0	20	-70	515	666	-23	
M229	Ring	5/1/2018	13	102	111	-8	5.7	20	-71	512	666	-23	
M229	Ring	5/14/2018	13	104	111	-6	4.8	20	-76	505	666	-24	
M229	Ring	6/5/2018	22	102	111	-8	5.0	20	-75	513	666	-23	
M229	Ring	6/18/2018	13	106	111	-5	5.2	20	-74	522	666	-22	
M230	Ring	4/2/2018	---	108	116	-6	5.2	20	-74	528	667	-21	
M230	Ring	4/18/2018	16	108	116	-6	5.2	20	-74	533	667	-20	
M230	Ring	5/1/2018	13	105	116	-9	5.7	20	-72	529	667	-21	
M230	Ring	5/14/2018	13	108	116	-7	5.9	20	-70	524	667	-21	
M230	Ring	6/5/2018	22	108	116	-7	5.9	20	-70	533	667	-20	
M230	Ring	6/18/2018	13	109	116	-5	5.9	20	-71	536	667	-20	
M231A	Ring	4/2/2018	---	110	126	-13	6.3	21	-69	566	759	-25	
M231A	Ring	4/18/2018	16	113	126	-10	6.5	21	-68	570	759	-25	
M231A	Ring	5/1/2018	13	108	126	-14	5.7	21	-72	573	759	-25	
M231A	Ring	5/14/2018	13	110	126	-12	5.6	21	-73	565	759	-26	
M231A	Ring	6/5/2018	22	107	126	-15	6.1	21	-70	569	759	-25	
M231A	Ring	6/18/2018	13	112	126	-11	5.5	21	-73	572	759	-25	
M-FG213	Overlying	4/3/2018	---	106	117	-9	5.3	20	-74	421	443	-5	
M-FG213	Overlying	4/18/2018	15	104	117	-11	5.4	20	-73	422	443	-5	
M-FG213	Overlying	5/1/2018	13	106	117	-9	5.9	20	-70	418	443	-6	
M-FG213	Overlying	5/14/2018	13	108	117	-8	5.6	20	-72	418	443	-6	
M-FG213	Overlying	6/6/2018	23	107	117	-8	6.6	20	-67	421	443	-5	
M-FG213	Overlying	6/18/2018	12	110	117	-6	6.2	20	-69	420	443	-5	
M-FG214	Overlying	4/3/2018	---	104	117	-11	5.0	19	-74	381	399	-4	
M-FG214	Overlying	4/18/2018	15	100	117	-14	4.8	19	-75	372	399	-7	
M-FG214	Overlying	5/1/2018	13	103	117	-12	4.7	19	-76	383	399	-4	
M-FG214	Overlying	5/14/2018	13	103	117	-12	4.9	19	-75	380	399	-5	
M-FG214	Overlying	6/6/2018	23	104	117	-11	6.3	19	-67	393	399	-1	
M-FG214	Overlying	6/18/2018	12	103	117	-11	4.7	19	-76	389	399	-2	
M-FG215	Overlying	4/2/2018	---	99	160	-38	5.3	20	-73	394	677	-42	
M-FG215	Overlying	4/18/2018	16	102	160	-36	5.7	20	-71	394	677	-42	
M-FG215	Overlying	5/1/2018	13	97	160	-39	5.9	20	-71	392	677	-42	
M-FG215	Overlying	5/14/2018	13	97	160	-39	4.9	20	-76	390	677	-42	
M-FG215	Overlying	6/6/2018	23	97	160	-39	6.1	20	-69	397	677	-41	
M-FG215	Overlying	6/18/2018	12	98	160	-39	5.6	20	-72	396	677	-41	
M-HJ211	Interim Ring	4/2/2018	---	90	---	---	4.8	---	---	472	---	---	
M-HJ211	Interim Ring	4/17/2018	15	91	---	---	5.5	---	---	476	---	---	
M-HJ211	Interim Ring	5/1/2018	14	90	---	---	5.6	---	---	492	---	---	
M-HJ211	Interim Ring	5/14/2018	13	91	---	---	5.7	---	---	474	---	---	
M-HJ211	Interim Ring	6/5/2018	22	88	---	---	5.2	---	---	479	---	---	
M-HJ211	Interim Ring	6/18/2018	13	102	---	---	4.9	---	---	489	---	---	
M-HJ226	Interim Ring	4/2/2018	---	96	---	---	5.7	---	---	518	---	---	
M-HJ226	Interim Ring	4/17/2018	15	101	---	---	5.7	---	---	520	---	---	
M-HJ226	Interim Ring	5/1/2018	14	98	---	---	5.0	---	---	523	---	---	
M-HJ226	Interim Ring	5/14/2018	13	97	---	---	5.4	---	---	517	---	---	
M-HJ226	Interim Ring	6/5/2018	22	95	---	---	5.9	---	---	526	---	---	
M-HJ226	Interim Ring	6/18/2018	13	100	---	---	5.2	---	---	528	---	---	
M-HJ232	Interim Ring	4/2/2018	---	99	---	---	5.1	---	---	512	---	---	
M-HJ232	Interim Ring	4/17/2018	15	104	---	---	5.8	---	---	513	---	---	
M-HJ232	Interim Ring	5/1/2018	14	101	---	---	5.6	---	---	514	---	---	
M-HJ232	Interim Ring	5/14/2018	13	103	---	---	5.0	---	---	516	---	---	
M-HJ232	Interim Ring	6/5/2018	22	96	---	---	5.5	---	---	482	---	---	
M-HJ232	Interim Ring	6/21/2018	16	100	---	---	4.6	---	---	526	---	---	
M-HJ233	Interim Ring	4/2/2018	---	98	---	---	4.6	---	---	457	---	---	
M-HJ233	Interim Ring	4/17/2018	15	99	---	---	4.5	---	---	467	---	---	
M-HJ233	Interim Ring	5/1/2018	14	96	---	---	5.2	---	---	461	---	---	
M-HJ233	Interim Ring	5/14/2018	13	99	---	---	5.5	---	---	467	---	---	
M-HJ233	Interim Ring	6/5/2018	22	98	---	---	4.8	---	---	484	---	---	

**Attachment 1b: MU2 Water Quality Data
2nd Quarter 2018
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	
M-HJ233	Interim Ring	6/18/2018	13	102	---	---	5.0	---	---	498	---	---	
M-KM213	Underlying	4/3/2018	---	89	141	-37	5.2	20	-74	482	480	<i>1</i>	
M-KM213	Underlying	4/18/2018	15	89	141	-37	4.7	20	-76	481	480	<i>0</i>	
M-KM213	Underlying	5/1/2018	13	89	141	-37	5.4	20	-73	481	480	<i>0</i>	
M-KM213	Underlying	5/14/2018	13	92	141	-35	5.4	20	-72	478	480	<i>0</i>	
M-KM213	Underlying	6/6/2018	23	89	141	-37	6.3	20	-68	486	480	<i>1</i>	
M-KM213	Underlying	6/18/2018	12	126	141	-11	5.3	20	-73	486	480	<i>1</i>	
M-KM214	Underlying	4/3/2018	---	103	135	-23	5.2	20	-74	518	480	<i>8</i>	
M-KM214	Underlying	4/18/2018	15	102	135	-24	6.2	20	-69	515	480	<i>7</i>	
M-KM214	Underlying	5/1/2018	13	101	135	-25	5.6	20	-72	515	480	<i>7</i>	
M-KM214	Underlying	5/14/2018	13	106	135	-21	5.5	20	-72	506	480	<i>6</i>	
M-KM214	Underlying	6/6/2018	23	103	135	-23	6.7	20	-67	518	480	<i>8</i>	
M-KM214	Underlying	6/18/2018	12	104	135	-23	4.9	20	-75	521	480	<i>9</i>	
M-KM215	Underlying	4/2/2018	---	100	128	-22	5.7	20	-71	469	489	-4	
M-KM215	Underlying	4/18/2018	16	97	128	-24	5.0	20	-75	473	489	-3	
M-KM215	Underlying	5/1/2018	13	96	128	-25	4.8	20	-76	481	489	-2	
M-KM215	Underlying	5/14/2018	13	98	128	-24	5.1	20	-75	470	489	-4	
M-KM215	Underlying	6/5/2018	22	96	128	-25	6.1	20	-69	488	489	0	
M-KM215	Underlying	6/18/2018	13	100	128	-22	5.7	20	-72	478	489	-2	

UCL : Upper Control Limit

* UCL calculated on a per-well basis

Italics (yellow highlight) : Indicates warning when result is > UCL but < 120% of UCL

Bold Italics (red highlight) : Indicates value > 120% of UCL

Attachment 1c: Water Quality Data - QC
2nd Quarter 2018
Lost Creek ISR Project SUA-1598

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	Primary Sample Assay	RPD
M129	4/4/2018	Dup	M126	106	107	0	6.7	5.8	15	541	544	1
M129	4/18/2018	Dup	M117	100	99	1	5.6	5.6	1	504	508	1
M129	5/2/2018	Dup	M117	101	101	0	5.8	5.8	1	504	500	1
M129	5/16/2018	Dup	M116A	103	100	2	5.7	5.5	4	492	487	1
M129	6/6/2018	Dup	M116A	104	104	1	5.7	5.7	1	494	496	0
M129	6/19/2018	Dup	M116A	103	102	1	6.1	5.9	3	501	492	2
M130	4/4/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
M130	4/18/2018	Blank	N/A	6	N/A	N/A	0.0	N/A	N/A	9	N/A	N/A
M130	5/2/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M130	5/16/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M130	6/6/2018	Blank	N/A	4	N/A	N/A	0.0	N/A	N/A	14	N/A	N/A
M130	6/19/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
M131	4/4/2018	Dup	M127	110	109	1	6.1	7.3	17	567	570	1
M131	4/18/2018	Dup	M118	102	104	2	5.1	5.2	1	503	496	1
M131	5/2/2018	Dup	M118	104	102	1	5.6	5.4	3	498	498	0
M131	5/16/2018	Dup	M117	97	100	4	5.8	5.2	11	502	504	0
M131	6/6/2018	Dup	M117	103	103	1	5.1	5.9	13	507	509	0
M131	6/19/2018	Dup	M117	102	101	1	5.0	4.8	4	509	507	0
M132	4/4/2018	Blank	N/A	3	N/A	N/A	0.0	N/A	N/A	6	N/A	N/A
M132	4/18/2018	Blank	N/A	6	N/A	N/A	0.0	N/A	N/A	22	N/A	N/A
M132	5/2/2018	Blank	N/A	3	N/A	N/A	0.0	N/A	N/A	5	N/A	N/A
M132	5/16/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M132	6/6/2018	Blank	N/A	4	N/A	N/A	0.0	N/A	N/A	7	N/A	N/A
M132	6/19/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
MO121	4/5/2018	Dup	MO112	108	110	2	7.9	6.8	15	430	430	0
MO121	4/20/2018	Dup	MO110	94	95	1	5.7	5.3	7	423	419	1
MO121	5/3/2018	Dup	MO112	111	106	4	8.3	6.9	18	437	427	2
MO121	5/22/2018	Dup	MU104B	96	98	2	4.9	4.9	1	431	430	0
MO121	6/11/2018	Dup	MO109	109	111	1	8.1	7.7	6	515	512	1
MO121	6/20/2018	Dup	MO110	96	97	1	5.6	5.6	1	432	435	1
MO122	4/5/2018	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	3	N/A	N/A
MO122	4/20/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
MO122	5/3/2018	Blank	N/A	6	N/A	N/A	0.0	N/A	N/A	33	N/A	N/A
MO122	5/22/2018	Blank	N/A	5	N/A	N/A	0.0	N/A	N/A	18	N/A	N/A
MO122	6/11/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
MO122	6/21/2018	Blank	N/A	4	N/A	N/A	0.0	N/A	N/A	14	N/A	N/A
MU123	4/5/2018	Dup	MO110	95	97	1	5.5	5.0	8	430	420	2
MU123	4/20/2018	Dup	MO112	107	110	3	6.6	7.0	5	422	420	0
MU123	5/3/2018	Dup	MO110	94	96	3	5.1	5.7	12	432	419	3
MU123	5/22/2018	Dup	MO109	149	106	34	7.4	8.6	14	512	506	1
MU123	6/11/2018	Dup	MO110	100	98	2	5.8	5.8	0	432	429	1
MU123	6/20/2018	Dup	MO107	103	100	2	5.7	5.1	13	462	464	0
MU124	4/5/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
MU124	4/20/2018	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
MU124	5/3/2018	Blank	N/A	7	N/A	N/A	0.0	N/A	N/A	22	N/A	N/A
MU124	5/22/2018	Blank	N/A	3	N/A	N/A	0.0	N/A	N/A	4	N/A	N/A
MU124	6/11/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
MU124	6/21/2018	Blank	N/A	7	N/A	N/A	0.0	N/A	N/A	21	N/A	N/A
M232	4/2/2018	Dup	M202	97	96	2	5.9	5.3	12	396	390	2
M232	4/17/2018	Dup	M202	97	96	1	5.8	5.0	15	400	400	0
M232	5/1/2018	Dup	M202	94	97	2	5.2	8.3	45	407	403	1
M232	5/14/2018	Dup	M202	97	97	1	5.0	8.6	54	404	394	3
M232	6/5/2018	Dup	M202	94	97	3	5.8	5.4	7	426	417	2
M232	6/18/2018	Dup	M202	100	98	2	5.6	5.3	6	430	429	0
M233	4/2/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M233	4/17/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
M233	5/1/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M233	5/14/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M233	6/5/2018	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	5	N/A	N/A
M233	6/18/2018	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	5	N/A	N/A
M234	4/2/2018	Dup	M201	104	99	5	5.1	4.9	5	485	480	1
M234	4/17/2018	Dup	M201	100	101	2	4.9	5.2	6	489	486	1
M234	5/1/2018	Dup	M201	98	100	2	4.7	5.2	10	487	481	1
M234	5/14/2018	Dup	M201	99	98	0	5.0	5.2	4	487	473	3
M234	6/5/2018	Dup	M201	96	100	4	4.7	5.3	12	488	483	1
M234	6/18/2018	Dup	M201	104	100	3	5.4	5.5	2	493	489	1
M235	4/2/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M235	4/17/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M235	5/1/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M235	5/14/2018	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	3	N/A	N/A

**Attachment 1c: Water Quality Data - QC
2nd Quarter 2018
Lost Creek ISR Project SUA-1598**

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	Primary Sample Assay	RPD
M235	6/5/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M235	6/18/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
M-FG232	4/3/2018	Dup	M-FG214	103	104	1	5.1	5.0	3	378	381	1
M-FG232	4/18/2018	Dup	M-FG215	100	102	2	5.8	5.7	2	393	394	0
M-FG232	5/1/2018	Dup	M-KM215	96	96	1	5.3	4.8	10	473	481	2
M-FG232	5/14/2018	Dup	M-KM215	100	98	2	5.4	5.1	6	475	470	1
M-FG232	6/5/2018	Dup	M-KM215	139	96	36	5.4	6.1	12	520	488	6
M-FG232	6/18/2018	Dup	M-KM215	102	100	2	5.6	5.7	1	500	478	4
M-FG233	4/3/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M-FG233	4/18/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M-FG233	5/1/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M-FG233	5/14/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M-FG233	6/5/2018	Blank	N/A	2	N/A	N/A	1.1	N/A	N/A	1	N/A	N/A
M-FG233	6/18/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M-KM230	4/3/2018	Dup	M-KM214	101	103	2	6.1	5.2	17	517	518	0
M-KM230	4/18/2018	Dup	M-KM215	100	97	2	4.7	5.0	7	473	473	0
M-KM230	5/1/2018	Dup	M-FG215	100	97	2	5.1	5.9	15	386	392	2
M-KM230	5/14/2018	Dup	M-FG215	146	97	40	5.7	4.9	16	391	390	0
M-KM230	6/5/2018	Dup	M-FG215	93	97	4	6.0	6.1	2	392	397	1
M-KM230	6/18/2018	Dup	M-FG215	99	98	1	5.7	5.6	3	401	396	1
M-KM231	4/3/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
M-KM231	4/18/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M-KM231	5/1/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	2	N/A	N/A
M-KM231	5/14/2018	Blank	N/A	2	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M-KM231	6/5/2018	Blank	N/A	1	N/A	N/A	0.0	N/A	N/A	1	N/A	N/A
M-KM231	6/18/2018	Blank	N/A	4	N/A	N/A	0.0	N/A	N/A	12	N/A	N/A

RPD: Relative Percent Difference