CAMECO RESOURCES
CROW BUTTE OPERATION

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April 22, 2019

USPS PRIORITY MAIL
SIGNATURE CONFIRMATION

ATTN: Document Control Desk, Director
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Source Materials License SUA-1534
Docket No. 40-8943
Monitor Well Excursion – SM8-28

Attn: Document Control Desk:

On April 18, 2019, during routine biweekly water sampling of Cameco Resources, Crow Butte Operation (CBO) shallow monitor well SM8-28, the multiple parameter upper control limits (MCL) for conductivity and alkalinity were exceeded. As required by License Condition 11.5 of Source Materials License SUA-1534, a second sample was collected within 24 hours and analyzed for the three excursion indicator parameters. The results of the second sample exceeded the MCL's for conductivity and alkalinity.

CBO notified Mr. Ron Burrows of the excursion by phone on April 18, 2019, as required in License Conditions 11.5 and 11.6. Laboratory results for the sample analysis for SM8-28 are attached. It should be noted that the confirming sample was collected on the afternoon of April 18, 2018, the same date as the routine sample which was collected in the morning. Because these two samples were collected on the same day, the database used to store the sampling data only pulls the high data point for each parameter recorded on that date when creating graphs and datasheets. The attached graph and datasheet display the high data points for the two samples collected on April 18, 2019, not the results from the two distinct samples collected on that day. The routine sample results were 287 mg/L alkalinity, 9.6 mg/L chloride, and 707 µMho/cm conductivity. The confirming sample results were 288 mg/L alkalinity, 9.3 mg/L chloride, and 707 µMho/cm conductivity. In addition to the laboratory datasheet, graphs are attached for the three excursion indicator parameters and water levels that cover the period from July 26, 2018 through April 18, 2019.

NM5520

The region around the CBO facility was subject to a major winter storm on March 14 and 15, 2019, in which the site received an estimated 18" of snowfall accompanied by up to 90 mph wind gusts. As a result, a significant amount of snowmelt impacted the area around the well. This was followed by a second significant winter storm on April 10 and 11, 2019. The snowmelt from this storm provided additional impact to this part of the well field. SM8-28 was placed on excursion status due to similar circumstances in 2010, 2011, 2015, 2016, and 2018. All of these excursions self-corrected as conditions normalized.

In accordance with License Condition 11.5, CBO has increased the sampling frequency for SM8-28 to weekly until three consecutive weekly samples are below the exceeded UCLs. CBO will continue weekly sampling for an additional three weeks after this goal has been achieved as required by CBO's NDEQ Class III UIC Permit requirements. If the well has not exceeded the UCLs after these samples, it will be returned to normal status.

If you have any questions or require any further information, please do not hesitate to call me at (308) 665-2215 ext 117.

Sincerely,
CAMECO RESOURCES
CROW BUTTE OPERATION

Walter D. Nelson

Walt Nelson
SHEQ Coordinator

Enclosures: As Stated

cc: NRC – Deputy Director
CBO – File

ec: CR – Electronic File

Cameco

Crow Butte Project

Monitor Well Laboratory Report

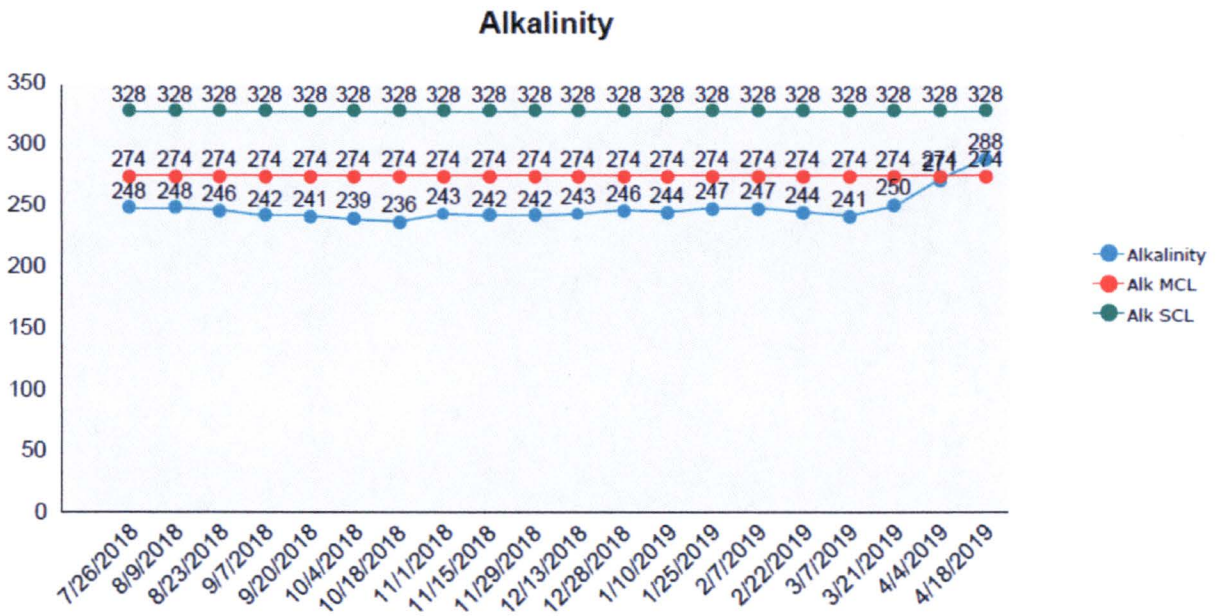
Sample Date: 04/18/2019

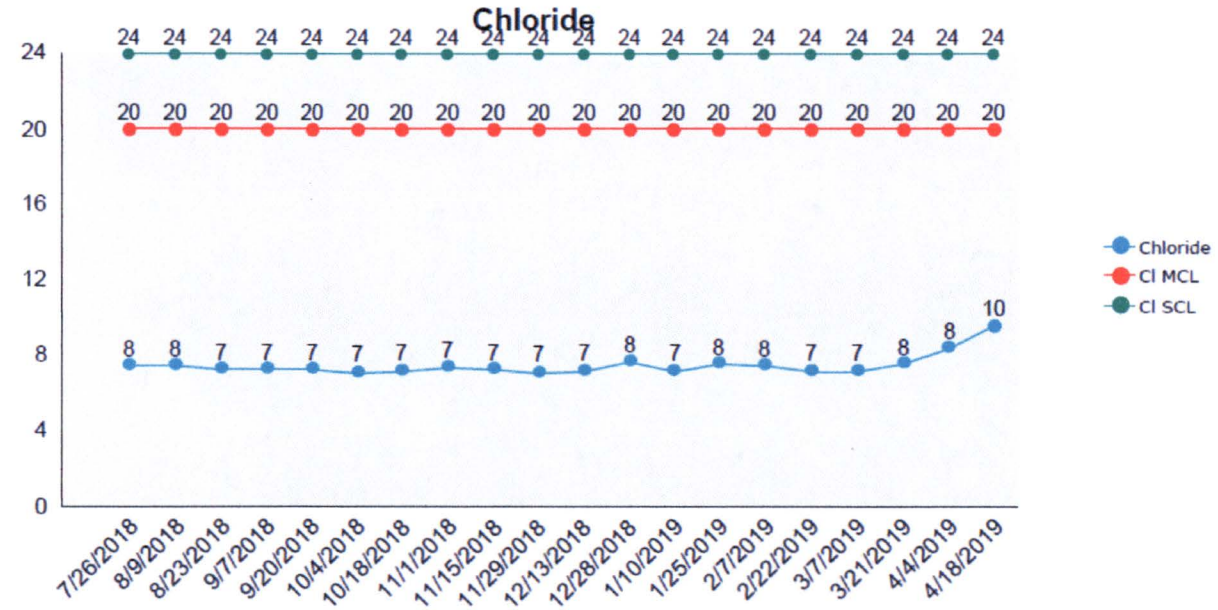
Analysis Date: 04/18/2019

Well ID	Alkalinity (mg/L)	Alk SCL	Alk MCL	Conductivity (µMho/cm)	Cond SCL	Cond MCL	Chloride (mg/L)	Cl SCL	Cl MCL
CM06-025	300	433	361	1896	2952	2460	181	317	264
CM06-026	301	448	373	1889	2952	2460	183	338	282
CM06-028	318	449	374	1830	2894	2412	176	307	256
CM06-029	307	448	373	1895	3024	2520	180	321	268
CM06-030	313	459	383	1852	2952	2460	178	328	274
CM06-031	315	464	386	1876	2851	2376	177	301	251
CM06-032	312	461	384	1884	2981	2484	179	292	244
CM08-027	315	475	396	1832	2794	2328	175	314	262
CM08-028	315	480	400	1836	2650	2208	173	264	220
SM06-023	261	314	262	570	691	576	7.7	23	19
SM06-024	244	310	258	555	672	560	8.2	24	20
SM06-025	217	324	270	558	696	580	13	24	20
SM06-026	206	308	257	478	726	605	8	24	20
SM06-027	233	317	264	524	677	564	7.7	23	20
SM06-028	290	351	293	685	778	648	11	24	20
SM08-026	227	317	264	596	720	600	8.3	24	20
SM08-027	237	353	294	527	706	588	7.4	22	19
SM08-028	288	328	274	707	801	667	9.6	24	20
SM08-029	261	338	282	664	763	636	12	26	22
SM08-030	206	284	236	481	672	560	8.7	38	32
SM08-031	233	350	292	517	750	625	6.7	28	23
SM11-016	142	213	178	303	461	384	2.4	23	19
SM11-017	141	210	175	295	432	360	2.8	21	17
SM11-018	138	207	173	307	475	396	4.4	28	23
SM11-019	139	204	170	314	533	444	1.9	35	29
SM11-020	161	235	196	407	590	492	5.9	23	19
SM11-022	166	288	240	463	773	644	7.4	32	27
SM11-023	166	246	205	399	662	552	4.4	32	27
SM11-024	152	233	194	382	619	516	4.2	26	21
SM11-025	156	235	196	394	590	492	2.9	21	18
SM11-026	146	228	190	340	547	456	2.5	22	18

SM8-28
4/22/2019

SM08-028





SM8-28
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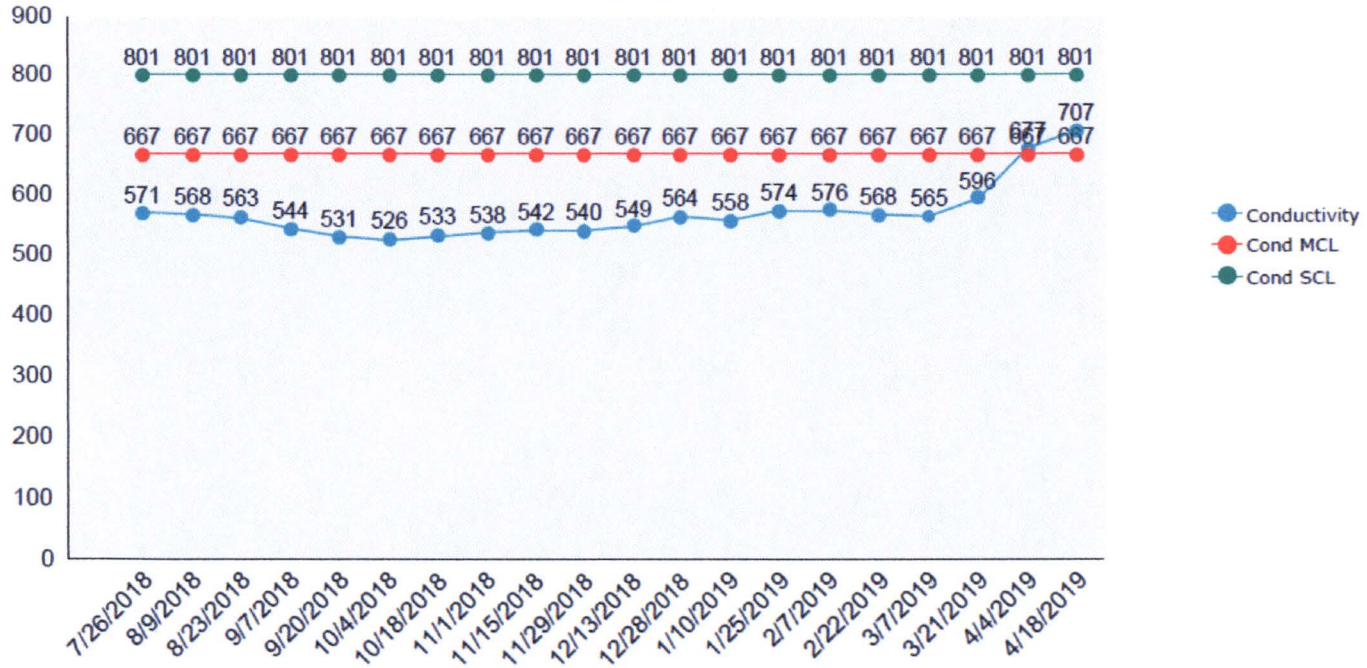
Conductivity



Water Level