

CAMECO RESOURCES CROW BUTTE OPERATION



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May 27, 2011

Mr. Keith I McConnell, Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
Mailstop T8-F5
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Source Materials License SUA-1534
Docket No. 40-8943
SM 8-6 Monitor Well Excursion

Dear Mr. McConnell:

On May 24, 2011 during routine biweekly water sampling of Cameco Resources, Crow Butte Operation (CBO) shallow monitor well SM8-6, the single parameter upper control limit (SCL) for conductivity was exceeded. As required by License Condition 11.2 of Source Materials License SUA-1534, a second sample was collected within 48 hours and analyzed for the three excursion indicator parameters. The results of the second sample exceeded the SCL for conductivity and the multiple parameter upper control limit (MCL) for chloride.

CBO notified Mr. Ronald Burrows of the excursion by phone at 3:15 PM on May 25, 2011 as required in License Condition 9.2. Laboratory results for the sample analysis for SM8-6 are attached. In addition, graphs are attached for the three excursion indicator parameters and water levels that cover the period from September 27, 2010 to May 25, 2011.

CBO believes that this apparent excursion is due to increased groundwater levels caused by the significant amount of precipitation received in the area in recent weeks and is not caused by mining activity. In the week leading up to the excursion, 3-4 inches of rain fell in the area, and an additional .75 inch fell on the evening of May 22, 2011. Additionally, this conclusion is supported by the following indications:

1. Water level in the well has increased approximately 4 feet this spring and is currently within approximately 10 feet of the top of the well casing. SM8-6 is located in Mine Unit 8 in an area of high groundwater levels. Groundwater quality in this area is under the influence of surface water. SM8-6 also went on excursion during the wet spring weather of 2010 when the water level in the well rose.
2. The chloride concentration has increased from normal concentrations of 8-10 mg/l to 20 mg/l. If the

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monitor well were affected by an excursion of mining solutions, it would be expected that the chloride concentration would be much higher due to its high concentration in the lixiviant (which typically contains chloride concentrations in excess of 500 mg/l) and its mobility in the environment.

3. At least 18 other shallow monitor wells located in Mine Units 6, 8, and 10 are also showing increases in water levels, conductivity, and chloride concentrations. All of these wells are located in close proximity to English Creek. Historical operating data indicates that the excursion parameters are affected by high water levels in the shallow monitor wells located along English Creek.

In accordance with License Condition 11.2, CBO will increase the sampling frequency for SM8-6 to weekly until three consecutive weekly samples are below the exceeded UCL. CBO will then continue weekly sampling for an additional three weeks after this goal has been achieved. If the well has not exceeded the UCL, 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 114.

Sincerely,
CAMECO RESOURCES
CROW BUTTE OPERATION

Larry Teahon
SHEQ Manager

Enclosures: As Stated

cc: Mr. Ronald Burrows – Project Manager
CBO - File
ec: CR – Cheyenne Office

Sample Date
Analysis Date

5/24/2011
5/24/2011

Crow Butte Project Monitor Well Laboratory Report

Well ID	Alkalinity			Conductivity			Chloride		
	(mg/L)	Alk SCL	Alk MCL	(µmho/cm)	Cond SCL	Cond MCL	(mg/L)	Cl SCL	Cl MCL
SM11-3	148	210	175	340	490	408	1.7	20	17
SM11-4	142	200	167	310	446	372	1.3	20	17
SM11-5	144	204	170	330	475	396	1.7	20	17
SM11-6	144	207	173	330	490	408	3.2	25	21
SM4-1	159	248	206	370	772	643	2.4	52	43
SM4-2	196	513	393	660	1256	1039	13	127	88
SM4-5A	199	367	306	550	1236	1030	11	106	88
SM6-20	235	323	269	780	717	598	35	26	22
SM8-1	234	374	312	530	763	636	6	25	21
SM8-10	232	331	276	590	749	624	8.7	24	20
SM8-11	226	323	269	560	792	660	8	24	20
SM8-12	230	323	269	570	834	695	8.1	25	20
SM8-13	223	328	274	550	880	733	11	31	26
SM8-14	223	325	271	560	720	600	11	24	20
SM8-15	219	305	254	530	789	658	7.8	35	29
SM8-16	220	331	276	530	828	690	7.9	24	20
SM8-2	237	353	294	530	778	648	5.3	24	20
SM8-3	225	331	276	510	720	600	5.9	24	20
SM8-4	223	323	269	520	819	683	7.8	25	21
SM8-5	242	346	288	650	749	624	12	23	19
SM8-6	236	328	274	860	734	612	16	23	19
SM8-7	240	348	290	620	763	636	9.3	23	19
SM8-8	237	340	283	520	864	720	5.1	24	20
SM8-9	236	353	294	530	886	738	6	23	19
SM9-1	173	255	212	440	648	540	5.4	31	26

Sample Date 5/25/2011
 Analysis Date 5/25/2011

Crow Butte Project Monitor Well Laboratory Report

Well ID	Alkalinity			Conductivity			Chloride		
	(mg/L)	Alk SCL	Alk MCL	(µmho/cm)	Cond SCL	Cond MCL	(mg/L)	Cl SCL	Cl MCL
SM10-13	233	350	292	550	778	648	9	30	25
SM10-14A	242	366	305	580	806	672	9.6	29	24
SM10-15	242	353	294	560	763	636	9.1	28	23
SM10-2	228	338	282	540	763	636	8	24	20
SM10-3	244	386	322	570	821	684	12	24	20
SM10-4	236	346	288	540	778	648	7.9	24	20
SM10-5	237	350	292	540	763	636	6.9	23	19
SM10-6	319	501	418	830	1123	936	15	33	28
SM10-7	279	403	336	730	965	804	13	33	27
SM10-8	275	403	336	670	907	756	13	31	26
SM10-9	238	389	324	550	835	696	8.4	28	23
SM11-10	159	233	194	330	478	398	1.8	21	18
SM11-11	151	236	197	360	504	420	3.6	21	17
SM11-12	145	219	182	340	518	432	5.5	27	22
SM11-13	143	215	179	310	461	384	2.4	25	21
SM11-14	140	207	173	320	475	396	4.4	26	21
SM11-15	139	203	169	330	490	408	7.9	31	26
SM11-7	143	207	173	320	475	396	4.1	26	22
SM11-9	153	226	188	320	461	384	1.1	20	16
SM4-3	192	361	301	650	1251	1043	12	38	32
SM4-4	211	266	222	640	1099	916	12	62	52
SM8-6	234	328	274	900	734	612	20	23	19

Alkalinity

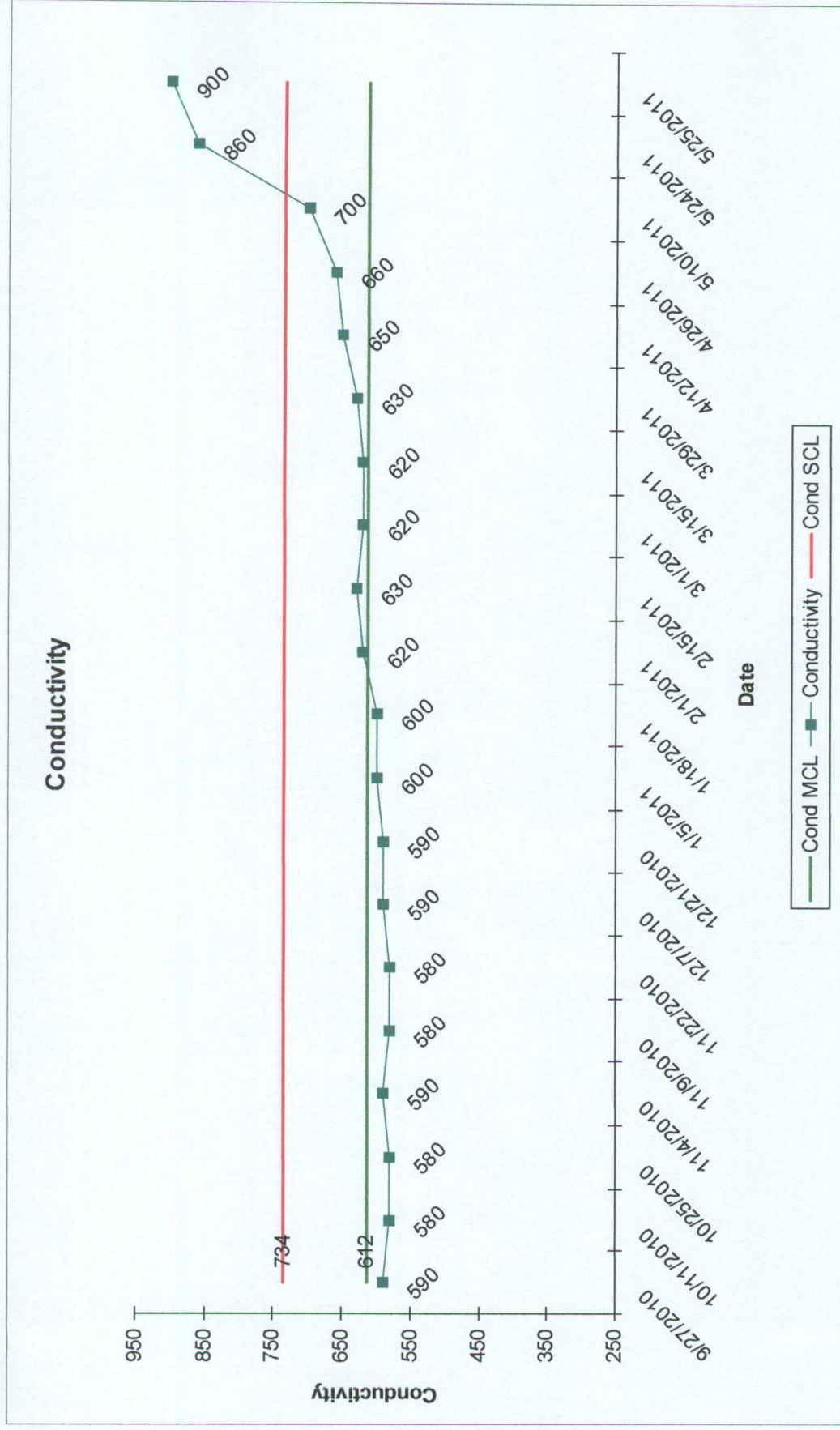
Alkalinity

Date

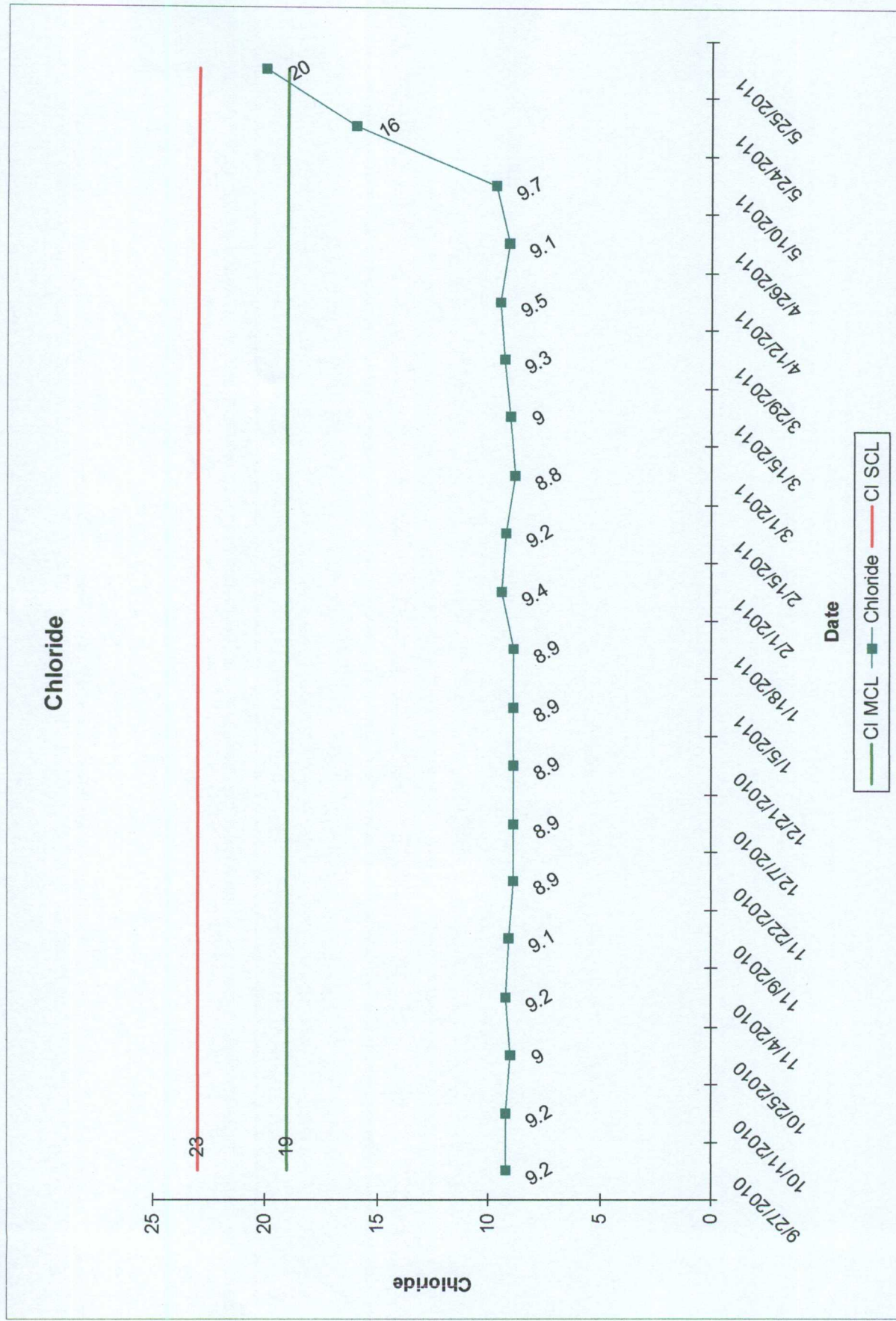
Alk MCL — Alkalinity — Alk SCL

Date	Alkalinity (mg/L)
9/27/2010	238
10/11/2010	238
10/25/2010	238
11/4/2010	235
11/19/2010	234
11/22/2010	234
12/7/2010	237
12/21/2010	236
1/5/2011	235
1/18/2011	233
2/1/2011	235
2/15/2011	237
3/1/2011	238
3/15/2011	239
3/29/2011	240
4/12/2011	238
4/26/2011	238
5/10/2011	240
5/24/2011	240
5/25/2011	234

SM8-6



SM8-6



SM8-6

