CAMECO RESOURCES
CROW BUTTE OPERATION

86 Crow Butte Road
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(308) 665-2215
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April 23, 2019

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

Subject: Quarterly Excursion Monitoring Report
Source Materials License No. SUA-1534, Docket No. 40-8943

Dear Sir or Madam:

Enclosed please find one copy of the Excursion Monitoring Report for the Crow Butte Uranium Project. The report is provided in accordance with License Condition 11.1(A) of Source Materials License SUA-1534. This report covers the first quarter of 2019.

If you have any questions concerning the report, please feel free to call me at (308) 665-2215 ext. 117.

Sincerely,
CAMECO RESOURCES
CROW BUTTE OPERATION

Walter D. Nelson
SHEQ Coordinator

cc: Deputy Director, Division of Decommissioning
Uranium Recovery and Waste Programs
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
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CBO – File

ec: CR – Electronic File

NMSS20

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CROW BUTTE URANIUM PROJECT

EXCURSION MONITORING REPORT

for

First QUARTER, 2019

USNRC Source Materials License SUA 1534

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CROW BUTTE OPERATION

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P.O. Box 169 **(308) 665-2215**
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Excursion Monitoring and Corrective Actions

On November 29, 2018, well CM11-11 was placed on excursion status when the results of a confirmation sample exceeded the upper control limits. The well remained on excursion status at the end of the quarter, however, the last weekly sample collected during the quarter (December 26, 2018) was below the excursion criteria. The well was removed from excursion status on January 9, 2019. When the excursion indicator parameters initially began to climb, wellfield flow balances were adjusted. This was ineffective in correcting the excursion. CBO identified additional wells in the area that were screened in a different zone of the Chadron aquifer, and these wells were ultimately successful in correcting the excursion.

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 wellfield. This caused the excursion indicator parameters to rise in a number of shallow monitor wells, particularly those located in the northern portion of the wellfield.

As a result of the snowmelt runoff, SM10-28A was placed on excursion status on March 26, 2019 when the confirming samle results exceeded the single control limit (SCL) for alkalinity and conductivity. Upon inspection, it was discovered that there was a hole within 10' of the wellhead that may have provided conduit for accelerated infilitration of snowmelt to the screened interval of the well. Bentonite chips were used to seal this hole. With no further action, the well is currently testing below the excursion limits.

SM8-25 was placed on excursion status on March 28, 2019, when the confirming sample results exceeded the SCL for conductivity. This well was also impacted by the snowmelt from the March14 and 15, 2019 storm. As conditions have dried out, the parameters in this well are trending downward.

A summary of the weekly excursion indicator parameters and laboratory reports are included in Appendix A and Appendix B respectively.

Appendix A

Summary of

Weekly Excursion Indicator Parameter Values

First Quarter, 2019

Submitted by:
Crow Butte Resources, Inc.
P.O. Box 169
Crawford, NE 69339

Permit No. SUA-153

NRC
Excursion Monitoring Report
Quarter 1 of 2019

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

Well ID	Alkalinity			Conductivity			Chloride		
	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
BOW96-001	222	227	225	501	517	509	7.4	9.6	7.9
CM02-005	359	366	363	2106	2162	2137	206	212	210
CM02-006	259	263	261	904	969	938	56	61	58.5
CM02-007	258	261	259	1021	1066	1046	71	74	72.5
CM03-005	300	303	302	1890	1955	1922	183	189	185.8
CM03-006	301	303	302	1880	1951	1918	181	188	183.8
CM04-001	307	313	310	1793	1852	1827	175	180	177.7
CM04-002	310	315	313	1821	1876	1856	177	180	178.7
CM04-003	307	311	309	1817	1871	1848	173	180	176.7
CM04-004	319	325	323	1869	1930	1901	176	183	180
CM05-001	308	317	314	1739	1792	1768	158	163	160.4
CM05-002	302	310	308	1808	1861	1836	175	180	177.3
CM05-003	306	315	311	1810	1863	1839	175	180	178.7
CM05-004	310	317	315	1825	1876	1850	178	181	180.3
CM05-005	306	311	309	1815	1866	1841	175	179	177.3
CM05-006	304	310	307	1799	1870	1839	176	179	177.4
CM05-007	304	309	307	1790	1870	1839	174	181	177.3
CM05-008	310	313	312	1841	1897	1872	176	179	178.3
CM05-009	302	309	306	1816	1882	1854	175	181	177.9
CM05-010	295	298	297	1835	1906	1879	173	179	176.4
CM05-011	307	315	311	1850	1936	1904	178	183	180.3
CM05-012	298	305	302	1835	1906	1872	179	187	181
CM05-013	294	302	298	1844	1907	1877	177	181	179.1
CM05-018	298	308	303	1863	1926	1891	180	184	182.3

CM05-019	302	309	305	1776	1837	1804	163	168	166
CM05-020	328	362	337	1897	2098	1973	179	204	187
CM05-021	303	307	304	1868	1934	1903	180	185	182.3
CM05-022	302	305	304	1864	1933	1902	178	185	181.8
CM05-023	299	303	301	1857	1926	1895	179	185	181.5
CM05-024	300	305	303	1870	1948	1914	180	184	181.3
CM05-025	295	300	297	1877	1948	1915	170	175	172.5
CM05-026	301	307	304	1876	1960	1926	181	186	183.3
CM05-027	302	306	304	1884	1958	1926	182	187	184.2
CM06-001	294	298	296	1812	1879	1848	174	181	176.3
CM06-002	297	300	299	1860	1919	1894	178	183	179.6
CM06-003	296	301	298	1851	1919	1892	175	179	177.6
CM06-004	299	303	301	1869	1926	1900	176	180	178
CM06-005	291	294	293	1879	1954	1921	175	180	178
CM06-006	300	308	303	1883	1936	1912	175	180	177.7
CM06-007	280	285	283	1904	1967	1937	175	180	177.1
CM06-008	293	297	295	1876	1937	1908	173	178	175.4
CM06-009	298	308	302	1865	1938	1910	176	181	179
CM06-010	295	299	297	1877	1949	1923	175	183	179.2
CM06-012	302	308	304	1878	1934	1903	181	184	182.3
CM06-013	300	306	303	1872	1938	1904	181	185	182
CM06-014	295	308	300	1870	1941	1897	179	186	181
CM06-015	294	301	299	1886	1940	1911	178	185	180
CM06-016A	296	303	301	1832	1929	1886	177	181	179.3
CM06-017	304	311	307	1866	1924	1892	178	181	179.8
CM06-018	304	311	308	1861	1914	1888	178	181	179.7
CM06-019	305	314	310	1859	1912	1884	178	180	179.5
CM06-025	304	308	306	1843	1897	1875	179	184	181.2
CM06-026	306	309	308	1840	1896	1871	179	184	180.3

CM06-028	318	324	321	1785	1835	1812	172	178	174
CM06-029	309	313	311	1840	1904	1878	177	180	178.8
CM06-030	315	320	318	1804	1857	1834	174	181	176.5
CM06-031	317	321	319	1817	1869	1849	175	183	178.2
CM06-032	316	321	318	1831	1882	1860	175	180	177
CM07-010	294	304	299	1836	1895	1868	185	189	186.4
CM07-011	290	298	296	1852	1918	1887	183	187	185.3
CM07-012	289	297	295	1857	1918	1890	182	186	184.1
CM07-013	289	297	295	1875	1932	1909	181	190	183.7
CM07-014	292	300	296	1880	1953	1925	180	186	182.4
CM07-015	297	305	302	1878	1947	1922	183	190	184.7
CM07-016	306	317	312	1909	2005	1965	185	193	188.3
CM08-001	290	293	292	1895	1958	1931	174	179	177.2
CM08-002	282	291	285	1874	1933	1910	174	181	178
CM08-003	289	296	292	1869	1934	1908	176	184	180.7
CM08-004	296	299	298	1851	1936	1906	179	181	180.2
CM08-005	288	292	290	1863	1912	1895	179	186	181.8
CM08-006	301	304	302	1862	1923	1902	178	184	181.2
CM08-007	308	314	311	1863	1913	1894	180	183	181.2
CM08-008	319	322	321	1875	1940	1918	184	189	185.8
CM08-009	314	318	317	1805	1872	1849	173	177	175.2
CM08-010	312	317	315	1794	1856	1831	175	177	176.2
CM08-011	313	319	317	1805	1854	1837	173	177	175.2
CM08-012	320	327	323	1819	1875	1857	173	177	174.3
CM08-019	316	323	320	1776	1842	1809	170	173	170.9
CM08-020	316	327	321	1775	1831	1803	168	174	170.3
CM08-021	317	323	321	1790	1840	1815	169	175	171.9
CM08-022	319	326	323	1792	1842	1817	167	174	170.6
CM08-026	314	319	317	1790	1840	1814	167	174	171.1
CM08-027	319	323	321	1790	1844	1823	170	174	172.3

CM08-028	318	324	321	1789	1841	1818	170	174	171.7
CM09-008	296	301	298	1760	1818	1790	172	175	173.3
CM09-009	305	307	306	1740	1803	1779	173	179	175.7
CM09-010	302	306	304	1731	1789	1767	173	176	174.8
CM09-011	304	307	305	1745	1809	1787	174	180	177.5
CM09-012	301	306	304	1765	1816	1793	176	182	178.9
CM09-013	297	302	300	1767	1814	1792	174	180	176.7
CM09-014	302	309	304	1775	1842	1811	179	187	181.6
CM09-015	302	307	304	1799	1866	1833	176	181	178.7
CM09-016	298	308	305	1784	1839	1814	178	185	180.6
CM09-017	298	307	305	1786	1846	1817	178	182	179.7
CM09-018	297	305	301	1780	1840	1814	177	183	180.6
CM09-019	298	311	303	1795	1853	1827	180	185	182
CM09-020	292	302	298	1811	1869	1842	180	184	181.3
CM10-001	318	322	320	1804	1864	1845	171	178	174
CM10-002	320	334	327	1826	1917	1871	173	182	176.3
CM10-003	314	318	316	1814	1870	1850	174	181	177
CM10-004	326	334	329	1855	1940	1903	182	189	186.2
CM10-005	342	343	343	1961	2025	1996	202	210	203.7
CM10-006	318	322	320	1808	1854	1837	169	173	170.7
CM10-007	319	324	322	1807	1859	1840	168	172	170.8
CM10-008	319	329	325	1803	1867	1835	168	185	175.7
CM10-009	312	323	320	1779	1856	1823	168	179	172.3
CM10-010	349	380	369	2010	2092	2048	189	210	199.4
CM10-011	321	331	328	1770	1823	1799	166	171	167.3
CM10-012	338	354	347	1809	1890	1844	172	177	174
CM10-013	348	358	354	1728	1782	1755	165	172	167.6
CM10-014	349	358	355	1716	1777	1750	165	171	167.3
CM10-015	326	336	333	1751	1814	1786	160	165	162

CM10-016	311	317	315	1799	1853	1829	159	166	161.6
CM10-017	321	327	325	1805	1869	1842	162	171	164.4
CM10-020	323	339	332	1787	1855	1821	166	176	169.2
CM10-021	314	323	320	1782	1837	1811	162	170	166.3
CM10-022	319	333	324	1786	1840	1819	162	171	165
CM10-023	321	326	322	1789	1844	1823	164	167	165.7
CM10-024	319	325	323	1798	1851	1830	165	172	167.8
CM10-025	319	325	322	1786	1845	1820	166	173	168.8
CM10-026	318	322	320	1783	1840	1818	165	170	167.5
CM10-027	314	319	317	1787	1848	1823	167	173	169.8
CM10-028	316	321	319	1790	1850	1822	169	176	171.7
CM10-029	316	321	319	1796	1851	1826	167	173	170.3
CM10-030	320	327	324	1801	1853	1828	166	174	170.6
CM10-031	315	323	320	1794	1843	1819	167	173	169.6
CM10-032	315	319	317	1813	1870	1846	160	164	162
CM10-033	339	347	342	1754	1797	1782	164	169	165.7
CM10-034	344	351	347	1782	1856	1826	173	178	175
CM11-001	301	305	303	1790	1853	1834	175	179	177.2
CM11-002A	299	303	302	1795	1850	1831	174	179	177.3
CM11-003	317	326	320	1841	1944	1894	179	186	181.5
CM11-004	301	305	303	1778	1846	1821	173	178	174.8
CM11-005	301	304	303	1780	1839	1818	174	177	175
CM11-006	300	303	302	1767	1840	1812	173	176	174
CM11-007	295	306	301	1769	1834	1810	172	175	173.3
CM11-008	306	309	308	1809	1870	1851	174	179	175.3
CM11-009	298	301	299	1771	1843	1816	168	179	171.5
CM11-010	301	303	302	1766	1829	1807	169	173	171.5
CM11-011	306	391	340	1860	2112	1946	175	202	185.3
CM11-012	302	307	304	1756	1816	1793	169	172	171
CM11-013	302	306	304	1748	1806	1782	171	174	172.5

CM11-014	299	306	304	1754	1797	1777	172	173	172.7
CM11-015	297	300	298	1740	1786	1768	169	175	172.2
CM11-016	302	304	303	1737	1782	1764	172	175	173
CM11-017	305	310	308	1741	1788	1770	169	174	172
CM11-018	306	312	309	1742	1794	1772	172	176	174.3
CM11-019	302	305	304	1748	1797	1774	173	175	173.7
LJ013P	311	327	321	1260	1313	1290	98	109	102
PR008	315	326	322	1234	1275	1259	93	98	94.7
PR015	284	293	290	1084	1117	1104	78	85	80.4
SM02-001	188	193	190	514	529	523	14	15	14.4
SM02-002	166	172	168	448	464	457	11	11	11
SM02-003	197	200	198	527	551	543	15	16	15.6
SM03-001	199	212	207	648	665	658	12	12	12
SM03-002	176	183	179	429	443	439	3.3	3.8	3.6
SM03-003	174	182	178	442	453	449	5.6	6	5.8
SM04-001	153	160	157	356	363	360	2.5	2.9	2.7
SM04-002	190	197	194	614	628	623	14	15	14.3
SM04-003	182	188	185	599	616	610	12	12	12
SM04-004	207	212	209	605	625	618	13	14	13.2
SM04-005A	196	200	198	522	542	531	12	13	12.2
SM04-006	263	271	268	635	652	646	13	14	13.7
SM04-007	173	182	178	501	518	512	18	18	18
SM04-008	284	289	287	663	690	678	12	12	12
SM04-009	273	278	275	648	667	661	12	12	12
SM04-010A	292	304	298	687	707	699	12	13	12.6
SM04-011A	285	295	290	673	693	688	11	11	11
SM05-001	231	235	233	574	600	592	12	12	12
SM05-002	190	196	193	436	451	445	5.3	5.7	5.5
SM05-003	222	229	227	568	588	579	12	12	12

SM05-004	207	214	210	540	563	553	15	16	15.9
SM05-005	234	238	236	578	599	590	11	12	11.3
SM05-006	209	213	211	560	577	571	13	14	13.4
SM05-007	207	215	213	549	576	561	9.7	10	9.8
SM05-008	206	211	208	540	558	550	12	13	12.3
SM05-009	203	209	207	534	549	542	11	12	11.5
SM05-010	208	213	210	537	554	547	10	11	10.5
SM05-011	215	219	218	556	573	566	10	11	10.7
SM05-012	209	212	211	540	556	549	10	11	10.5
SM05-013	198	203	200	534	549	541	12	13	12.5
SM05-014	183	187	185	472	491	481	8.2	9.2	8.6
SM05-015	200	207	204	527	546	538	12	12	12
SM05-016	181	187	184	439	451	445	5	6.1	5.4
SM05-017	166	171	168	402	414	409	1.6	2.6	2.1
SM05-018	170	175	173	421	431	426	2.9	3.5	3.1
SM05-019	178	187	183	453	476	463	4.1	5.1	4.6
SM05-020	170	179	175	449	477	461	5.2	6.3	5.7
SM05-021	175	184	180	446	457	452	4.7	5.2	4.9
SM05-022	181	186	184	452	464	459	3.6	3.9	3.7
SM05-023	180	185	183	450	464	458	3.4	3.9	3.6
SM05-024	170	176	173	429	440	434	5	5.4	5.2
SM05-025	167	176	172	445	460	452	5.5	6.4	6.1
SM06-001	211	213	212	519	539	531	7.4	7.8	7.6
SM06-002	205	210	208	530	546	539	10	11	10.3
SM06-003	201	205	203	522	539	531	9.7	10	9.8
SM06-004	206	210	208	506	524	517	8.1	8.5	8.3
SM06-005	212	218	215	498	515	509	7	7.3	7.1
SM06-006	222	226	225	459	474	469	3.2	3.7	3.5
SM06-007	223	228	225	480	496	490	6.8	7.1	6.9
SM06-008	206	210	208	480	498	491	8.7	9.5	9.1

SM06-009	219	223	222	467	487	477	5.8	6.3	6
SM06-010	200	208	205	474	498	488	8	9	8.5
SM06-011	212	215	214	508	522	516	12	12	12
SM06-012	232	237	235	501	515	509	7.2	7.9	7.5
SM06-013	238	247	243	505	520	513	6	6.4	6.3
SM06-014	205	209	207	530	545	539	12	13	12.3
SM06-015	206	210	208	520	533	528	10	11	10.7
SM06-016	208	212	210	435	445	441	3.9	4.1	4.0
SM06-017	233	238	235	469	485	479	3.9	4.1	4
SM06-018	200	202	201	536	551	545	15	16	15.7
SM06-019	205	211	209	480	494	488	9.4	9.6	9.5
SM06-020	210	215	213	504	525	516	11	11	11
SM06-021	218	222	220	524	542	535	12	13	12.2
SM06-022	206	212	210	462	474	469	7.3	7.6	7.5
SM06-023	251	262	257	543	557	550	7.5	7.9	7.7
SM06-024	237	243	240	529	540	536	7.7	8.1	7.9
SM06-025	216	221	219	522	539	533	12	12	12
SM06-026	204	210	206	463	479	474	8.1	8.6	8.2
SM06-027	226	234	231	498	519	512	7.6	8.1	7.9
SM06-028	277	282	279	639	655	650	10	11	10.2
SM07-001	176	190	181	420	482	443	3.5	5.7	4.3
SM07-002	164	169	167	391	408	401	3.3	4	3.5
SM07-003	169	173	171	422	434	431	4.3	4.7	4.5
SM07-004	162	166	165	389	400	397	3.7	4.2	3.9
SM07-005	166	171	169	412	427	421	4.3	4.7	4.5
SM07-006	153	156	154	362	366	364	3.5	5.5	4.3
SM07-007	168	173	170	422	431	428	4.2	4.8	4.5
SM07-008	162	172	169	435	480	465	7.5	9	8.4
SM07-009	166	171	169	410	421	418	4.1	4.6	4.4

SM07-010	167	176	171	425	441	435	3.9	4	4.0
SM07-011	141	156	146	333	365	344	3	3.4	3.2
SM07-012	166	171	168	433	443	439	3.7	4	3.8
SM07-013	153	154	153	358	367	363	4.3	4.7	4.5
SM07-014	135	139	137	327	336	334	3.8	4.1	4.0
SM07-015	139	170	147	315	373	330	3.1	4.4	3.5
SM07-016	140	146	143	316	331	325	2.9	3.4	3.0
SM07-017	174	189	184	394	418	407	3.5	4	3.7
SM07-018	138	144	140	322	334	330	2.7	3.1	2.9
SM07-019	141	159	147	334	381	350	3.6	4.8	3.8
SM07-020	147	173	152	328	395	344	1.3	4	2
SM07-021	142	149	145	330	339	337	2.4	3	2.5
SM07-022	145	152	149	330	341	338	2.3	2.7	2.5
SM07-023	176	183	179	441	457	452	4	4.5	4.2
SM07-024	186	200	191	533	583	561	7.7	8.3	8.1
SM07-025	155	166	159	348	382	360	3.1	3.9	3.3
SM08-001	233	237	235	493	508	501	6.6	6.9	6.7
SM08-002	237	243	241	507	519	514	5.9	6.2	6.1
SM08-003	227	233	230	497	509	504	7.2	7.6	7.4
SM08-004	221	226	223	501	516	511	9.2	9.6	9.4
SM08-005	247	253	251	550	566	560	8.6	9.3	8.8
SM08-006	249	255	252	578	608	593	9.5	10	9.8
SM08-007	248	254	252	567	583	576	9.2	9.5	9.3
SM08-008	238	245	242	503	517	511	6.1	6.4	6.2
SM08-009	239	243	241	505	520	514	6.3	6.5	6.4
SM08-010	241	248	246	550	566	559	8.8	9.1	9
SM08-011	234	238	236	527	548	540	8.5	8.7	8.6
SM08-012	239	249	246	556	570	563	8.7	9.2	9.0
SM08-013	229	231	230	525	540	535	9.9	11	10.3
SM08-014	234	240	238	535	550	544	8.8	9.5	9.2

SM08-015	223	228	226	519	535	529	8.2	8.7	8.5
SM08-016	227	232	230	540	554	548	8.3	8.7	8.5
SM08-017	240	247	245	559	575	569	9	9.3	9.1
SM08-018	229	237	235	541	557	549	9.7	10	10.0
SM08-019	237	242	240	540	559	552	8.6	9.9	8.9
SM08-020	225	229	227	530	547	541	8.5	8.6	8.6
SM08-021	228	242	231	533	584	547	8.7	9.4	8.9
SM08-022	237	242	240	570	604	585	7.7	9	8.6
SM08-023	227	231	229	527	544	538	8.5	8.8	8.7
SM08-024	225	233	229	534	546	541	8.7	9.1	9.0
SM08-025	250	257	253	602	737	647	10	12	10.9
SM08-026	226	233	230	517	531	527	8.7	8.8	8.8
SM08-027	229	237	234	503	517	510	6.9	7.1	7.0
SM08-028	241	250	246	558	596	573	7.2	7.6	7.4
SM08-029	258	264	262	617	635	631	11	12	11.8
SM08-030	191	199	196	437	453	447	11	12	11.2
SM08-031	232	239	235	504	518	512	6.6	6.8	6.7
SM09-001	169	172	170	406	416	413	3.6	4.3	3.8
SM09-002	160	165	162	371	382	376	3.1	3.4	3.3
SM09-003	161	165	163	367	375	372	1.4	3.5	3.0
SM09-004	147	150	149	357	365	362	3.9	4.2	4.1
SM09-005	143	147	145	311	317	315	2.5	2.8	2.6
SM09-006	139	145	143	293	304	299	1.9	2.3	2.1
SM09-007	161	166	164	384	396	391	3.3	3.6	3.5
SM09-008	161	165	163	378	391	386	2.5	2.9	2.7
SM09-009	150	155	153	355	367	362	3.2	3.3	3.2
SM09-010	144	149	146	332	345	340	2.4	3.1	2.8
SM09-011	146	151	149	341	354	347	2.6	3	2.8
SM09-012	160	164	162	378	391	385	2.5	2.9	2.7

SM09-013	142	148	145	325	338	333	3.1	3.4	3.2
SM09-014	138	143	141	309	319	315	1.5	2.2	1.9
SM09-015	140	144	142	310	322	317	1.7	2.2	2.0
SM09-016	140	145	143	291	301	297	1.4	1.8	1.6
SM09-017	140	144	142	309	321	317	2.9	3.4	3.1
SM09-018	141	144	143	307	321	313	1.3	2	1.7
SM09-019	135	139	137	300	310	306	2.7	3.1	2.9
SM09-020	138	142	140	302	313	309	1.3	2.4	2.0
SM10-001	307	316	312	720	740	731	14	15	14.2
SM10-002	231	236	233	527	544	537	8.5	8.8	8.6
SM10-003	243	249	246	540	560	551	8	8.5	8.2
SM10-004	238	243	241	518	539	530	6.9	7.4	7.2
SM10-005	237	243	240	516	537	528	6.9	7.1	7
SM10-006	332	351	343	756	776	769	13	14	13.8
SM10-007	318	328	323	722	745	735	14	15	14.2
SM10-008	282	293	288	661	682	670	13	15	14
SM10-009	237	243	240	524	549	539	8.4	8.7	8.5
SM10-010	235	239	237	521	541	534	8.1	8.3	8.2
SM10-011	246	258	253	580	596	590	9.6	10	9.9
SM10-012	269	277	273	622	642	632	11	12	11.3
SM10-013	236	243	240	538	561	550	9.4	9.7	9.5
SM10-014A	251	255	254	571	596	587	10	11	10.2
SM10-015	239	244	242	539	558	551	9.2	9.5	9.4
SM10-016	248	256	253	573	587	583	12	13	12.1
SM10-017	239	253	246	549	623	565	11	17	11.9
SM10-018	237	246	241	525	539	532	8.2	8.9	8.6
SM10-019	246	257	252	555	569	562	9.2	9.6	9.3
SM10-020	233	242	237	559	574	567	18	19	18.1
SM10-021	239	247	242	572	587	581	16	18	17.4
SM10-022	241	249	245	545	559	551	11	11	11

SM10-023	234	239	237	547	559	555	14	15	14.3
SM10-024	229	233	231	521	542	536	10	11	10.8
SM10-025	226	231	229	524	532	530	9.5	11	10.4
SM10-026	244	249	246	566	590	579	15	15	15
SM10-027	245	252	249	551	561	555	9.1	9.8	9.4
SM10-028A	214	238	230	589	990	682	24	54	31.3
SM10-029A	260	267	263	589	605	597	12	13	12.5
SM10-030	235	244	240	517	536	528	7.1	7.4	7.3
SM10-031	239	243	241	534	552	546	7.7	8.1	7.9
SM10-032	238	244	241	520	542	532	6.9	7.3	7.0
SM11-001	162	166	164	399	407	404	5	5.5	5.2
SM11-002	140	143	141	312	321	317	3.3	3.8	3.5
SM11-003	143	147	145	317	327	322	2	2.4	2.3
SM11-004	140	143	141	299	307	304	1.6	2.2	1.9
SM11-005	138	142	140	312	322	317	3.9	4.3	4.1
SM11-006	141	145	143	310	318	315	3.2	3.4	3.3
SM11-007	140	145	143	297	309	304	2.5	3.2	2.7
SM11-009	150	154	152	299	308	305	1	1.3	1.2
SM11-010	154	159	157	311	321	317	1.5	2.3	1.9
SM11-011	144	148	146	336	347	342	3	3.4	3.3
SM11-012	143	147	145	323	332	328	3.1	3.4	3.2
SM11-013	141	145	143	287	296	293	1.2	1.8	1.6
SM11-014	136	140	138	284	293	290	1.3	2	1.6
SM11-015	136	140	138	297	306	303	2.1	2.3	2.2
SM11-016	143	150	146	294	306	300	2.3	2.7	2.5
SM11-017	141	146	143	287	296	292	2.6	2.9	2.8
SM11-018	138	143	140	295	308	303	4.2	4.6	4.5
SM11-019	140	145	143	304	317	311	1.4	2.2	1.8
SM11-020	160	166	163	396	408	401	5.5	6	5.7

SM11-022	167	172	169	445	460	456	6.9	7.3	7.1
SM11-023	167	172	169	393	405	401	4.9	5.1	5.0
SM11-024	154	160	157	392	408	402	4.9	5.5	5.1
SM11-025	160	164	161	396	411	406	3.2	3.5	3.3
SM11-026	148	154	151	339	357	350	2.7	2.9	2.9

Appendix B

Monitor Well Laboratory Reports

First Quarter, 2019

WD

Cameco

Crow Butte Project

Monitor Well Laboratory Report

Sample Date: 01/02/2019

Analysis Date: 01/02/2019

Well ID	Alkalinity (mg/L)	Alk SCL	Alk MCL	Conductivity (µMho/cm)	Cond SCL	Cond MCL	Chloride (mg/L)	Cl SCL	Cl MCL
CM07-011	297	432	360	1865	2817	2347	184	281	234
CM07-012	297	422	352	1862	2794	2328	185	289	241
CM07-013	296	436	364	1884	2841	2368	190	287	239
CM07-014	296	422	352	1902	2772	2310	186	274	228
CM07-015	303	432	360	1896	2822	2352	190	284	236
CM07-016	315	441	367	1940	2831	2359	193	281	234
CM10-008	329	475	396	1820	2707	2256	185	265	221
CM10-009	323	468	390	1804	2693	2244	179	269	224
CM10-010	380	475	396	2056	2736	2280	210	275	229
CM10-011	331	481	401	1785	2808	2340	171	288	240
CM10-012	348	446	372	1812	2923	2436	177	327	272
CM10-013	358	481	401	1734	2779	2316	172	287	239
CM10-014	357	490	408	1719	2578	2148	171	251	209
CM10-015	335	504	420	1758	2491	2076	165	253	211
CM10-016	317	484	403	1804	2650	2208	166	253	211
CM10-017	327	475	396	1813	2664	2220	171	248	206
CM11-011	391	433	361	2112	2736	2280	202	278	232
IJ013P	327	415	346	1300	2900	2417	109	278	232
PR008	326	484	403	1249	2866	2388	98	282	235
PR015	293	444	370	1098	2792	2327	85	268	223
SM03-001	207	374	312	648	1122	935	12	85	71
SM03-002	179	305	254	429	805	671	3.7	40	34
SM03-003	178	297	247	442	729	607	5.8	30	25
SM04-010A	298	354	295	687	1053	877	12	36	30
SM04-011A	290	554	462	673	1469	1224	11	139	115
SM07-015	144	200	167	315	495	413	3.4	24	20
SM07-016	142	199	166	316	451	376	3	24	20
SM07-017	181	209	174	397	539	449	3.6	30	25
SM07-018	140	217	181	322	513	427	3	23	19
SM07-019	144	212	176	334	599	499	3.6	38	31
SM07-020	148	228	190	328	583	486	1.3	28	23
SM07-021	145	216	180	330	534	445	2.4	27	23

Cameco

Crow Butte Project

Monitor Well Laboratory Report

Sample Date: 01/09/2019

Analysis Date: 01/09/2019

Well ID	Alkalinity (mg/L)	Alk SCL	Alk MCL	Conductivity (µMho/cm)	Cond SCL	Cond MCL	Chloride (mg/L)	Cl SCL	Cl MCL
CM08-010	315	441	367	1799	3038	2532	175	315	263
CM08-011	319	446	372	1811	3053	2544	177	325	271
CM08-012	324	461	384	1829	3038	2532	174	305	254
CM10-001	321	469	391	1819	2822	2352	172	305	254
CM10-002	320	474	395	1826	2707	2256	173	262	218
CM10-003	316	474	395	1824	2736	2280	177	266	222
CM10-004	327	468	390	1869	2794	2328	186	288	240
CM10-005	342	464	386	1961	3082	2568	202	389	324
CM10-006	321	482	402	1811	2750	2292	172	281	234
CM10-007	322	482	402	1807	2765	2304	172	278	232
CM11-001	304	438	365	1810	2808	2340	178	297	247
CM11-002A	302	442	368	1805	2794	2328	179	285	238
CM11-003	320	439	366	1866	2693	2244	182	272	227
CM11-004	303	464	386	1795	2678	2232	173	268	223
CM11-005	303	451	376	1794	2664	2220	177	274	228
CM11-006	302	436	364	1784	2707	2256	173	269	224
CM11-007	301	432	360	1781	2707	2256	173	272	227
CM11-008	308	462	385	1821	2678	2232	174	274	228
CM11-009	299	439	366	1787	2765	2304	168	276	230
CM11-010	302	436	364	1780	2707	2256	172	284	236
CM11-011	372	433	361	2030	2736	2280	189	278	232
SM04-003	184	361	301	599	1251	1043	12	38	32
SM04-004	207	266	222	605	1099	916	13	62	52
SM10-001	312	469	391	720	994	828	14	37	31
SM10-002	232	338	282	527	763	636	8.5	24	20
SM10-003	246	386	322	540	821	684	8.3	24	20
SM10-004	239	346	288	518	778	648	7.3	24	20
SM10-005	239	350	292	516	763	636	7.1	23	19
SM10-006	350	501	418	770	1123	936	14	33	28
SM10-007	322	403	336	722	965	804	15	33	27
SM10-008	289	403	336	661	907	756	14	31	26
SM10-009	239	389	324	524	835	696	8.5	28	23

Cameco

Crow Butte Project

Monitor Well Laboratory Report

Sample Date: 03/25/2019

Analysis Date: 03/25/2019

Well ID	Alkalinity (mg/L)	Alk SCL	Alk MCL	Conductivity (µMho/cm)	Cond SCL	Cond MCL	Chloride (mg/L)	Cl SCL	Cl MCL
SM07-013	153	233	194	363	592	493	4.3	25	21
SM07-014	136	180	150	336	618	515	3.8	65	54
SM10-023	234	360	300	559	792	660	14	28	23
SM10-024	230	346	288	538	778	648	11	25	21
SM10-025	228	331	276	530	792	660	9.5	27	23
SM10-026	244	360	300	590	821	684	15	29	24
SM10-027	246	403	336	555	878	732	9.4	25	21
SM10-028A	216	360	300	804	893	744	38	43	36
SM10-029A	261	360	300	598	864	720	13	31	26

Cameco

Crow Butte Project

Monitor Well Laboratory Report

Sample Date: 03/26/2019

Analysis Date: 03/26/2019

Well ID	Alkalinity (mg/L)	Alk SCL	Alk MCL	Conductivity (µMho/cm)	Cond SCL	Cond MCL	Chloride (mg/L)	Cl SCL	Cl MCL
SM07-023	176	278	232	453	850	708	4.1	59	50
SM07-024	200	259	216	533	809	674	8.2	45	37
SM07-025	166	202	168	382	645	538	3.9	52	44
SM10-016	249	382	318	587	850	708	13	28	23
SM10-017	239	374	312	623	835	696	17	28	23
SM10-018	237	346	288	530	763	636	8.2	24	20
SM10-019	246	369	307	563	778	648	9.6	25	21
SM10-020	233	360	300	567	792	660	18	27	22
SM10-021	241	360	300	577	806	672	16	27	23
SM10-022	244	360	300	554	778	648	11	23	20
SM10-028A	214	360	300	990	893	744	54	43	36

Cameco

Crow Butte Project

Monitor Well Laboratory Report

Sample Date: 03/27/2019

Analysis Date: 03/27/2019

Well ID	Alkalinity (mg/L)	Alk SCL	Alk MCL	Conductivity (µMho/cm)	Cond SCL	Cond MCL	Chloride (mg/L)	Cl SCL	Cl MCL
SM05-007	209	323	269	564	932	776	9.9	41	34
SM05-008	206	312	260	555	840	700	12	32	27
SM08-017	240	331	276	569	848	707	9.1	24	20
SM08-018	229	317	264	542	816	680	9.7	25	21
SM08-019	237	340	283	559	827	689	9.9	25	21
SM08-020	225	314	262	544	806	672	8.6	25	21
SM08-021	242	317	264	584	706	588	9.4	25	21
SM08-022	237	324	270	604	829	691	9	25	20
SM08-023	227	317	264	544	808	673	8.5	27	23
SM08-024	225	317	264	540	720	600	8.7	24	20
SM08-025	253	324	270	724	720	600	12	24	20
SM10-030	235	359	299	530	778	648	7.4	25	21
SM10-031	239	340	283	552	734	612	8.1	25	21
SM10-032	239	340	283	542	734	612	7.3	23	20

Cameco

Crow Butte Project

Monitor Well Laboratory Report

Sample Date: 03/28/2019

Analysis Date: 03/28/2019

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	298	456	380	1887	2982	2485	179	323	269
CM05-013	294	373	311	1893	3149	2624	178	386	322
CM06-001	297	432	360	1879	3168	2640	181	334	278
CM06-002	298	436	364	1913	2822	2352	180	279	233
CM06-003	301	441	367	1912	2808	2340	177	269	224
CM06-004	303	441	367	1920	2837	2364	176	289	241
CM06-005	294	416	347	1938	2923	2436	175	294	245
CM06-006	306	444	370	1928	2894	2412	175	301	251
CM06-007	280	403	336	1963	2822	2352	175	281	234
CM06-008	294	445	371	1929	2923	2436	175	305	254
CM07-010	298	454	378	1881	2877	2398	189	297	247
CM09-012	306	444	370	1801	2866	2388	177	321	268
CM09-013	297	442	368	1799	2707	2256	176	279	233
CM09-014	302	461	384	1817	2923	2436	180	327	272
CM09-015	306	432	360	1821	2736	2280	178	279	233
CM09-016	304	444	370	1827	2678	2232	180	268	223
CM09-017	303	441	367	1829	2678	2232	180	268	223
CM09-018	297	445	371	1829	2794	2328	181	294	245
CM09-019	298	454	378	1840	2952	2460	182	315	263
CM09-020	292	431	359	1846	2779	2316	181	279	233
SM06-001	211	325	271	536	903	752	7.4	47	39
SM06-002	205	291	242	541	1008	840	10	85	71
SM06-003	202	295	246	537	844	703	9.8	43	36
SM06-004	206	310	258	522	804	670	8.2	32	27
SM06-005	212	314	262	514	770	642	7	26	22
SM06-006	222	334	278	474	711	593	3.4	24	20
SM06-007	223	343	286	494	779	649	6.9	39	32
SM06-008	207	311	259	493	770	642	9.5	36	30
SM06-009	219	336	280	480	815	679	6.1	51	42
SM06-010	204	317	264	495	838	698	8.6	35	29
SM06-017	233	353	294	484	798	665	4	42	35
SM08-025	257	324	270	737	720	600	12	24	20