

**CAMECO RESOURCES
CROW BUTTE OPERATION**



86 Crow Butte Road
P.O. Box 169
Crawford, Nebraska 69339-0169

(308) 665-2215
(308) 665-2341 – FAX

April 16, 2010

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 April 12, 2010 during routine biweekly water sampling of Cameco Resources, Crow Butte Operation (CBO) shallow monitor well SM8-6, the single parameter upper control limit (UCL) for conductivity was exceeded. As required by License Condition 11.2 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 also exceeded the single UCL for conductivity.

CBO left a voice mail to notify Mr. Ronald Burrows of the excursion at 11:10 AM on April 13, 2010 as required in License Condition 9.2. Mr. Burrows was also notified by email at this time. 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 August 3, 2009 to April 13, 2010.

CBO believes that this apparent excursion is due to increased groundwater levels caused by the significant amount of precipitation and snow melt at the facility this spring and is not caused by mining activity. This conclusion is supported by the following indications:

1. Water level in the well has increased approximately 2 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 near the springs that form the source of English Creek. Groundwater quality in this area is under the influence of surface water.
2. The chloride concentration has increased from normal concentrations of 7-8 mg/l to 11 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. Conductivity measurements in the well have increased from 550 $\mu\text{mhos/cm}$ to 790 $\mu\text{mhos/cm}$. Again, this level would be expected to be much higher if the well were impacted by lixiviant (which typically has conductivity measurements in the range of 5000 $\mu\text{mhos/cm}$).

3. Seventeen 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 many of 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
Manager of Safety, Health, Environment, and Quality

Enclosures: As Stated

cc: Mr. Ronald Burrows - NRC
Mr. Joe Brister - Denver Office
CBO File

Crow Butte Project

Monitor Well Laboratory Report

Sample Date 4/12/2010
 Analysis Date 4/12/2010

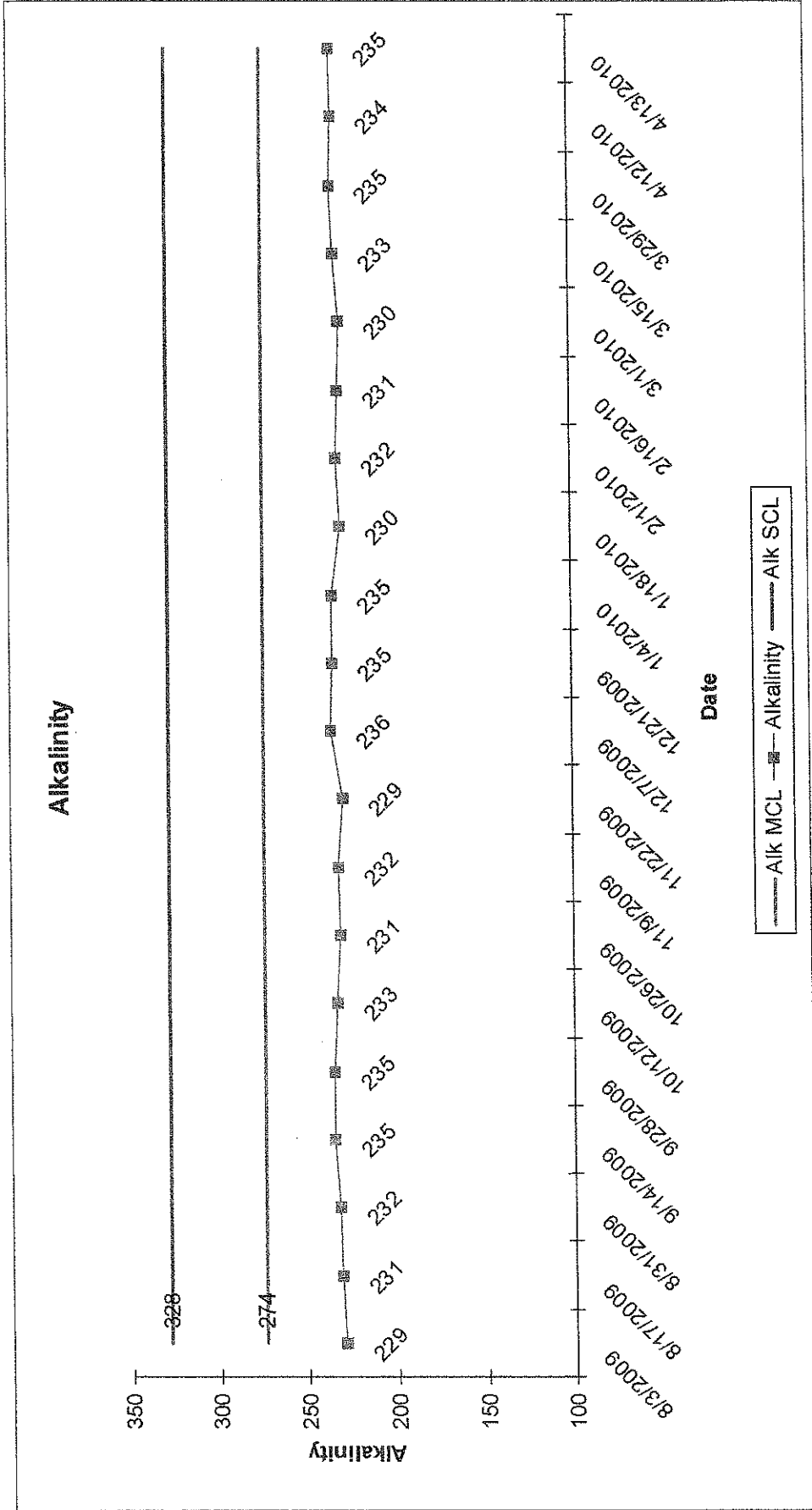
Well ID	Alkalinity			Conductivity			Chloride		
	(mg/L)	Alk SCL	Alk MCL	(µmho/cm)	Cond SCL	Cond MCL	(mg/L)	Cl SCL	Cl MCL
SM5-25	175	264	220	480	724	604	7.4	31	26
SM6-11	211	318	265	500	691	576	8.8	24	20
SM6-12	242	348	290	510	736	613	6.7	23	19
SM6-13	237	360	300	540	768	640	5.9	26	21
SM6-14	207	301	251	560	936	780	14	58	48
SM6-15	204	321	268	550	842	702	13	34	28
SM6-16	218	317	264	450	840	700	3.7	31	26
SM6-18	200	305	254	560	837	697	15	33	27
SM6-19	210	297	247	500	698	582	7.8	27	22
SM6-21	214	312	260	580	713	594	15	25	21
SM6-22	215	310	258	470	674	562	6.1	22	18
SM8-1	235	374	312	510	763	636	5.8	25	21
SM8-2	238	353	294	510	778	648	5.3	24	20
SM8-3	225	331	276	500	720	600	6.1	24	20
SM8-4	230	323	269	510	819	683	7.6	25	21
SM8-5	240	346	288	600	749	624	10	23	19
SM8-6	234	328	274	780	734	612	11	23	19

Sample Date 4/13/2010
 Analysis Date 4/13/2010

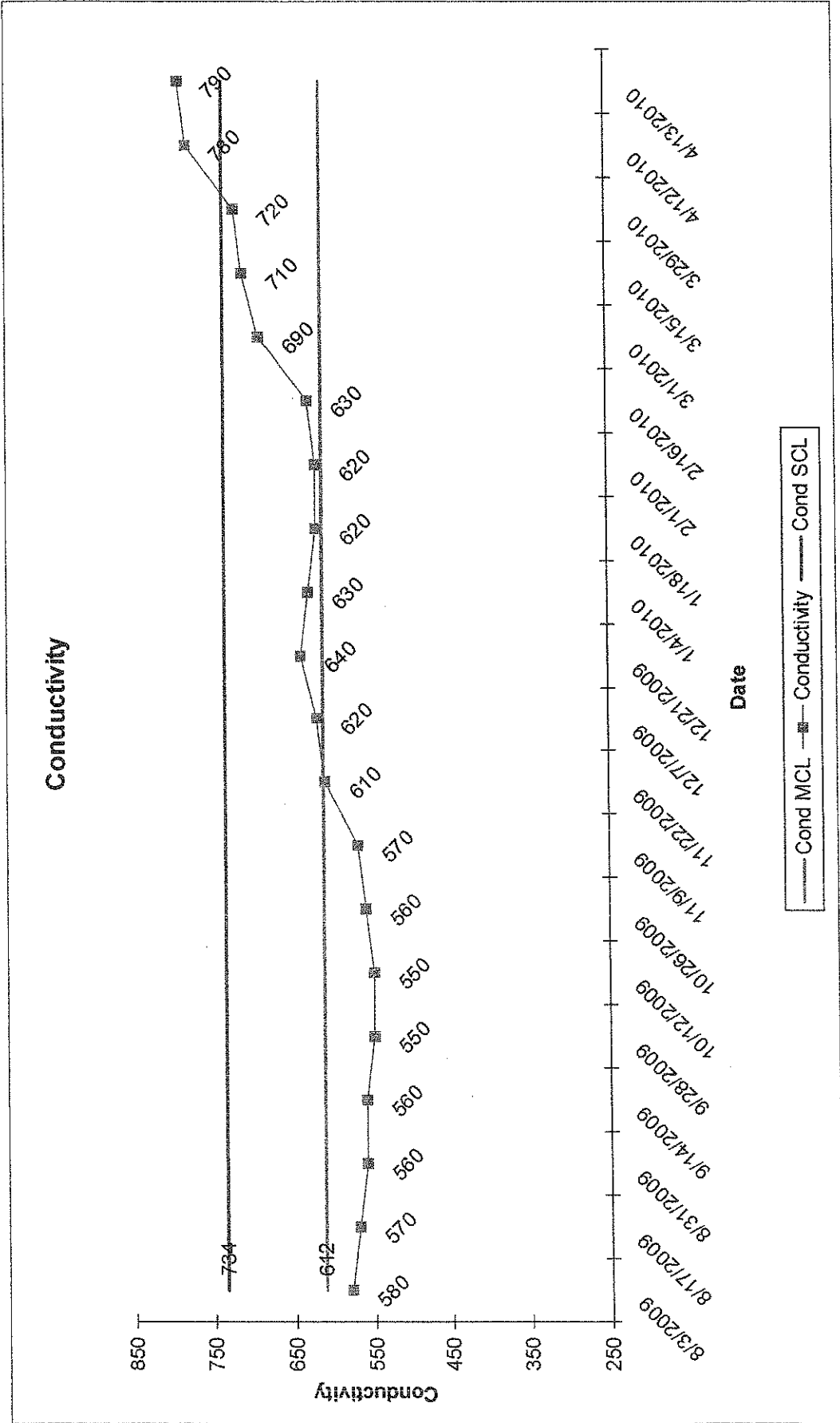
Crow Butte Project Monitor Well Laboratory Report

Well ID	Alkalinity			Conductivity			Chloride		
	(mg/L)	Alk SCL	Alk MCL	(µmho/cm)	Cond SCL	Cond MCL	(mg/L)	Cl SCL	Cl MCL
SM5-1	236	363	302	620	1032	860	14	57	47
SM5-2	192	287	239	460	714	595	6.5	27	22
SM5-3	228	351	293	600	1048	874	14	81	68
SM5-4	209	327	272	580	973	811	20	66	55
SM5-5	237	367	306	610	1041	868	12	65	54
SM5-6	215	324	270	580	922	768	14	47	39
SM5-7	214	323	269	580	932	776	10	41	34
SM5-8	208	312	260	570	840	700	13	32	27
SM6-20	214	323	269	630	717	598	22	26	22
SM8-10	227	331	276	610	749	624	8.9	24	20
SM8-11	221	323	269	540	792	660	7.5	24	20
SM8-12	229	323	269	560	834	695	7.7	25	20
SM8-13	221	328	274	540	880	733	12	31	26
SM8-14	219	325	271	570	720	600	13	24	20
SM8-15	215	305	254	520	789	658	7.7	35	29
SM8-16	216	331	276	520	828	690	7.9	24	20
SM8-6	235	328	274	790	734	612	11	23	19
SM8-7	233	348	290	620	763	636	8.6	23	19
SM8-8	235	340	283	510	864	720	5.5	24	20
SM8-9	232	353	294	510	886	738	5.4	23	19

SM8-6

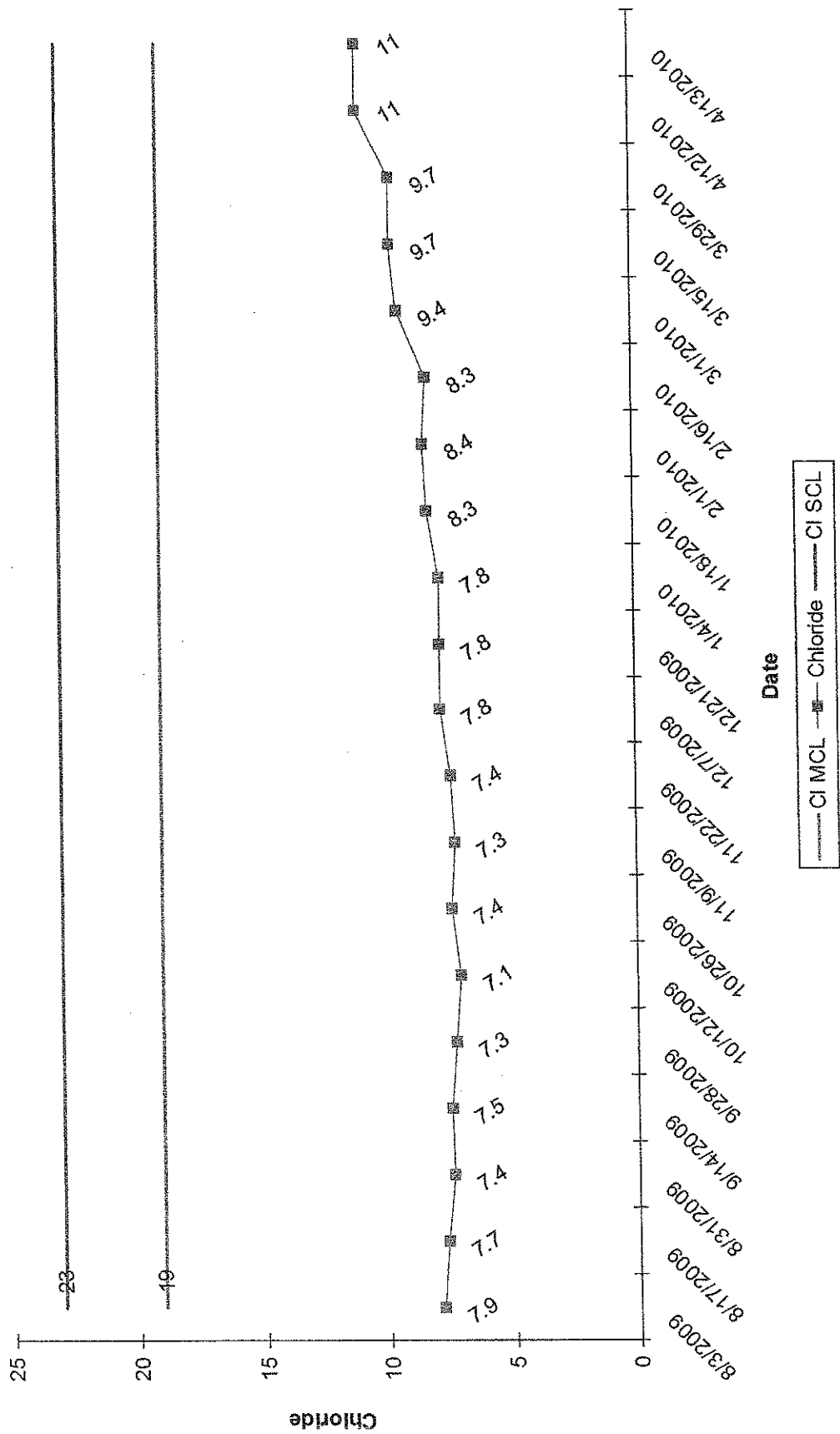


SM8-6



SM8-6

Chloride



SM8-6

