

**CAMECO RESOURCES
CROW BUTTE OPERATION**



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May 11, 2021

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

Subject: Clarification of 5-Year MIT Requirement
Source Materials License No. SUA-1534, Docket No. 40-8943

Dear Director:

As part of the environmental monitoring program at Cameco Resources, Crow Butte Operation (CBO), the integrity of wells is confirmed before the well is placed in service and every five years thereafter via mechanical integrity test (MIT). The MIT is required in Source Materials License SUA-1534 License Condition 10.1.4, which states in part "*Mechanical integrity tests shall be performed on each injection and production well before the wells are utilized and on wells that have been serviced with equipment or procedures that could damage the well casing. Additionally, each well shall be retested at least once each five (5) years it is in use.*" The practice at CBO has been to assign the 5-year MIT due date based on the day the well was last tested. For example, a well that was tested on May 11, 2016 would have to be retested on or before May 11, 2021. This practice has created several issues over the course of time that I will detail in the following paragraphs.

First, a larger number of initial MIT's were performed in the summer months because environmental conditions during this period allow for more outside work to be completed. CBO tries to maintain a 4-6 week cushion in the next upcoming MIT due date, so in the example above, the site would try to complete the MIT due on May 11, 2021 during late March or early April 2021. While this conservative practice has helped the site avoid wells being tested too late, it has resulted in the due dates for wells that were initially tested in the summer moving earlier and earlier in the year with each 5-year MIT cycle. As a consequence, a significant portion of wells coming due are in now in the first quarter of the year. Next year (2022) for example, 80 wells will be due in January, 107 will be due in February, and 159 will be due in March. At temperatures around 20°F MIT equipment freezes, so days when the temperature does not exceed this level do not allow any MIT's to be completed. In February 2021, the site was only able to complete 63 tests due to an extended period of cold weather. Under current practices, the site would attempt to complete at least 159 tests in February 2022. With the weather conditions that typically persist during this time of year, completing this number of tests may not be possible.

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Additionally, the current practice is inflexible, which can force work to be done in sensitive areas at times these areas would best be avoided. An example of this situation occurred in the spring of 2019. In March and April 2019, the site experienced two major winter storms that made access to portions of the wellfield difficult to nearly impossible. The bulk of the MIT's due during this timeframe were in Mine Units 6 and 8, which are located along the English Creek drainage. The ground in this part of the wellfield is normally "spongy" in the spring anyway, and in 2019 this part of the wellfield was flooded with stormwater runoff throughout the spring. The site purchased plastic treads and committed a large amount of equipment and manpower to complete the required MIT's. If the site had the flexibility to delay the MIT of these wells into the summer or early fall, this more sensitive area could have been avoided until conditions were more favorable.

One potential solution to this emerging issue would be to change the way the requirement is interpreted. If MIT due dates were determined based on the calendar *year* the most recent MIT was completed rather than the calendar *day* the most recent MIT was completed, both issues described above would be resolved. In this scenario, the well that was last tested on May 11, 2016 would be due to be retested in 2021, not on a particular day in 2021. CBO believes that the language in Source Materials License SUA-1534 License Condition 10.1.4 allows for the requirement for 5-year MIT to be so interpreted.

The CBO SHEQ Coordinator recently communicated this issue to staff at the Nebraska Department of Environment and Energy (NDEE). The state of Nebraska requirement for 5-year completion is codified in Title 122, which in part reads as follows:

003 For Class III Injection Wells, monitoring requirements shall, at a minimum, include:

003.01 The analysis of the physical and chemical characteristics of the injected fluid with sufficient frequency to yield representative data on its characteristics;

003.02 Installation and use of devices to monitor the injection pressure, flow rate and volume as specified by the Department;

003.03 Demonstration of mechanical integrity pursuant to Chapter 18 of this Title at least once every five years during the life of the well;

In response to the SHEQ Coordinator's request, NDEE has provided a clarification memo (attached) which states that this requirement shall be interpreted as requiring MIT every five calendar years NOT to the exact date, but the overall year.

CBO is requesting similar clarification from NRC on this issue. In addition to the reasons for such clarifications provided above, CBO believes that this change will not result in any environmental harm for the following reasons:

1. The frequency of 5-year MIT's will not change substantially over time. In the first cycle after this change in practice is implemented, some wells may be tested 5 years and several weeks or months

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- after the most recent test while others may be tested in a time period several months less than 5 years, but this will likely even out in successive cycles. Over time, the time period between tests will average out to a five-year frequency.
2. The site has other environmental monitoring requirements in place that protect from a failed well impacting the environment that will still be in place. The environmental monitoring program includes biweekly sampling of shallow monitor wells located every four acres throughout the wellfield. In actuality, these monitor wells would be more likely to detect a failed well impacting the environment than the 5-year MIT because they are sampled every other week.
 3. The flexibility provided by implementing a practice consistent with the referenced NDEE memo would allow the site to schedule MITs in a way that avoids environmentally sensitive areas when these areas are especially vulnerable. In the 2019 example discussed previously, the site could have scheduled the Mine Unit 6 and 8 MITs for late summer when the ground had dried out and avoided potential damage to the area.

CBO appreciates NRC's consideration in this matter. Please see the attached documents including the referenced memo from Amanda Osborn of NDEE as well as the cover letter accompanying the memo. If you have further questions regarding this request for clarification similar to that provided by NDEE, 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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Ron Burrows - NRC

CBO – File

cc: CR – Electronic File

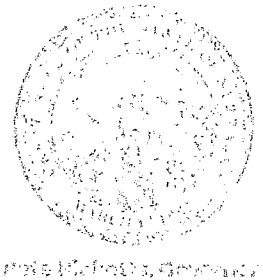
Attachments: As stated

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DEPT. OF ENVIRONMENT AND ENERGY

MAY 06 2021



Cameco Resources
86 Crow Butte Road
PO Box 169
Crawford, NE 69339-0169

RE: Crow Butte Resources, Inc.
NDEQ ID: 63416
Subject: Underground Injection Control MIT Requirements

To Whom It May Concern:

An email received on April 6, 2021, from Walter Nelson (Crow Butte Resources, Inc., CBR) described a compounding issue regarding the five-year MIT plan implemented at their facility. The Department has determined that the language in Title 122, Chapter 20.003.03 shall be interpreted as requiring MIT every five calendar years NOT to the exact date, but within the overall year, as described in the attached memo.

If you have any questions concerning this authorization, please feel free to contact me at (402) 471-4290 or via email at amanda.osborn@nebraska.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "A. Osborn", is placed above the typed name.

Amanda Osborn
UIC/ME Coordinator
Ground Water Section
Drinking Water and Groundwater Division

Enclosure

NEBRASKA

DEPT. OF ENVIRONMENT AND ENERGY

MEMORANDUM

To: File

Through: Kory Winters, David Miesbach, Sue Dempsey

From: Amanda Osborn

Date: April 20, 2021

RE: Crow Butte Resources, Inc.
NDEQ ID: 63416
Subject: Crow Butte Five-Year MIT's

An email received on April 6, 2021, from Walter Nelson (Crow Butte Resources, Inc., CBR) described a compounding issue regarding the five-year MIT plan implemented at their facility. Their interpretation of the MIT requirement described in Title 122, Chapter 20.003.03, "demonstration of mechanical integrity pursuant to Chapter 18 of this Title at least once every five years during the life of the well," has been to complete MIT every five years to the exact date, or before. This has created a compounding issue of being able to meet this time requirements, as dates are pushed into late winter/early spring (a timeframe in which performing MIT is difficult to impossible depending on the specific weather conditions and unpredictability).

CBR has requested guidance moving forward in dealing with this issue and avoiding noncompliance from missed MIT due dates. David Miesbach, Kory Winters, and I discussed several possible solutions, and determined that the language in Title 122, Chapter 20.003.03 shall be interpreted as requiring MIT every five calendar years NOT to the exact date, but the overall year (i.e. an MIT that is due to be performed in 2021 shall be completed any time in the calendar year of 2021 in order to meet the five-year MIT requirement). This interpretation will allow CBR to meet MIT requirements without potential noncompliance incidents due to things outside of their control (i.e. weather, seasonal changes in groundwater, etc.).

The email correspondence described in this memo is attached. If you have any questions, or need more information, please contact me.