

**CAMECO RESOURCES
CROW BUTTE OPERATION**



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

**(308) 665-2215
(308) 665-2341 – FAX**

July 8, 2013

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Mr. Michael Linder, Director
Nebraska Department of Environmental Quality
P.O. Box 98922
Lincoln, NE 68509-8922

Subject: Class III UIC Permit NE0122611
June 2013 Monthly Restoration Report

Dear Mr. Linder:

Please find enclosed the June 2013 Monthly Restoration Reports for Mine Units 2, 3, 4, 5 and 6. The reverse osmosis (RO) units continue to inject permeate and reductant into Mine Units 4, and 5. IX treatment continued in Mine Unit 6 with groundwater sweep continuing in portions of Mine Units 4 and 5.

On June 16 and 17, 2013, split samples, with the department, were collected from the baseline monitor wells in Mine Units 2 and 3. All restoration activities were ceased in the mine units and both were placed into stability monitoring.

If you have any questions regarding this submittal, please feel free to contact me at (308) 665-2215, ext. 114.

Sincerely,
Cameco Resources
Crow Butte Operation

Larry Teahon
SHEQ Manager

Enclosures: As Stated

cc: Shar Sapp, NDEQ Chadron Office
Ron Burrows, NRC
CBO - File
ec: CR - Cheyenne

CROW BUTTE MINE
 MONTHLY RESTORATION REPORT
 JUNE 2013
 MINE UNIT 2

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep		X	(if yes, complete part 3)
c. Groundwater Treatment	X		RO and Reductant PR15, P97, P113, I180P, I188P, and P209.
d. Wellfield Recirculation		X	
e. Other (explain):		X	

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

P97, P113, I180P, I188P, and P209.

Mine Unit 2 Restoration Data

Well #	Date	Na (ppm)	V (ppm)	Ca (ppm)	U (ppm)	Cond (μmohs/l)
P97	06/05/13				0.55	222
P97	06/12/13	48.7	0.1	0.4	0.09	
P113	06/05/13				0.85	825
P113	06/12/13	174.3	0.3	5.5	0.83	
I180P	06/05/13				0.28	827
I180P	06/12/13	183.1	0.2	4.8	0.25	
I188P	06/05/13				0.34	389
I188P	06/12/13	86.4	0.5	1.5	0.32	
P209	06/05/13				0.73	1101
P209	06/12/13	258.0	0.5	10.6	0.82	

CROW BUTTE MINE
MONTHLY RESTORATION REPORT
JUNE 2013
MINE UNIT 3

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep		X	(if yes, complete part 3)
c. Groundwater Treatment	X		RO and Reductant CM1-11, IJ13P, I298P, and RES2E.
d. Wellfield Recirculation		X	
e. Other (explain):		X	

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

CM1-11, I298P, and RES2E.

Mine Unit 3 Restoration Data

Well #	Date	Na (ppm)	V (ppm)	Ca (ppm)	U (ppm)	Cond (μ mohs/l)
CM1-11	06/05/13				0.11	1804
CM1-11	06/12/13	359.4	0.3	33.7	0.13	
I298P	06/05/13				0.22	473
I298P	06/12/13	100.3	0.1	2.2	0.08	
RES-2E	06/05/13				1.34	904
RES-2E	06/12/13	204.1	0.5	4.0	1.42	

CROW BUTTE MINE
 MONTHLY RESTORATION REPORT
 JUNE 2013
 MINE UNIT 4

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep	X		(if yes, complete part 3)
c. Groundwater Treatment	X		RO and Reductant P373, P380, P421, P422, P423, P426, P427, P431, P437, P442, P445, P456, P460, P461, I548P, and I551P.
d. Wellfield Recirculation		X	
e. Other (explain):			

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

CM2-4, P371, P396, P397, P430, and P508.

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

CM2-4, P371, P373, P380, P396, P397, P421, P426, P430, P431, P437, P445, P456, P460, P461, I508P, I548P, and I551P.

Mine Unit 4 Restoration Data

Well #	Date	Na (ppm)	V (ppm)	Ca (ppm)	U (ppm)	Cond (μmohs/l)
CM2-4	6/5/2013				2.55	3220
CM2-4	06/12/13	699.7	0.0	42.2	2.84	
CM2-4	06/26/13	660.9	0.0	46.0	2.95	
P371	06/05/13				4.26	2040
P371	06/12/13	466.9	0.4	27.9	5.22	
P371	06/26/13	471.4	0.4	32.0	5.31	
P373	06/05/13				1.28	1114
P373	06/12/13	233.2	0.0	7.7	1.27	
P380	06/05/13				5.53	3300
P380	06/12/13	686.0	0.3	50.2	5.55	
P380	06/26/13	654.5	0.4	50.6	5.84	
P396	06/05/13				5.72	4090
P396	06/12/13	865.6	0.2	62.5	6.38	
P396	06/26/13	792.0	0.2	62.3	6.10	
P397	06/05/13				6.52	4140
P421	06/05/13				1.60	2006
P421	06/12/13	426.1	0.2	27.0	1.84	
P421	06/26/13	374.4	0.2	24.3	1.82	
P426	06/05/13				6.92	4090
P426	06/12/13	912.0	0.2	61.9	7.68	
P426	06/26/13	795.0	0.2	55.6	7.42	
P430	06/05/13				1.01	1103
P430	06/12/13	254.0	0.2	14.3	0.98	
P430	06/19/13	209.7	0.2	12.8	0.79	1044
P430	06/26/13	232.4	0.6	15.7	1.11	
P431	06/05/13				4.57	1873
P431	06/12/13	448.0	0.2	17.9	6.83	
P431	06/26/13	483.7	0.3	20.6	8.73	
P437	06/05/13				6.67	3040
P437	06/12/13	670.9	1.1	43.7	7.26	
P437	06/19/13	534.6	1.0	37.7	5.50	2590
P437	06/26/13	545.3	1.0	33.8	5.11	
P445	06/05/13				4.85	3190
P445	06/12/13	721.5	0.3	49.2	5.33	
P445	06/26/13	594.9	0.3	42.0	4.25	

Mine Unit 4 Restoration Data

Well #	Date	Na (ppm)	V (ppm)	Ca (ppm)	U (ppm)	Cond (µmohs/l)
P456	06/05/13				1.22	1109
P456	06/12/13	261.1	0.9	6.1	1.16	
P456	06/19/13	227.7	0.8	5.6	1.02	1099
P460	06/05/13				6.16	2327
P460	06/12/13	532.7	0.5	36.8	6.98	
P460	06/19/13	466.8	0.4	37.4	5.97	2348
P460	06/26/13	494.6	0.4	37.0	6.19	
P461	06/05/13				5.98	3040
P461	06/12/13	695.7	0.5	50.2	6.09	
P461	06/19/13	735.9	0.4	62.6	6.46	3720
P461	06/26/13	819.3	0.4	68.7	7.51	
I508P	06/05/13				5.97	4040
I508P	06/12/13	858.5	0.2	60.8	6.57	
I548P	06/05/13				4.07	3940
I548P	06/12/13	861.5	0.3	55.1	4.58	
I548P	06/19/13	735.9	0.3	51.5	4.27	
I548P	06/26/13	743.8	0.3	50.2	4.19	3670
I551P	06/05/13				11.86	3570
I551P	06/12/13	857.2	0.9	55.0	14.23	
I551P	06/19/13	695.4	0.8	55.6	12.28	3500
I551P	06/26/13	686.0	0.7	51.9	11.12	

CROW BUTTE MINE
MONTHLY RESTORATION REPORT
JUNE 2013
MINE UNIT 5

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep	X		(if yes, complete part 3)
c. Groundwater Treatment	X		RO and Reductant BL14, P680, P773, P795, P800, P962, P1085, P1117, and P1155.
d. Wellfield Recirculation		X	
e. Other (explain):		X	

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:
BL5-1, BL5-2, CM3-2, P690, I854P, and P1209.

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

BL5-1, BL5-2, CM3-2, P680, P690, P773, P795, P800, I854P, P962, P1085, P1094, P1117,
P1155, and P1209.

Mine Unit 5 Restoration Data

Well #	Date	Na (ppm)	V (ppm)	Ca (ppm)	U (ppm)	Cond (µmohs/l)
BL5-1	06/05/13				0.37	3550
BL5-2	06/05/13				2.09	4250
CM3-2	06/05/13				0.41	2460
P680	06/05/13				5.67	1854
P680	06/12/13	422.3	1.8	14.3	6.30	
P680	06/19/13	374.9	1.7	14.3	5.81	1867
I690P	06/05/13				13.92	4630
I690P	06/12/13	1005.0	0.3	73.6	14.83	
I690P	06/19/13	911.3	0.3	71.3	13.66	4590
I690P	06/26/13	940.1	0.3	72.6	13.83	
P773	06/05/13				1.62	1509
P773	06/12/13	318.3	0.5	10.4	1.73	
P773	06/19/13	290.1	0.5	9.9	1.52	1370
P795	06/05/13				3.25	1612
P795	06/12/13	350.3	1.0	14.6	3.68	
P795	06/16/13	313.7	0.9	14.1	3.34	1576
P800	06/05/13				2.23	1862
P800	06/12/13	486.8	0.3	18.5	3.20	
P800	06/19/13	375.7	0.2	19.0	2.45	1843
I854P	06/05/13				1.78	2897
I854P	06/12/13	661.6	0.0	30.7	2.07	
I854P	06/19/13	578.0	0.0	30.9	1.89	2826
P962	06/05/13				6.63	2454
P962	06/12/13	547.0	0.8	29.2	7.10	
P962	06/19/13	471.1	0.7	28.8	6.48	2356
P962	06/26/13	461.4	0.8	26.6	6.17	
P1085	06/05/13				3.91	2068
P1085	06/12/13	469.3	3.9	16.3	4.32	
P1085	06/19/13	427.5	3.7	15.8	3.76	2071
P1085	06/26/13	428.2	3.8	15.8	3.87	
P1094	06/05/13				3.54	1869
P1094	06/12/13	433.4	0.6	10.9	4.26	
P1094	06/19/13	357.4	0.5	10.2	3.44	1788
P1094	06/26/13	368.2	0.6	9.8	3.07	

Mine Unit 5 Restoration Data

Well #	Date	Na (ppm)	V (ppm)	Ca (ppm)	U (ppm)	Cond (μmohs/l)
P1117	06/05/13				1.24	1945
P1117	06/12/13	405.6	0.3	17.6	1.31	
P1117	06/19/13	386.9	0.3	16.9	1.31	1943
P1117	06/26/13	394.4	0.3	16.9	1.27	
P1155	06/05/13				5.36	2320
P1155	06/12/13	528.4	0.9	27.2	6.09	
P1155	06/19/13	443.1	0.9	24.4	5.21	2197
P1155	06/26/13	482.2	0.9	26.1	5.68	
P1209	06/05/13				9.82	3380
P1209	06/12/13	786.3	0.4	33.8	11.84	
P1209	06/26/13	655.2	0.4	33.8	9.39	

CROW BUTTE MINE
MONTHLY RESTORATION REPORT
JUNE 2013
MINE UNIT 6

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep		X	(if yes, complete part 3)
c. Groundwater Treatment	X		IX P1268, P1283, P1312, P1314, P1349, P1370, P1474, P1497, P1596, P1630, P1633, P1715, P1751, P1756, P1778, P1794, P1800, P1857, and P1865.
d. Wellfield Recirculation		X	
e. Other (explain):		X	

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

P1268, P1283, P1312, P1314, P1349, P1370, P1474, P1497, P1596, P1630, P1633, P1715,
P1751, P1756, P1778, P1794, P1800, P1857, and P1865.

Mine Unit 6 Restoration Data

Well #	Date	Na (ppm)	V (ppm)	Ca (ppm)	U (ppm)	Cond (µmohs/l)
P1268	06/05/13				12.12	5170
P1268	06/12/13	1119.0	2.0	67.7	12.26	
P1268	06/19/13	990.1	1.9	64.8	10.96	4900
P1268	06/26/13	1039.0	2.0	66.2	11.58	
P1283	06/05/13				26.81	5430
P1283	06/12/13	1243.0	1.4	60.9	28.07	
P1283	06/19/13	1105.0	1.3	58.8	25.97	5320
P1283	06/26/13	1131.0	1.4	60.9	26.35	
P1312	06/05/13				19.12	5060
P1312	06/12/13	1151.0	1.1	66.8	20.31	
P1312	06/19/13	1030.0	1.0	63.9	18.53	5030
P1312	06/26/13	1056.0	1.0	65.9	19.08	
P1314	06/05/13				8.78	5030
P1314	06/12/13	1142.0	1.5	60.3	9.38	
P1314	06/19/13	1025.0	1.4	58.9	8.63	5000
P1314	06/26/13	1061.0	1.4	60.7	9.16	
P1349	06/05/13				9.87	5070
P1349	06/12/13	1127.0	2.4	65.5	9.82	
P1349	06/19/13	1014.0	2.2	63.6	8.92	4980
P1349	06/26/13	1051.0	2.3	66.8	9.13	
P1370	06/05/13				13.00	5140
P1370	06/12/13	1195.0	0.8	61.5	14.09	
P1370	06/19/13	1049.0	0.8	61.3	12.81	5120
P1370	06/26/13	1088.0	0.8	62.5	13.28	
P1474	06/05/13				9.39	5210
P1474	06/12/13	1207.0	1.4	58.5	9.41	
P1474	06/19/13	1065.0	1.3	56.6	8.34	5150
P1474	06/26/13	1079.0	1.3	57.3	8.04	
P1497	06/05/13				53.15	4810
P1497	06/12/13	1153.0	0.1	84.5	58.14	
P1497	06/19/13	986.7	0.1	81.5	53.63	4860
P1596	06/05/13				41.25	5110
P1596	06/12/13	1148.0	1.6	61.9	21.33	
P1596	06/19/13	1031.0	1.4	55.2	20.79	4990
P1596	06/26/13	1082.0	1.5	62.7	21.31	

Mine Unit 6 Restoration Data

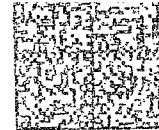
Well #	Date	Na (ppm)	V (ppm)	Ca (ppm)	U (ppm)	Cond (μmohs/l)
P1630	06/05/13				14.60	5450
P1630	06/12/13	1222.0	1.7	58.0	14.93	
P1630	06/19/13	1098.0	1.6	56.9	13.63	5270
P1630	06/26/13	1107.0	1.6	54.3	13.34	
P1633	06/05/13				17.24	4560
P1633	06/12/13	1041.0	1.0	47.8	17.77	
P1633	06/19/13	923.4	0.9	46.6	16.48	4550
P1633	06/26/13	963.5	1.0	47.6	16.87	
P1715	06/05/13					5210
P1715	06/12/13	1188.0	1.5	53.7	22.16	
P1715	06/19/13	1062.0	1.3	52.9	20.59	5130
P1715	06/26/13	1069.0	1.4	53.5	20.39	
P1751	06/05/13				9.28	5130
P1751	06/12/13	1195.0	0.9	60.6	9.90	
P1751	06/19/13	1054.0	0.8	59.8	8.83	5130
P1751	06/26/13	1100.0	0.8	60.8	9.27	
P1756	06/05/13				9.61	5030
P1756	06/12/13	1184.0	0.7	58.5	10.12	
P1756	06/19/13	1024.0	0.7	56.7	8.97	4940
P1756	06/26/13	1051.0	0.7	57.6	9.32	
P1778	06/05/13				9.79	5210
P1778	06/12/13	1189.0	0.9	64.3	9.52	
P1778	06/19/13	1071.0	0.8	56.7	9.10	5200
P1778	06/26/13	1081.0	0.8	62.5	9.28	
P1794	06/05/13				12.60	4680
P1794	06/12/13	1055.0	1.4	54.8	12.61	
P1794	06/19/13	954.3	1.3	54.0	11.52	4720
P1794	06/26/13	998.3	1.4	54.6	11.95	
P1800	06/05/13				11.28	5100
P1800	06/12/13	1122.0	0.7	78.8	11.77	
P1800	06/19/13	1016.0	0.7	75.5	10.78	5040
P1800	06/26/13	1046.0	0.7	76.0	10.55	
P1857	06/05/13				10.21	5120
P1857	06/12/13	1267.0	1.2	56.2	11.29	
P1857	06/19/13	1047.0	1.0	54.6	9.05	5070
P1857	06/26/13	1066.0	1.0	54.9	9.32	

Mine Unit 6 Restoration Data

Well #	Date	Na (ppm)	V (ppm)	Ca (ppm)	U (ppm)	Cond (μmohs/l)
P1865	06/05/13				25.92	4930
P1865	06/12/13	1105.0	1.9	58.9	25.55	
P1865	06/19/13	965.9	1.7	53.9	23.01	4740
P1865	06/26/13	1013.0	1.8	56.4	23.46	



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Cameco

CAMECO RESOURCES

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69339 USA

Mr. Ron Burrows, Project Manager
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Directorate
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