CAMECO RESOURCES
CROW BUTTE OPERATION

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

(308) 665-2215
(308) 665-2341 – FAX

May 29, 2015

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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 – SM8-21

Attn: Document Control Desk:

On May 28, 2015 during routine biweekly water sampling of Cameco Resources, Crow Butte Operation (CBO) shallow monitor well SM8-21, exceeded the multiple parameter upper control limit (MCL) for alkalinity and the single parameter upper control limit (SCL) for conductivity. As required by License Condition 11.5 of Source Materials License SUA-1534, a second sample was collected from SM8-21 within 48 hours and analyzed for the three excursion indicator parameters. The results of the second sample also exceeded the excursion control parameters as described above.

CBO notified Mr. Ron Burrows of the excursion by voice mail at 12:50 p.m. on May 29, 2015 as required in License Conditions 11.5 and 11.6. Laboratory results for the sample analysis for SM8-21 are attached. In addition, graphs are attached for the three excursion indicator parameters and water levels that cover the period from September 17, 2014, to May 29, 2015.

CBO believes that the apparent excursion is due to increased groundwater levels caused by the 5+ inches of rain and 20" inches of snow received during May. This conclusion is supported by the following indications:

1. The water level has increased steadily throughout the spring, with a marked increase during the last two weeks. The well is located in an area of high groundwater near the

NMSS01

springs that form the source of English Creek. Groundwater quality in this area is under the influence of surface water.

2. While the excursion indicators have increased significantly, the levels still do not approach the levels found in mining solution.

3. Eleven other shallow monitor wells located in Mine Units 6, 8 and 10 are also showing increases in water levels and one or more of the indicator parameters. In the past two weeks, SM6-23, SM6-28, SM8-6, and SM8-28 were placed on excursion status due to the same circumstances. 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 11.5, CBO has increased the sampling frequency for SM8-21 to weekly until three consecutive weekly samples are below the exceeded UCLs. Also, per the requirements of License Condition 11.12, CBO will test weekly for natural uranium. 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 114.

Sincerely,
CAMECO RESOURCES
CROW BUTTE OPERATION

Larry Teahon

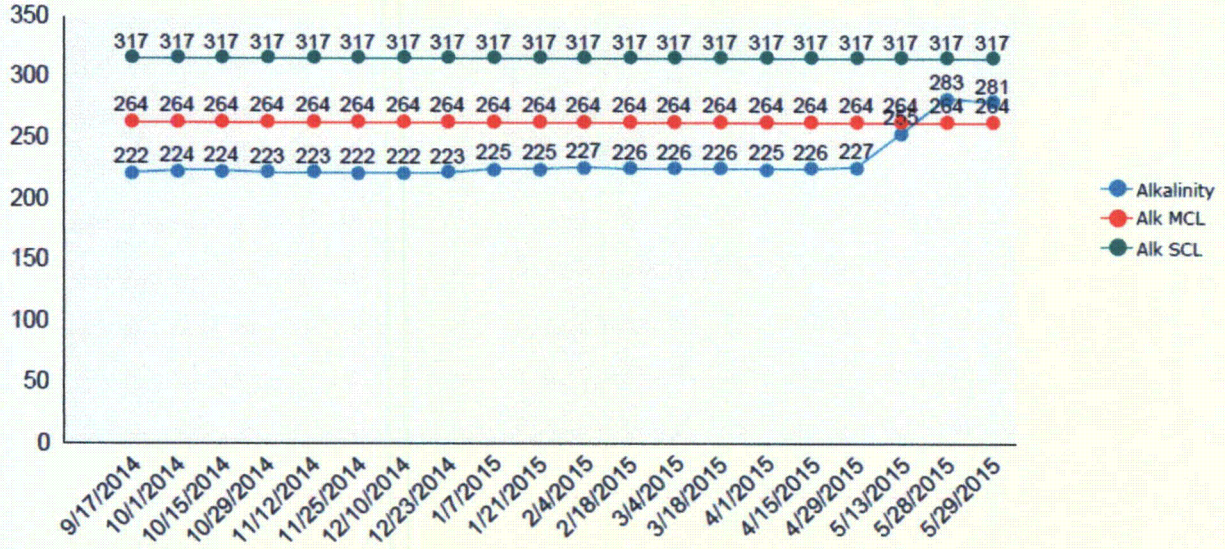
Larry Teahon
SHEQ Manager

Enclosures: As Stated

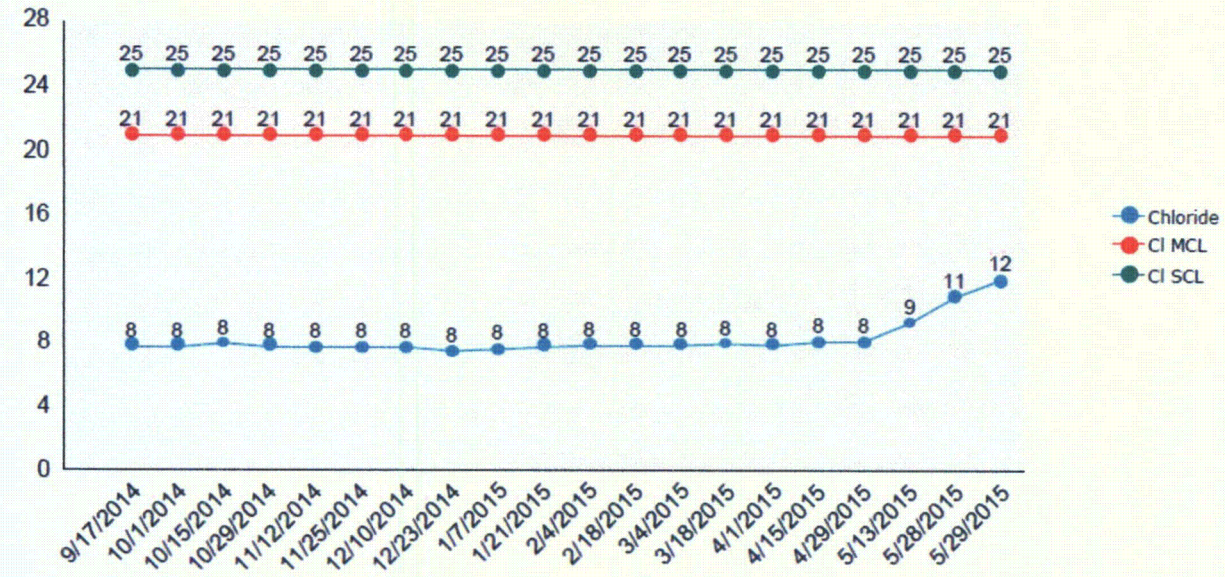
cc: NRC – Deputy Director
CBO - File
ec: CR – Casper Office

CAMECO RESOURCES
CROW BUTTE OPERATION
86 Crow Butte Road
Crawford, NE 69339-0169
SM 08-021

Alkalinity

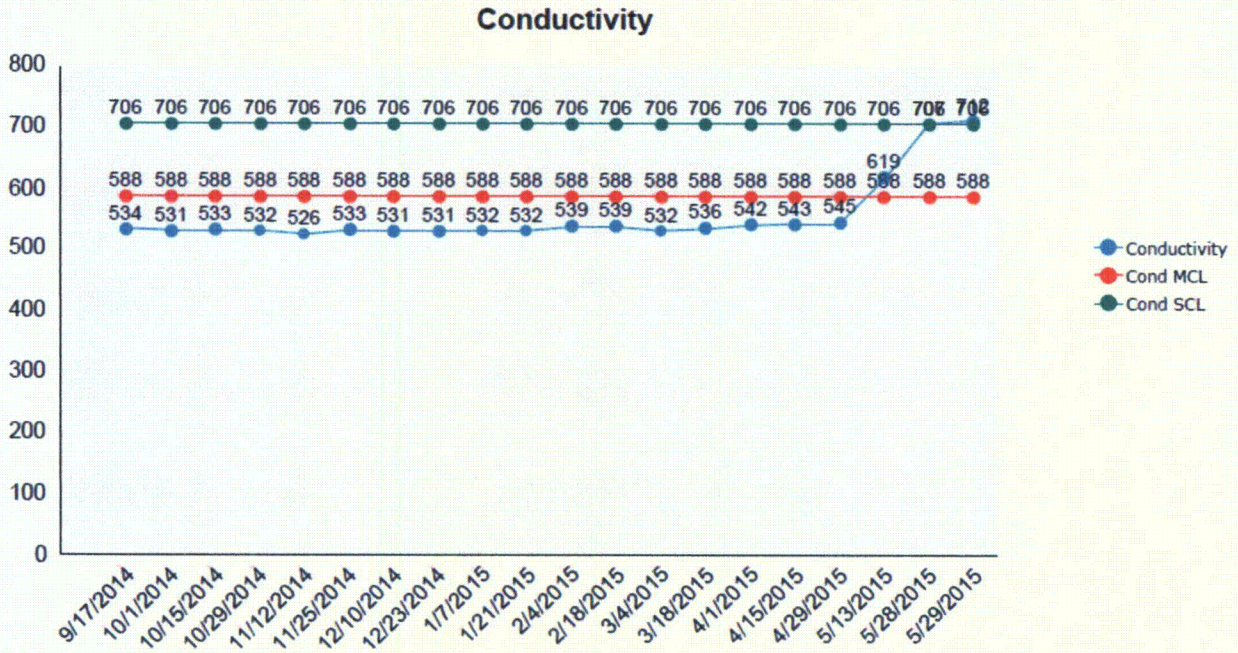


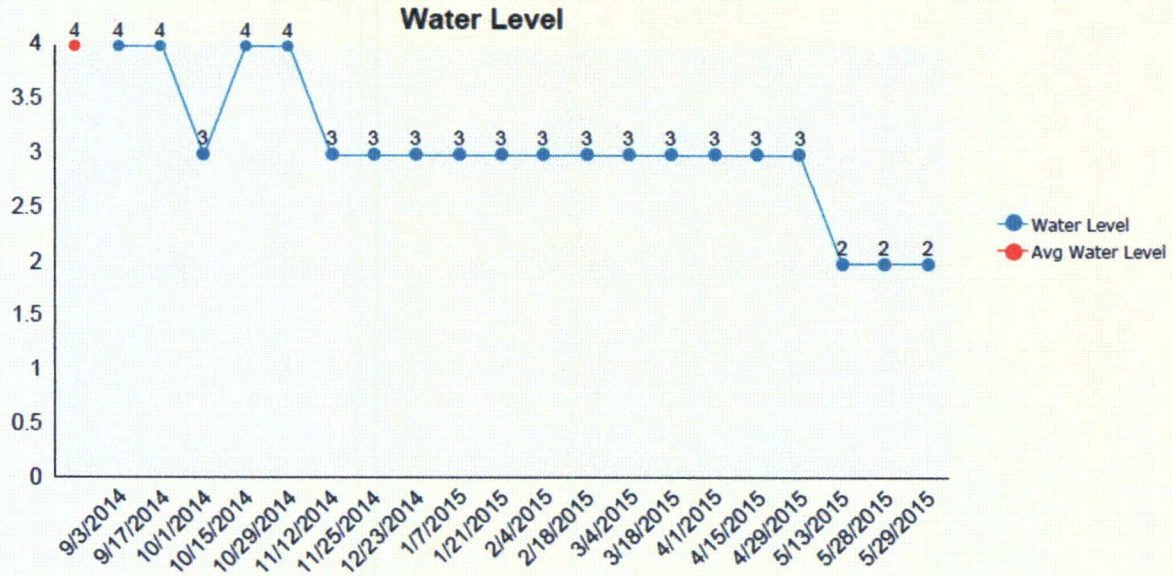
Chloride



5-29-2015

CAMECO RESOURCES
CROW BUTTE OPERATION
86 Crow Butte Road
Crawford, NE 69339-0169
SM 08-021





5-29-2015

Cameco

Crow Butte Project

Monitor Well Laboratory Report

Sample Date: 05/29/2015

Analysis Date: 05/29/2015

Well ID	Alkalinity (mg/L)	Alk SCL	Alk MCL	Conductivity (µMho/cm)	Cond SCL	Cond MCL	Chloride (mg/L)	Cl SCL	Cl MCL
CM05-012	**302**	456	380	**1888**	2982	2485	**179**	323	269
CM05-013	**291**	373	311	**1879**	3149	2624	**174**	386	322
CM06-001	**294**	432	360	**1879**	3168	2640	**176**	334	278
CM06-002	**304**	436	364	**1934**	2822	2352	**180**	279	233
CM06-003	**304**	441	367	**1912**	2808	2340	**178**	269	224
CM06-004	**300**	441	367	**1946**	2837	2364	**183**	289	241
CM06-005	**296**	416	347	**1969**	2923	2436	**180**	294	245
CM06-006	**299**	444	370	**1926**	2894	2412	**175**	301	251
CM06-007	**290**	403	336	**1935**	2822	2352	**180**	281	234
CM06-008	**301**	445	371	**1920**	2923	2436	**173**	305	254
SM06-001	**210**	325	271	**539**	903	752	**7.2**	47	39
SM06-002	**211**	291	242	**550**	1008	840	**11**	85	71
SM06-003	**203**	295	246	**543**	844	703	**10**	43	36
SM06-004	**209**	310	258	**527**	804	670	**8.4**	32	27
SM06-005	**215**	314	262	**520**	770	642	**6.7**	26	22
SM06-006	**226**	334	278	**477**	711	593	**3.4**	24	20
SM06-007	**230**	343	286	**496**	779	649	**6.3**	39	32
SM06-008	**207**	311	259	**492**	770	642	**7.3**	36	30
SM06-009	**226**	336	280	**486**	815	679	**6.4**	51	42
SM06-010	**205**	317	264	**488**	838	698	**8.2**	35	29
SM06-017	**237**	353	294	**486**	798	665	**3.9**	42	35
SM08-021	**281**	317	264	**712**	706	588	**12**	25	21

Cameco

Crow Butte Project

Monitor Well Laboratory Report

Sample Date: 05/28/2015

Analysis Date: 05/28/2015

Well ID	Alkalinity (mg/L)	Alk SCL	Alk MCL	Conductivity (µMho/cm)	Cond SCL	Cond MCL	Chloride (mg/L)	Cl SCL	Cl MCL
BOW96-001	221	314	262	503	791	659	7	24	20
CM07-010	298	454	378	1874	2877	2398	181	297	247
CM08-019	318	461	384	1814	2909	2424	167	278	232
CM08-020	321	467	389	1812	3038	2532	167	305	254
CM08-021	321	449	374	1831	2952	2460	169	261	217
CM08-022	323	461	384	1830	2966	2472	169	266	222
CM08-026	320	467	389	1827	2650	2208	170	266	222
CM09-012	304	444	370	1799	2866	2388	176	321	268
CM09-013	302	442	368	1807	2707	2256	177	279	233
CM09-014	300	461	384	1827	2923	2436	186	327	272
CM09-015	301	432	360	1818	2736	2280	176	279	233
CM09-016	312	444	370	1855	2678	2232	182	268	223
CM09-017	308	441	367	1832	2678	2232	181	268	223
CM09-018	303	445	371	1829	2794	2328	177	294	245
CM09-019	302	454	378	1837	2952	2460	178	315	263
CM09-020	299	431	359	1853	2779	2316	180	279	233
CM10-028	320	461	384	1835	2736	2280	168	265	221
CM10-029	321	461	384	1823	2808	2340	169	281	234
CM10-030	323	454	378	1826	2678	2232	168	253	211
CM10-031	318	446	372	1834	2678	2232	167	253	211
SM06-023	268	314	262	578	691	576	8	23	19
SM06-028	320	351	293	783	778	648	15	24	20
SM08-017	236	331	276	539	848	707	7.3	24	20
SM08-018	228	317	264	529	816	680	8.1	25	21
SM08-019	230	340	283	535	827	689	7.3	25	21
SM08-020	220	314	262	517	806	672	7.5	25	21
SM08-021	283	317	264	707	706	588	11	25	21
SM08-022	234	324	270	593	829	691	9.2	25	20
SM08-023	237	317	264	580	808	673	8.8	27	23
SM08-024	227	317	264	605	720	600	11	24	20
SM08-025	247	324	270	663	720	600	12	24	20
SM09-006	145	216	180	311	461	384	2.7	22	19