

**CAMECO RESOURCES  
CROW BUTTE OPERATION**

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



(308) 665-2215  
(308) 665-2341 – FAX

February 6, 2012

**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  
January 2012 Monthly Restoration Report

Dear Mr. Linder:

Please find enclosed the January 2011 Monthly Restoration Reports for Mine Units 2, 3, 4, 5 and 6. Mine Unit 2 was placed into recirculation on July 7, 2011 in order to homogenize the aquifer in preparation for stability monitoring. This mine unit has been put back into reverse osmosis treatment so that permeate can be injected into patterns connected to Wellhouses 3 and 5. The reverse osmosis (RO) units continue to inject permeate and reductant into Mine Units 3 and 5. In Mine Unit 4, permeate is being injected into one wellhouse while the other two wellhouses remain in ion exchange. A hydrologic bleed was maintained in Mine Unit 6 for excursion control.

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: Lindsey Phillips, NDEQ Chadron Office  
Ron Burrows, NRC  
CBO File  
ec: CR - Cheyenne

CROW BUTTE MINE  
MONTHLY RESTORATION REPORT  
JANUARY 2012  
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<br>PR15, P97, I180P, I188P, and<br>P209. |
| d. Wellfield Recirculation |     | X  |                                             |
| e. Other (explain):        |     | X  |                                             |

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

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

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4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

P97, I188P, and P209.

# Mine Unit 2 Restoration Data

| Well  | Date     | U <sub>3</sub> O <sub>8</sub> | V | Total CO <sub>3</sub> | pH | Ca | Na | Cl | SO <sub>4</sub> | Cond |
|-------|----------|-------------------------------|---|-----------------------|----|----|----|----|-----------------|------|
| P97   | 01/05/12 | 2.23                          |   |                       |    |    |    |    |                 | 1342 |
| P97   | 01/10/12 | 2.25                          |   |                       |    |    |    |    |                 |      |
| P97   | 01/18/12 | 2.13                          |   |                       |    |    |    |    |                 | 1213 |
| P97   | 01/25/12 | 2.28                          |   |                       |    |    |    |    |                 |      |
| I188P | 01/05/12 | 2.07                          |   |                       |    |    |    |    |                 | 1164 |
| I188P | 01/10/12 | 2.17                          |   |                       |    |    |    |    |                 |      |
| I188P | 01/18/12 | 1.81                          |   |                       |    |    |    |    |                 | 1135 |
| I188P | 01/25/12 | 2.08                          |   |                       |    |    |    |    |                 |      |
| P209  | 01/05/12 | 1.77                          |   |                       |    |    |    |    |                 | 1268 |
| P209  | 01/10/12 | 1.72                          |   |                       |    |    |    |    |                 |      |
| P209  | 01/18/12 | 1.58                          |   |                       |    |    |    |    |                 | 1208 |
| P209  | 01/25/12 | 1.84                          |   |                       |    |    |    |    |                 |      |

CROW BUTTE MINE  
MONTHLY RESTORATION REPORT  
JANUARY 2012  
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<br>CM1-11, IJ13P, P228, I298P,<br>RES1E, RES2E, and RES3E. |
| d. Wellfield Recirculation |     | X  |                                                                             |
| e. Other (explain):        |     | X  |                                                                             |

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

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

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4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

CM1-11, P228, I298P, RES1E, RES2E, and RES3E.

Mine Unit 3 Restoration Data

| Well   | Date     | U <sub>3</sub> O <sub>8</sub> | V | Total CO <sub>3</sub> | pH | Ca | Na | Cl | SO <sub>4</sub> | Cond |
|--------|----------|-------------------------------|---|-----------------------|----|----|----|----|-----------------|------|
| CM1-11 | 01/05/12 | 0.38                          |   |                       |    |    |    |    |                 |      |
| CM1-11 | 01/10/12 | 0.37                          |   |                       |    |    |    |    |                 |      |
| CM1-11 | 01/18/12 | 0.14                          |   |                       |    |    |    |    |                 | 1870 |
| CM1-11 | 01/25/12 | 0.54                          |   |                       |    |    |    |    |                 |      |
| P228   | 01/05/12 | 1.30                          |   |                       |    |    |    |    |                 | 756  |
| P228   | 01/10/12 | 1.24                          |   |                       |    |    |    |    |                 |      |
| P228   | 01/18/12 | 1.03                          |   |                       |    |    |    |    |                 | 750  |
| P228   | 01/25/12 | 1.41                          |   |                       |    |    |    |    |                 |      |
| I298P  | 01/05/12 | 0.21                          |   |                       |    |    |    |    |                 | 466  |
| I298P  | 01/10/12 | 0.17                          |   |                       |    |    |    |    |                 |      |
| I298P  | 01/18/12 | 0.00                          |   |                       |    |    |    |    |                 | 474  |
| I298P  | 01/25/12 | 0.32                          |   |                       |    |    |    |    |                 |      |
| RES1E  | 01/05/12 | 1.68                          |   |                       |    |    |    |    |                 | 967  |
| RES1E  | 01/10/12 | 1.72                          |   |                       |    |    |    |    |                 |      |
| RES1E  | 01/18/12 | 1.22                          |   |                       |    |    |    |    |                 | 964  |
| RES1E  | 01/25/12 | 1.87                          |   |                       |    |    |    |    |                 |      |
| RES2E  | 01/05/12 | 2.09                          |   |                       |    |    |    |    |                 | 1327 |
| RES2E  | 01/10/12 | 2.13                          |   |                       |    |    |    |    |                 |      |
| RES2E  | 01/18/12 | 1.97                          |   |                       |    |    |    |    |                 | 1300 |
| RES2E  | 01/25/12 | 2.22                          |   |                       |    |    |    |    |                 |      |
| RES3E  | 01/05/12 | 1.41                          |   |                       |    |    |    |    |                 | 984  |
| RES3E  | 01/10/12 | 1.53                          |   |                       |    |    |    |    |                 |      |
| RES3E  | 01/18/12 | 1.41                          |   |                       |    |    |    |    |                 | 973  |
| RES3E  | 01/25/12 | 1.73                          |   |                       |    |    |    |    |                 |      |

CROW BUTTE MINE  
MONTHLY RESTORATION REPORT  
JANUARY 2012  
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<br>P371<br>IX<br>P393, P394, P430, P434,<br>P437, P438, P442, P443,<br>P447, P450, P456, P461,<br>I548P, I549P, I551P, and<br>I613. |
| d. Wellfield Recirculation |     | X  |                                                                                                                                                      |
| e. Other (explain):        |     |    |                                                                                                                                                      |

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

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

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4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

P371, P394, P430, P437, P438, P442, P443, P447, P450, P456, P461, I549P, I551P, and I613P.

Mine Unit 4 Restoration Data

| Well | Date     | U <sub>3</sub> O <sub>8</sub> | V  | Total CO <sub>3</sub> | pH | Ca | Na | Cl | SO <sub>4</sub> | Cond |
|------|----------|-------------------------------|----|-----------------------|----|----|----|----|-----------------|------|
| P371 | 01/05/12 | 5.67                          |    |                       |    |    |    |    |                 | 2007 |
| P371 | 01/10/12 | 5.47                          |    |                       |    |    |    |    |                 |      |
| P371 | 01/18/12 | 5.50                          |    |                       |    |    |    |    |                 | 1935 |
| P371 | 01/25/12 | 5.34                          |    |                       |    |    |    |    |                 |      |
| P394 | 01/05/12 | 8.41                          | <1 |                       |    |    |    |    |                 | 4260 |
| P394 | 01/10/12 | 8.48                          |    |                       |    |    |    |    |                 |      |
| P394 | 01/18/12 | 8.11                          |    |                       |    |    |    |    |                 | 4210 |
| P394 | 01/25/12 | 8.30                          |    |                       |    |    |    |    |                 |      |
| P430 | 01/05/12 | 3.32                          |    |                       |    |    |    |    |                 | 1087 |
| P430 | 01/10/12 | 3.35                          |    |                       |    |    |    |    |                 |      |
| P430 | 01/18/12 | 3.31                          |    |                       |    |    |    |    |                 | 1083 |
| P430 | 01/25/12 | 3.40                          |    |                       |    |    |    |    |                 |      |
| P437 | 01/05/12 | 6.12                          |    |                       |    |    |    |    |                 | 3750 |
| P437 | 01/10/12 | 6.30                          |    |                       |    |    |    |    |                 |      |
| P437 | 01/18/12 | 6.01                          |    |                       |    |    |    |    |                 | 3750 |
| P438 | 01/05/12 | 2.07                          |    |                       |    |    |    |    |                 | 3850 |
| P438 | 01/10/12 | 2.43                          |    |                       |    |    |    |    |                 |      |
| P438 | 01/18/12 | 2.53                          |    |                       |    |    |    |    |                 | 3860 |
| P438 | 01/25/12 | 3.15                          |    |                       |    |    |    |    |                 |      |
| P442 | 01/05/12 | 10.54                         |    |                       |    |    |    |    |                 | 3920 |
| P442 | 01/10/12 | 10.36                         |    |                       |    |    |    |    |                 |      |
| P442 | 01/18/12 | 10.70                         |    |                       |    |    |    |    |                 | 3920 |
| P442 | 01/25/12 | 10.31                         |    |                       |    |    |    |    |                 |      |
| P443 | 01/05/12 | 5.12                          |    |                       |    |    |    |    |                 | 3890 |
| P443 | 01/10/12 | 5.27                          |    |                       |    |    |    |    |                 |      |
| P443 | 01/18/12 | 5.26                          |    |                       |    |    |    |    |                 | 3870 |
| P443 | 01/25/12 | 5.48                          |    |                       |    |    |    |    |                 |      |
| P447 | 01/05/12 | 3.54                          |    |                       |    |    |    |    |                 | 3940 |
| P447 | 01/10/12 | 3.52                          |    |                       |    |    |    |    |                 |      |
| P447 | 01/18/12 | 3.40                          |    |                       |    |    |    |    |                 | 3900 |
| P447 | 01/25/12 | 3.60                          |    |                       |    |    |    |    |                 |      |
| P450 | 01/05/12 | 8.86                          | <1 |                       |    |    |    |    |                 | 4420 |
| P450 | 01/10/12 | 8.97                          |    |                       |    |    |    |    |                 |      |
| P450 | 01/18/12 | 9.14                          |    |                       |    |    |    |    |                 | 4390 |
| P450 | 01/25/12 | 8.20                          |    |                       |    |    |    |    |                 |      |

Mine Unit 4 Restoration Data

| Well  | Date     | U <sub>3</sub> O <sub>8</sub> | V  | Total CO <sub>3</sub> | pH | Ca | Na | Cl | SO <sub>4</sub> | Cond |
|-------|----------|-------------------------------|----|-----------------------|----|----|----|----|-----------------|------|
| P456  | 01/05/12 | 3.50                          | <1 |                       |    |    |    |    |                 | 3300 |
| P456  | 01/10/12 | 3.64                          |    |                       |    |    |    |    |                 |      |
| P456  | 01/18/12 | 3.42                          |    |                       |    |    |    |    |                 | 3260 |
| P456  | 01/25/12 | 3.49                          |    |                       |    |    |    |    |                 |      |
| P461  | 01/05/12 | 7.86                          | <1 |                       |    |    |    |    |                 | 5060 |
| P461  | 01/10/12 | 7.97                          |    |                       |    |    |    |    |                 |      |
| P461  | 01/18/12 | 8.17                          |    |                       |    |    |    |    |                 | 5030 |
| P461  | 01/25/12 | 8.60                          |    |                       |    |    |    |    |                 |      |
| I549P | 01/05/12 | 6.89                          | <1 |                       |    |    |    |    |                 | 4600 |
| I549P | 01/10/12 | 7.04                          |    |                       |    |    |    |    |                 |      |
| I549P | 01/18/12 | 6.61                          |    |                       |    |    |    |    |                 | 4520 |
| I549P | 01/25/12 | 6.09                          |    |                       |    |    |    |    |                 |      |
| I551P | 01/05/12 | 9.29                          | <1 |                       |    |    |    |    |                 | 4150 |
| I551P | 01/10/12 | 9.23                          |    |                       |    |    |    |    |                 |      |
| I551P | 01/18/12 | 8.87                          |    |                       |    |    |    |    |                 | 4120 |
| I551P | 01/25/12 | 8.50                          |    |                       |    |    |    |    |                 |      |
| I613P | 01/05/12 | 3.18                          |    |                       |    |    |    |    |                 | 1653 |
| I613P | 01/10/12 | 3.08                          |    |                       |    |    |    |    |                 |      |
| I613P | 01/18/12 | 3.04                          |    |                       |    |    |    |    |                 | 1511 |
| I613P | 01/25/12 | 3.18                          |    |                       |    |    |    |    |                 |      |



CROW BUTTE MINE  
MONTHLY RESTORATION REPORT  
JANUARY 2012  
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<br>BL5-5, I676P, P690, P691,<br>P707, P709, P773, P790,<br>P800, I854P, P962, P1099,<br>P1155, P1209, and P1232. |
| 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:

BL5-5, I676P, P709, P773, P790, P800, I854P, and P1232.

Mine Unit 5 Restoration Data

| Well  | Date     | U <sub>3</sub> O <sub>8</sub> | V   | Total CO <sub>3</sub> | pH | Ca | Na | Cl | SO <sub>4</sub> | Cond |
|-------|----------|-------------------------------|-----|-----------------------|----|----|----|----|-----------------|------|
| BL5-5 | 01/05/12 | 0.53                          |     |                       |    |    |    |    |                 | 3280 |
| BL5-5 | 01/10/12 | 0.69                          |     |                       |    |    |    |    |                 |      |
| BL5-5 | 01/18/12 | 0.38                          |     |                       |    |    |    |    |                 | 3290 |
| BL5-5 | 01/25/12 | 0.83                          |     |                       |    |    |    |    |                 |      |
| I676P | 01/05/12 | 8.84                          | <1  |                       |    |    |    |    |                 | 2749 |
| I676P | 01/10/12 | 9.33                          |     |                       |    |    |    |    |                 |      |
| I676P | 01/18/12 | 9.09                          |     |                       |    |    |    |    |                 | 2728 |
| I676P | 01/25/12 | 8.70                          |     |                       |    |    |    |    |                 |      |
| P709  | 01/05/12 | 8.78                          | <1  |                       |    |    |    |    |                 | 3070 |
| P709  | 01/10/12 | 9.62                          |     |                       |    |    |    |    |                 |      |
| P709  | 01/18/12 | 9.53                          |     |                       |    |    |    |    |                 | 3100 |
| P709  | 01/25/12 | 9.72                          |     |                       |    |    |    |    |                 |      |
| P773  | 01/05/12 | 2.36                          | <1  |                       |    |    |    |    |                 | 2254 |
| P773  | 01/10/12 | 2.62                          |     |                       |    |    |    |    |                 |      |
| P773  | 01/18/12 | 2.38                          |     |                       |    |    |    |    |                 | 2353 |
| P773  | 01/25/12 | 2.79                          |     |                       |    |    |    |    |                 |      |
| P790  | 01/05/12 | 3.49                          | 1.2 |                       |    |    |    |    |                 | 1728 |
| P790  | 01/10/12 | 3.52                          |     |                       |    |    |    |    |                 |      |
| P790  | 01/18/12 | 2.82                          |     |                       |    |    |    |    |                 | 1527 |
| P790  | 01/25/12 | 2.91                          |     |                       |    |    |    |    |                 |      |
| P800  | 01/05/12 | 3.56                          | <1  |                       |    |    |    |    |                 | 3020 |
| P800  | 01/10/12 | 3.88                          |     |                       |    |    |    |    |                 |      |
| P800  | 01/18/12 | 3.38                          |     |                       |    |    |    |    |                 | 3040 |
| P800  | 01/25/12 | 3.43                          |     |                       |    |    |    |    |                 |      |
| I854P | 01/05/12 | 2.49                          | <1  |                       |    |    |    |    |                 | 3560 |
| I854P | 01/10/12 | 2.60                          |     |                       |    |    |    |    |                 |      |
| I854P | 01/18/12 | 2.32                          |     |                       |    |    |    |    |                 | 3480 |
| I854P | 01/25/12 | 2.48                          |     |                       |    |    |    |    |                 |      |
| P1232 | 01/10/12 | 9.34                          |     |                       |    |    |    |    |                 |      |
| P1232 | 01/18/12 | 10.11                         |     |                       |    |    |    |    |                 | 2980 |
| P1232 | 01/25/12 | 10.22                         |     |                       |    |    |    |    |                 |      |

CROW BUTTE MINE  
MONTHLY RESTORATION REPORT  
JANUARY 2012  
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  |                                                            |
| d. Wellfield Recirculation |     | X  |                                                            |
| e. Other (explain):        | X   |    | Wellfield bleed for excursion control.<br>P1567 and P1633. |

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:

P1567 and P1633

# Mine Unit 6 Restoration Data

| Well  | Date     | U <sub>3</sub> O <sub>8</sub> | V | Total CO <sub>3</sub> | pH | Ca | Na | Cl | SO <sub>4</sub> | Cond |
|-------|----------|-------------------------------|---|-----------------------|----|----|----|----|-----------------|------|
| P1567 | 01/05/12 | 11.23                         |   |                       |    |    |    |    |                 | 3690 |
| P1567 | 01/10/12 | 10.80                         |   |                       |    |    |    |    |                 |      |
| P1567 | 01/18/12 | 11.95                         |   |                       |    |    |    |    |                 | 3670 |
| P1567 | 01/25/12 | 11.32                         |   |                       |    |    |    |    |                 |      |
| P1633 | 01/05/12 | 22.68                         |   |                       |    |    |    |    |                 | 4000 |
| P1633 | 01/10/12 | 22.34                         |   |                       |    |    |    |    |                 |      |
| P1633 | 01/18/12 | 22.53                         |   |                       |    |    |    |    |                 | 3950 |
| P1633 | 01/25/12 | 21.70                         |   |                       |    |    |    |    |                 |      |