

**CAMECO RESOURCES  
CROW BUTTE OPERATION**



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January 13, 2021

USPS PRIORITY MAIL  
SIGNATURE CONFIRMATION

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

Annual Report of Changes, Tests, or Experiments  
License No. SUA-1534  
Docket No. 40-8943

ATTN: Document Control Desk:

Crow Butte Resources, Inc. (CBR) d/b/a Cameco Resources – Crow Butte Operation (CBO) is providing this annual report summarizing the changes, tests or experiments made under License Condition 9.4 of SUA-1534 during calendar year 2020. This report is made in accordance with the reporting requirements contained in License Condition 9.4 (E).

CBR's second renewal of its source material license was received November 5, 2014. The renewed license contained Performance Based License Conditions (PBLC). In a PBLC, CBR is allowed to make changes or conduct tests and experiments under certain conditions. These changes, tests, and experiments must be reviewed and approved by the CBR Safety and Environmental Review Panel (SERP). During 2020, the CBR SERP did not approve any changes.

The following materials are attached to provide the required summary information and documentation required by License Condition 9.4 (E).

- No SERP evaluations were performed or approved during 2020. Crow Butte is currently focused on restoration activities in Mine Units 2-7, and only maintains a small production bleed in the remaining Mine Units to control groundwater movement.

By letter dated October 19, 2009, in the response to violation of 10 CFR 40.42 (h)(1) and 10 CFR 40.42 (i), CBO submitted a request for an alternate decommissioning (groundwater restoration) schedule for mine units 2 through 5. CBO also indicated in this request that

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an annual review of the groundwater decommissioning schedule would be added to the Annual Summary of Changes list. By letter dated December 9, 2019, CBO requested an alternate decommissioning schedule for the full site, which is currently being reviewed by NRC staff.

By a letter dated April 3, 2018, which was amended by a letter dated July 3, 2018, CBO requested a license amendment granting an alternate decommissioning schedule for Mine Units 2-6. On November 8, 2018, the schedule proposed in the license amendment request was approved by email. By letter dated December 9, 2019, CBO requested a license amendment granting an alternate decommissioning schedule for the full site, which is currently being reviewed by NRC staff. This request was amended by a letter dated August 3, 2020. The amended letter provides notification to NRC that Mine Units 2 and 4 have been placed back into the treatment phase of restoration based on stability sampling results obtained beginning in the third quarter of 2018.

Mine Unit 2 was removed from stability monitoring and treatment activities resumed in August 2020. The mine unit currently remains in treatment. CBO projects treatment to continue into the second quarter of 2021 and anticipates re-initiating stability monitoring in the third quarter of 2021.

While ensuring stability trends in MU3, well P246 (WH7 MU3) exceeded the restoration value for uranium. The value for uranium went from .09 (9/26/14) to 4.04 (3/29/17). Based on a discussion with Nebraska Department of Environmental Quality (NDEQ), MU3 was returned to IX / RO treatment on September 15, 2017 in order to spot treat the well. This treatment has been completed and Mine Unit 3 has been returned to stability monitoring, with the first stability samples collected in September 2018. The mine unit currently remains in stability monitoring. CBO anticipates submitting an Alternate Concentration Limit (ACL) request for this mine unit in the third quarter of 2021.

Similar to the situation in Mine Unit 2, Mine Unit 4 was removed from stability monitoring and treatment activities resumed in September 2020. The mine unit currently remains in treatment. CBO projects treatment to continue into the second quarter of 2021 and anticipates re-initiating stability monitoring in the third quarter of 2021.

CBO initiated stability monitoring in Mine Unit 5 late in August 2018. CBO projects that an ACL request will be submitted for Mine Unit 5 during the fourth quarter of 2022.

Active restoration activities, especially RO treatment and addition of reductant, continue in Mine Unit 6. CBO projects that Mine Unit 6 will be placed in stability monitoring during the third quarter of 2021.

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On November 6, 2018, CBO ceased mining in Mine Unit 7 and initiated restoration activities in this mine unit. Treatment activities continue in Mine Unit 7 and are projected to continue through the third quarter of 2022.

The remaining mine units (8-11) are currently in standby mode. A Gant chart demonstrating the projected restoration schedule for Mine Units 2-7 as well as the planned schedule for Mine Unit 8-11 is attached at the end of this report.

If you have any questions or require further information, please do not hesitate to contact me at (308) 665-2215 ext. 117.

Sincerely,  
CAMECO RESOURCES  
CROW BUTTE OPERATION

Walt Nelson  
SHEQ Coordinator

Enclosures: As Stated

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**Restoration Gant Chart**

