



**Written submission from
Cameco Corporation**

**Mémoire de
Cameco Corporation**

In the Matter of the

À l'égard de

**Cameco Corporation, Beaverlodge
Project**

**Cameco Corporation, le projet de
Beaverlodge**

Application for the Licence Revocation and
Transfer of Properties to Saskatchewan
Institutional Control Program

Demande de révocation de permis et de
transfert de propriétés au programme de
contrôle institutionnel de la Saskatchewan

Commission Public Hearing

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Request for a Licensing Decision: Revocation of the Beaverlodge Waste Facility Operating Licence, WFOL-W5-2120.0/2025

Submitted by:
Cameco Corporation

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Executive Summary

Following the implementation of the Province of Saskatchewan's Institutional Control Program (IC Program), the Beaverlodge Management Framework (the Framework) was developed to provide a clear scope for the management of the decommissioned Beaverlodge properties and a systematic process for assessing potential site-specific risks to facilitate the transfer of Beaverlodge properties to the IC program. The Framework was developed cooperatively between Cameco Corporation (Cameco) and the Joint Regulatory Group (JRG) consisting of the Canadian Nuclear Safety Commission (CNSC), the Saskatchewan Ministry of Environment (SkMOE), Department of Fisheries and Oceans (DFO) and Environment and Climate Change Canada (ECCC). The Framework has also been reviewed with public stakeholders, including the Northern Saskatchewan Environmental Quality Committee (EQC), as well as residents and leaders of the Uranium City community.

During the 2013 CNSC licence renewal process for the Beaverlodge properties, Cameco presented the Framework to the Commission. The stages of the Framework included gathering detailed site information, assessing potential remedial options, selecting the final remedial options to be implemented, and determining how their performance would be evaluated.

In following the Framework, Cameco developed the *Beaverlodge Path Forward Report* (Path Forward) to establish an agreed upon remediation plan paired with evaluation criteria and the expected timeline for transferring properties into the IC Program. The Path Forward confirmed that natural recovery paired with additional site-specific remedial options was the best long-term management scenario for the properties. The remedial options that were selected were considered to be good engineering practices and expected to result in localized improvements in water quality.

On May 27, 2013, the Commission accepted the proposed Path Forward and issued Cameco a 10-year licence to proceed with the selected remedial work and to continue management of the properties. The Framework and the Path Forward help form the objective of the licensing basis of the 10-year licence granted by the Commission, with the goal of ensuring human health and ecological risk are managed to acceptable levels to facilitate release from CNSC licensing over the course of the licence term. As a condition for transferring properties to the IC program, the properties are required to meet established performance objectives, and obtain a release from CNSC licensing. Thus, once properties meet the conditions for release from CNSC licensing, they will be considered for transfer to the IC Program.

The Path Forward included criteria to establish that risks have been managed and that the properties would be eligible for transfer to the IC Program. The criteria consisted of the overall performance objectives of "safe, secure and stable/ improving". To facilitate release from licensing and transfer to the IC Program, Cameco proposed advancing properties in a staged approach. In total, 43 properties have now been released from licensing and either transferred into the IC Program or free released depending on the presence of historical mining/milling activities.

In 2023, Cameco was granted a two-year licence term (expiring May 31, 2025) to allow adequate time for regulatory processes, public engagement, and document preparation to support the release of the remaining decommissioned Beaverlodge properties and their transfer to the IC Program. Cameco submitted a Final Closure Report regarding the final set of 27 decommissioned Beaverlodge properties for regulatory review on November 22, 2023. An application was submitted on February 5, 2024, requesting a hearing with the CNSC regarding the revocation of licence WFOL-W5-2120.0/2025. Cameco has also made application to the Province of Saskatchewan that the properties be: (1) formally released from further decommissioning and reclamation activity by the SkMOE; and (2) accepted into the IC Program

by the Saskatchewan Ministry of Energy and Resources (SkMER). Cameco has verified that the properties meet the performance objectives and, as such, are eligible for release from CNSC licensing.

Following consultation with stakeholders and the submission of responses to SkMOE, CNSC and SkMER comments on the application, the SkMER issued a letter of intent on July 4, 2024 (G. McKellar to R. Snider) stating that the prescribed conditions specified within Section 3 of the *Reclaimed Industrial Sites Regulations* are satisfied. SkMOE issued a letter of intent on August 7, 2024 (G. Bihun to M. Webster) stating Cameco has fulfilled their requirements and obligations as described in the approved decommissioning and reclamation plans with the Ministry, and that it is the intent of the Ministry to grant Cameco a release from decommissioning and reclamation requirements in accordance with Section 22 of *The Mineral Industry Environmental Protection Regulations, 1996*. The issuance of the letters by SkMER and SkMOE follows the same process undertaken in 2021 regarding the earlier release of properties from CNSC licensing.

Given that Cameco has fulfilled the requirements and obligations described in the Path Forward for these properties and the Province has provided notice that it will grant a Release from Decommissioning and Reclamation under the condition that the properties are released from CNSC licensing, Cameco is therefore requesting that the CNSC release the remaining 27 properties from CNSC licensing, making them eligible for transfer to the Province of Saskatchewan for long-term environmental stewardship under the IC Program or free-released depending on the presence of historical mining/milling activities.

1.0 INTRODUCTION

1.1 Background

1.1.1 Location

The decommissioned Beaverlodge uranium mine/mill site and associated properties are located in the northwest corner of Saskatchewan approximately 840 km north of Saskatoon (**Figure 1.1-1**). The current licensed Beaverlodge properties are divided into three main areas: the Bolger/Verna Area; the Lower Ace Creek Area; and the Tailings Management Area (TMA). Each of these main areas are made up of a number of smaller decommissioned properties.

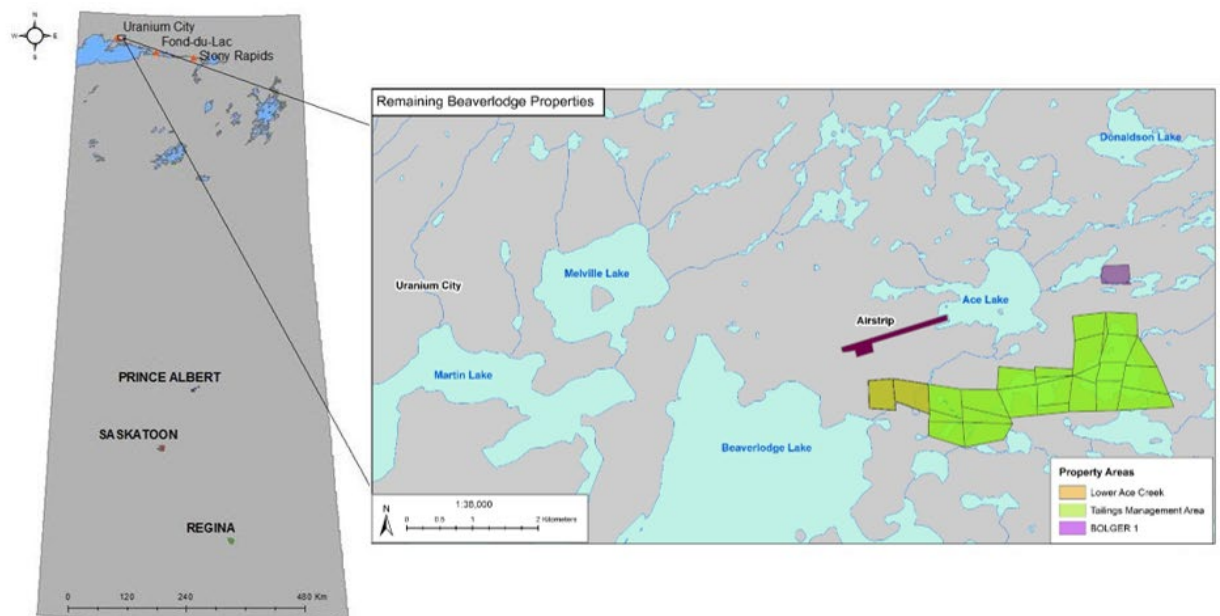


Figure 1.1-1: Location of the licensed decommissioned Beaverlodge mine and mill site

Uranium City, with a population of 91¹, is the only community with year-round access to the decommissioned Beaverlodge properties and is located approximately 8 km to the west. The closest First Nation community is Fond-du-Lac, approximately 80 km east of Uranium City. Fort Chipewyan is situated approximately 179 km to the south-west in Alberta, across Lake Athabasca.

External access to Uranium City is primarily via aircraft, although a winter ice road is established between Fond-du-Lac and Uranium City and is maintained by the provincial Department of Highways. Ice conditions permitting, the road is typically open for a period of two to five weeks in February and March.

¹ Based on the 2021 Census

1.1.2 History

The decommissioned Beaverlodge uranium mine/mill site and associated properties were operated by the federal Crown Corporation known as Eldorado Mining and Refining Limited (Eldorado) between 1952 and 1982. During active mining, the primary focus of activity was on an area northeast of Beaverlodge Lake where the Fay, Ace and Verna mine shafts were developed to access the underground ore body. Over the 30-year production period, most of the ore used to feed the mill came from these areas. A smaller portion of ore (about 5%) was obtained from satellite mines mostly located within the Ace Creek watershed that were developed and operated for shorter periods of time.

Operational practices at Beaverlodge were similar to those employed at other Canadian mining operations during that period and reflected the environmental regulatory framework in place at the time. In that regard, a portion of the mill tailings was placed in nearby naturally occurring waterbodies, and active treatment of mine water and water exiting the tailings management area (TMA) was not initiated until 1971 and 1976, respectively.

Production at Beaverlodge continued until 1982 when the operation was shut down in preparation for decommissioning and Eldorado developed a decommissioning plan. Following the completion of decommissioning activities in 1985, Beaverlodge became the first Canadian uranium mine to be formally decommissioned following a regulatory approved plan.

As part of this plan to meet the accepted decommissioning objective (i.e., safe, and stable condition, with activities based on good engineering practice of the day), buildings and structures were removed or dismantled, and all mine openings were permanently sealed. Eldorado left the decommissioned Beaverlodge properties in a physically and radiologically safe and secure condition. It was expected that environmental conditions on the decommissioned properties and in downstream waterbodies, would naturally recover over an extended period. Since then, monitoring has been ongoing to ensure the area remains physically safe and that environmental conditions continue to naturally recover.

In 1988, Eldorado Nuclear Limited (formerly known as Eldorado Mining and Refining Limited) merged with the Saskatchewan Mining Development Corporation to form Cameco. At that time, the management of the decommissioned Beaverlodge properties became the responsibility of Cameco, while the Government of Canada, through Canada Eldor Inc. (CEI) retained responsibility for the financial liabilities associated with the properties. Since 1988, Cameco has carried out routine environmental monitoring, environmental investigations, maintenance work, targeted remediation and engagement activities.

Residual risks with respect to the naturally recovering environmental conditions in waterbodies on and downstream of the decommissioned Beaverlodge properties are managed through the issuance of a Healthy Fish Consumption Guideline by the Saskatchewan Health Authority (SHA) and SkMOE. This guideline provides recommendations to the public regarding consumption of fish and water from Beaverlodge, Martin and Cinch Lakes, as well as other waterbodies associated with the Beaverlodge properties.

1.1.3 Business Plan

Cameco's objective in managing the decommissioned Beaverlodge properties is to protect the health and safety of the public and environment, and to meet the requirements for transfer of the

remaining properties to the Province of Saskatchewan's Institutional Control Program (IC Program). Thus far, forty-two decommissioned Beaverlodge properties have been transferred into the IC Program and one property, as well as portions of others that were undisturbed by mining activities, have been free released.

In 2023, Cameco applied for and was granted a two-year licence term (expiring May 31, 2025) to allow adequate time for regulatory processes, public engagement, and document preparation to support the release of the remaining decommissioned Beaverlodge properties and their transfer to the IC program.

Cameco is now requesting the final 27 properties be released from CNSC licensing, to facilitate their transfer to the IC Program for long-term management by the Province of Saskatchewan. This will result in the revocation of the waste facility operating licence.

1.1.3.1 Saskatchewan Institutional Control program

As part of the promulgation of the *Reclaimed Industrial Sites Act* (RISA) and the *Reclaimed Industrial Sites Regulations* (RISR) in 2007, the Government of Saskatchewan implemented the *IC Program for the Post Closure Management of Decommissioned Mine/Mill Properties Located on Crown Land in Saskatchewan* (SkMER 2009). The intention of the Act was to set out the conditions by which the Government of Saskatchewan would accept responsibility for lands that; as a consequence of development and use, require long-term monitoring and, in certain circumstances, maintenance.

In Saskatchewan, the responsible custodian under the IC Program is the Ministry or Ministries assigned responsibility for implementing and managing the IC Program. The legislative authority to implement and enforce the IC Program is found in the RISA and RISR. To date, the Saskatchewan Ministry of Energy and Resources (SkMER) is the provincial Ministry that has been assigned the responsibility for managing the IC Program (i.e., the Custodian).

Activities undertaken by the Custodian under the IC Program can range from permanently recording the location of a remediated site to conducting regular inspections, sampling, and maintaining the property. The Custodian also has the authority to address unforeseen events that could potentially arise at a particular site.

The IC Program addresses all aspects of conventional closed mines as well as the uranium-specific issues of radioactive waste management. This includes those defined in the articles of the International Atomic Energy Agency's (IAEA) Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, all applicable provincial acts and regulations, and the federal *Nuclear Safety and Control Act* (NSCA). The program includes a formal, publicly accessible registry and document repository.

A site cannot be accepted into the IC Program until remediation activities have been completed and the relevant regulatory authorities have issued a release.

1.1.3.2 Beaverlodge Management Framework

In response to the implementation of the IC Program, the Beaverlodge Management Framework (Cameco 2009) was developed cooperatively between Cameco and the Joint Regulatory Group (JRG).

The Framework provides a clear scope for the management of the decommissioned Beaverlodge properties and a systematic process for assessing potential residual site-specific risks to allow decisions to be made regarding the transfer of properties to the IC Program. The accepted Framework has been reviewed by public stakeholders, including the Northern Saskatchewan Environmental Quality Committee (including representatives of the Athabasca Basin communities), as well as residents and leaders of Uranium City. Using the Framework, the following five general stages (**Figure 1.1-2**) are applied to each property:

- Establish a comprehensive foundation of information upon which residual risks can be assessed.
- Assess the residual risk posed by the properties.
- If necessary, develop and assess reasonable remedial options that could mitigate residual risk on or immediately downstream the properties.
- Implement selected remedial option(s) and monitor results.
- If implemented options are successful in achieving the expected benefit or if it is determined that nothing more could reasonably be done to mitigate the residual risk(s) beyond natural recovery, then an application will be made to transfer the property to the IC program.

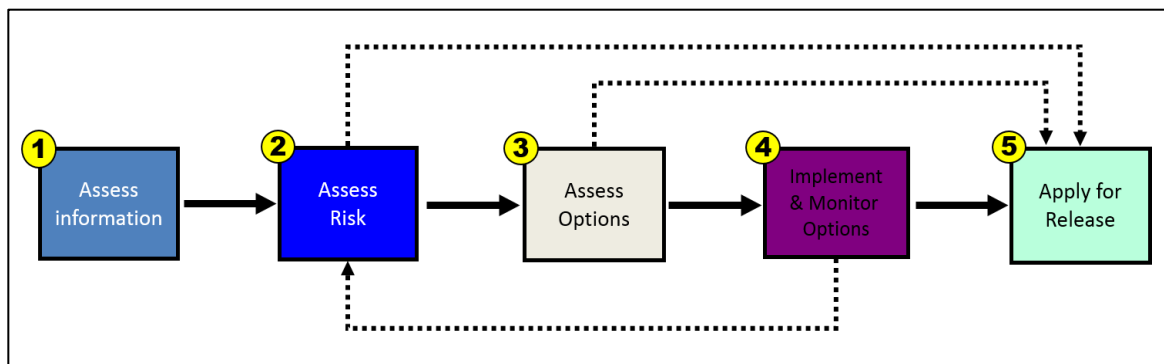


Figure 1.1-2: Simplified Beaverlodge Management Framework.

In progressing through the Framework, Cameco gathered extensive information regarding environmental conditions and land use on the decommissioned properties through a combination of routine monitoring and special investigative studies. To inform these activities, a Remedial Options Workshop was held in 2009 to consider what additional activities could be completed to improve environmental conditions.

The 2009 workshop was attended by representatives of regulatory and other government agencies, Uranium City residents, the Métis Nation Saskatchewan (MN-S) and the Northern Saskatchewan Environmental Quality Committee (NSEQC) representing the Athabasca Basin communities of Uranium City, Stony Rapids, and the Fond du Lac and Hatchet Lake First Nations. During the 2009 workshop, a list of potential remedial options was developed for consideration, and it was recognized that additional site-specific information was required before decisions could be made regarding the benefit of implementing remedial options.

As a result, studies were completed to gather additional information. Results from routine monitoring and 20 special investigative studies completed between 2009 and 2012, combined with historical information, were used to develop the Beaverlodge Quantitative Site Model (QSM; SENES 2012).

The QSM was built as a tool to assess the effectiveness of potential remediation options for the decommissioned Beaverlodge properties and to predict the natural recovery in Beaverlodge area water bodies based on information gathered in the first phase of the Framework. Once the QSM was developed, a second Remedial Options Workshop was conducted in 2012, which included participants from Uranium City, including Elders, youth and local leadership, as well as representatives of the NSEQC (Athabasca Sub-committee) representing six Athabasca Basin communities. Also in attendance at this workshop were representatives from the JRG, Cameco, and a variety of third-party subject matter experts. This workshop presented various remedial options, their implementation costs, as well as their expected environmental benefits as evaluated in the QSM. Workshop results informed the assessment of potential remedial options and were instrumental in development of the Beaverlodge Path Forward Report (Path Forward) (Cameco 2012) and establishing the Beaverlodge Performance Objectives and Indicators.

1.1.3.3 Beaverlodge Path Forward Report

The Path Forward provided a checklist and schedule of additional remedial activities to be implemented on the decommissioned Beaverlodge properties to address residual risk on the properties and prepare them for release from CNSC licensing and transfer to the IC Program. These remedial activities included measures considered to be good engineering practice with the potential to result in localized improvement of environmental conditions, or to facilitate the ongoing physical and radiological safety of the properties. However, none of the options assessed during development of the Path Forward were predicted to significantly accelerate the natural recovery of downstream impacted waterbodies, such as Beaverlodge, Martin or Cinch Lakes.

The Path Forward also described the performance objectives by which to assess the effectiveness of the implemented remedial activities. Once the remedial activities have been implemented, and the properties shown to meet the site performance objectives, an application can then be made for a Release from Decommissioning and Reclamation from SkMOE, release from CNSC licensing and, where applicable, transfer to the IC Program for long-term monitoring and stewardship or free release depending on the presence of historical mining/milling activities.

The Framework and the Path Forward were presented to the CNSC during the Beaverlodge re-licensing hearing in 2013 and have helped to form the licensing basis since that time.

1.1.3.4 Performance Objectives and Indicators

Cameco presented the criteria to determine the eligibility for release from CNSC licensing to the Commission with the intent that each of the decommissioned Beaverlodge properties would be assessed through the Framework. The performance objectives for the decommissioned Beaverlodge properties of “safe, secure, and stable/improving” are defined as follows:

- Safe – The site is safe for unrestricted public access. This objective is to ensure that the long-term safety is maintained.
- Secure – There must be confidence that long-term risks to public health and safety have been assessed by a qualified person and are acceptable.
- Stable/Improving – Environmental conditions (e.g., water quality) on and downstream of the decommissioned properties are stable and continue to naturally recover as predicted.

To determine if a property is meeting the performance objectives, site specific performance indicators were established (**Figure 1.1-3**). Table 1-1 provides an overview of the performance

indicators as presented to the Commission by CNSC staff during the 2014 update meeting. The applicable indicators vary depending on the nature of the property, but generally include ensuring that: risks associated with residual gamma radiation and crown pillars are acceptable; mine openings to surface are closed and stable; boreholes (if present) are plugged; and the property is free from historical mining debris. The stable/improving objective is also related to these performance indicators but is more relevant to monitoring water quality. To verify that conditions on and downstream of the properties are stable/improving, Cameco has continued to monitor the progress of natural recovery and the expected localized improvements from the additional remedial measures implemented at the properties. Meeting these objectives will ensure that residual human health and ecological risks are managed to acceptable levels to allow for a release from licensing.

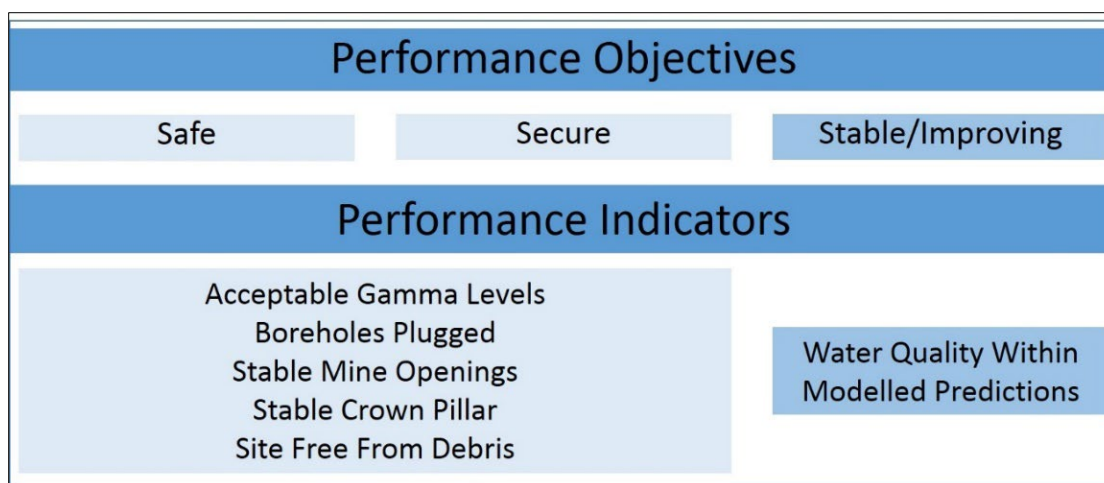


Figure 1.1-3: Performance objectives and underlying indicators.

Table 1-1: Description and acceptable criteria related to the Beaverlodge performance indicators.

Performance Indicators	Description	Acceptance Criteria
Acceptable Gamma Levels	Cameco will complete a site-wide gamma survey that will indicate where additional material may need to be applied to cover existing waste rock or tailings. Following the application of the cover material, a final survey will be completed of the remediated areas verifying that the cover was adequate.	Reasonable use scenario demonstrating gamma levels at the site are acceptable.
Boreholes Plugged	Cameco will plug all identified boreholes on the site to prevent groundwater outflow to the surface.	All boreholes have been sealed.
Stable Mine Openings*	The current concrete caps on the vertical mine openings will be replaced with new engineered caps with established designs to improve the long-term safety of the site, where applicable.	Mine openings have been secured and signed off by a qualified person, where applicable

Performance Indicators	Description	Acceptance Criteria
Stable Crown Pillar	Based on the surface subsidence in the Lower Ace Creek area, a crown pillar assessment will be completed for the four areas that have mine workings close to surface, specifically Hab, Dubyna, Bolger/Vema, and Lower Ace Creek.	Crown pillar assessed, remediated (if required), and signed off by a qualified person.
Site Free From Debris	Inspection and removal of any residual debris will be completed prior to exempting the properties from CNSC licensing and accepting them into the provincial IC program.	Site free of former mining debris at the time of transfer to IC program.
Water Quality Within Modelled Predictions	Trends established from past and future water monitoring will be compared to modelled predictions to verify: <ol style="list-style-type: none"> 1. That remedial options expected to result in localized improvements are having the desired effects; and 2. That natural recovery on and downstream of the decommissioned properties is continuing as predicted. 	Water quality data is stable/improving.

*Note: The performance indicator identified above as “Stable Mine Openings” was originally labelled as “Stable Caps on Vertical Mine Openings”. The scope of this performance indicator was expanded to include all mine openings.

1.2 Summary of Application

On behalf of CEI, Cameco Corporation (Cameco) holds the Beaverlodge Waste Facility Operating Licence (WFOL-W5-2120.0/2025), which expires May 31, 2025. The licence authorizes Cameco to possess, manage, and store the nuclear substances that are associated with the decommissioned Beaverlodge properties located in the Province of Saskatchewan, as shown in Figure 1-1 contained in Appendix A of the licence. As detailed in the Beaverlodge Licence Conditions Handbook (CNSC 2023), the authorized activities include:

- Maintenance activities associated with the decommissioned facilities.
- Environmental monitoring.
- Implementation of the remedial options identified in the Path Forward (Cameco 2012).

Cameco has successfully completed all activities identified in the Path Forward and ongoing monitoring and inspections have shown that the properties meet the applicable performance indicators. As a result, Cameco submitted an application on November 22, 2023, requesting that the final 27 decommissioned Beaverlodge properties be: (1) formally released from further decommissioning and reclamation activity by the SkMOE; (2) released from licensing by the CNSC; and (3) accepted into the provincial IC Program by the Saskatchewan Ministry of Energy and Resources (SkMER).

In accordance with the approved Beaverlodge Public Information Program (BVL-PIP), Cameco has engaged throughout the licence term with stakeholders regarding our activities, the current application, as well as the plan for long-term monitoring once the properties are transferred to the

IC Program. Following consultation with stakeholders and the submission of responses to SkMOE, CNSC and SkMER comments on the application, the SkMER issued a letter of intent on July 4, 2024 (G. McKellar to R. Snider, copied to Cameco) stating that the prescribed conditions specified within Section 3 of the *Reclaimed Industrial Sites Regulations* are satisfied. SkMOE issued a letter of intent on August 7, 2024 (G. Bihun to M. Webster) stating Cameco has fulfilled their requirements and obligations as described in the approved decommissioning and reclamation plans with the Ministry, and that it is the intent of the Ministry to grant Cameco a release from decommissioning and reclamation requirements in accordance with Section 22 of *The Mineral Industry Environmental Protection Regulations, 1996*.

The issuance of the letters of intent by SkMOE and SkMER follows the same process undertaken during previous property releases from CNSC licensing, when properties were accepted by SkMER into the IC Program or free released.

As such and as outlined in the hearing application sent to the CNSC Commission Registrar on February 5, 2024, Cameco is requesting the release of the final set of 27 decommissioned Beaverlodge properties (**Figure 1.2-1**) from licensing by the CNSC and the revocation of WFOL-W5-2120.0/2025.

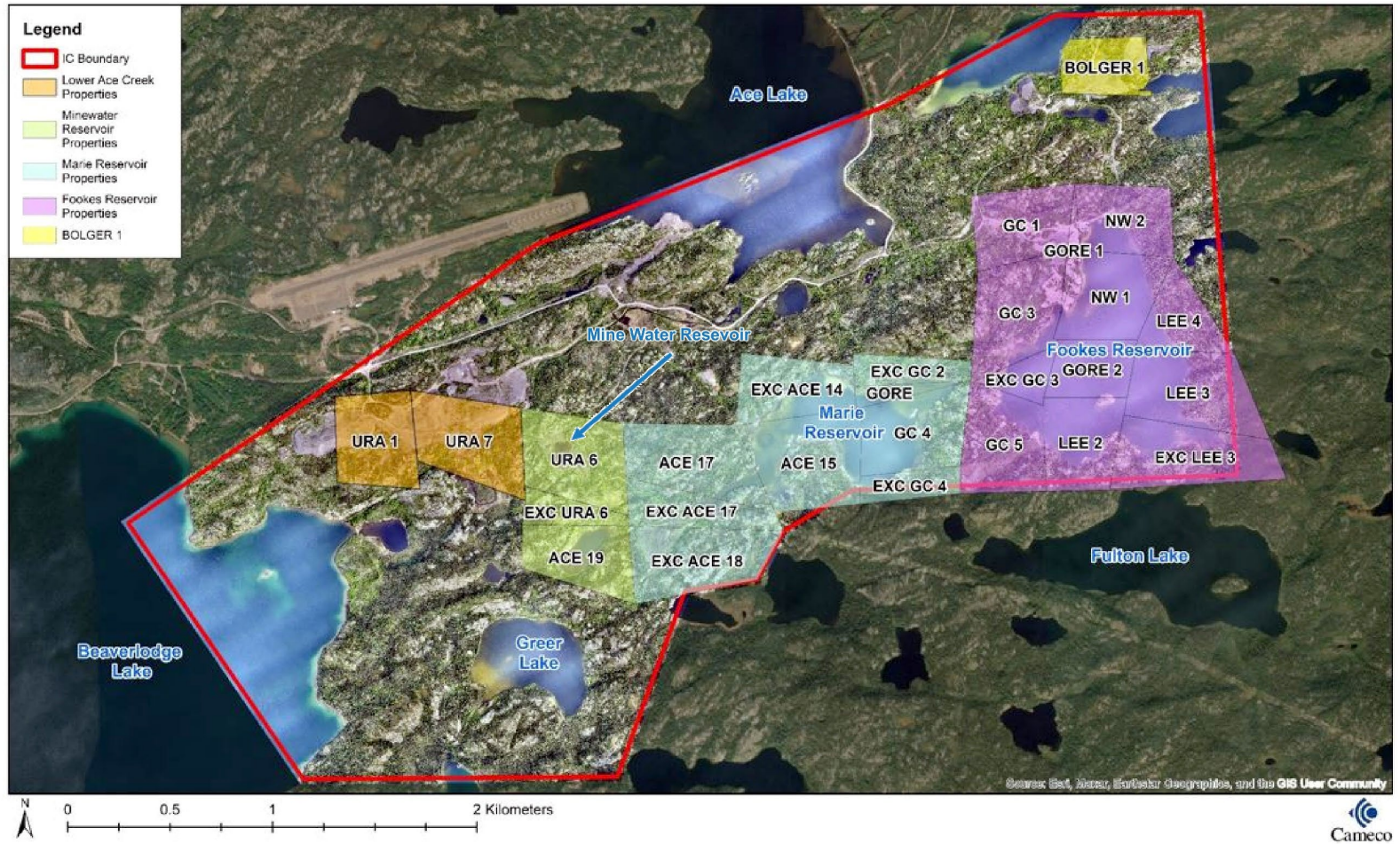


Figure 1.2-1: 27 Beaverlodge properties proposed for CNSC licence release

2.0 PERFORMANCE INDICATORS AND EVALUATION

To demonstrate that the performance objectives have been met, Cameco conducted a review of the performance indicators for each of the 27 decommissioned properties that are the subject of this application. A brief assessment is provided below and in Table 2-1. Section 3 provides a detailed discussion for each of the 27 properties.

The current condition of the 27 decommissioned properties demonstrates that the properties meet the established performance objectives and pose minimal risk to public safety or the environment. Residual risk identified in downstream waterbodies resulting from the historic operation of the Beaverlodge mine and mill, and other historic operations, are managed through drinking water advisories and the Healthy Fish Consumption Guideline issued by the SHA. As such, it is anticipated that the properties will support traditional activities, such as hunting/gathering of country foods and collection of firewood. Cameco concludes that meeting these performance objectives, deemed acceptable by regulators, ensures residual risks are managed to acceptable levels, and the 27 decommissioned properties should be considered for release from CNSC licensing and transfer into the provincial IC Program.

2.1 Acceptable Gamma Levels

A gamma survey of reasonably accessible and disturbed areas of the decommissioned Beaverlodge properties was completed in 2014 (ARCADIS SENES 2014). The survey was completed on foot or utilizing all-terrain vehicles (ATV), depending on terrain and vegetative cover, using Global Positioning System (GPS) based measurement equipment. Measurement data was averaged on a 10 m by 10 m grid, mapped and summarized to characterize residual gamma levels present on the properties.

Areas of properties that were not previously disturbed by mining/milling infrastructure were not included in the survey as existing gamma levels were considered to be at natural background, meeting the performance criteria.

Survey results were compared to the Saskatchewan *Guidelines for Northern Mine Decommissioning and Reclamation, EPB 381* (EPB-381; SkMOE 2008), which suggests that residual gamma levels on reclaimed sites should not be greater than 1 $\mu\text{Sv/hr}$ above background averaged over a 1-hectare (ha) area. Where measured gamma levels met those guidelines, those properties were considered to have met the performance indicator and to be acceptable for transfer to the IC Program, from a gamma radiation perspective.

Of the 27 decommissioned properties subject to this request, 25 were considered to have met the criteria set out in the EPB guideline. The two remaining decommissioned properties (URA 6 and URA 7), with areas where residual gamma radiation measurements exceeded the EPB 381 guideline, were subject to a regulatory approved risk-based assessment to determine the potential risks to the public.

To complete this assessment, consultation with local community members regarding their current and expected land use activities was completed in 2015 (SENES and Kingsmere 2015). This risk-based approach involved assessing the gamma radiation levels using both realistic and conservative approaches taking into account the reported land use, to estimate the incremental doses to members of the public accessing the Beaverlodge properties.

The assessment found that the estimated realistic and conservative incremental doses associated with these two properties, to be well below the public dose criterion of 1 mSv/yr (ARCADIS 2015). As a result, the 27 decommissioned properties meet the performance indicator associated with gamma radiation.

2.2 Boreholes Plugged

A total of 22 exploration boreholes were identified on the remaining 27 decommissioned properties and have been remediated following regulatory approved methods. An inflatable plug was lowered down each borehole and then a 96% cement to 4% bentonite grout mixture was pumped into the borehole, filling it to surface level. Once complete, the standpipes were then cut off at ground level.

In response to a Commission question during the 2019 hearing, Cameco canvassed membership of the Saskatchewan Mining Association (SMA) regarding the effectiveness of this methodology. This method is commonly used and has proven to be robust with no degradation observed over time.

Three of the 22 boreholes identified by Cameco were found to exhibit, or have potential to exhibit, artesian conditions when discovered. They have shown no evidence of flows since being plugged. Their locations have been provided as part of the Final Closure Report and, where accessible, are recommended for inclusion as part of future IC inspections.

As these Beaverlodge properties are transferred to the IC Program, a permanent record of borehole locations (e.g., GPS coordinates and closure methods) will be provided to the Province of Saskatchewan.

2.3 Stable Mine Openings

The only decommissioned property subject to this request that contains mine openings to surface, is URA 7.

Four mine openings were identified on URA 7. The Sorting Plan Bin and Sorting Plant Raise openings were backfilled during decommissioning and remain stable, having shown no sign of subsidence in the more than 40 years since mine closure. The Waste Haul Adit and the CB-1 Raise were excavated and resealed following a regulatory-approved method in 2016 and 2021, respectively. Specific details regarding these mine openings can be found in Section 3.

Periodic assessments of stable mine openings are expected to be completed under the IC Program and have been accounted for in the required provision of long-term monitoring and maintenance funds (see Section 4.9 for more details).

2.4 Stable Crown Pillar

The stable crown pillar performance indicator applies to the decommissioned URA 1, URA 7, and BOLGER 1 properties. A site wide geotechnical assessment of crown pillar stability on the decommissioned Beaverlodge properties has been completed by a third-party subject matter expert (SRK 2015). The goal of this work was to assess the potential for long term ground surface subsidence above the crown pillars and to investigate potential associated safety risks.

An initial assessment was completed, which considered open voids below the ground surface, including raises/shafts, declines/adits, and stopes. This assessment was completed primarily from review of available historic plans, sections, and geological information related to each mining area. No additional investigations or remediation activities were recommended for properties where the likelihood of surface subsidence was low due to the thickness of the crown pillar and the depth to the underground workings.

The crown pillars associated with the above noted properties are considered stable and do not require future inspection in IC.

2.5 Site Free From Debris

All properties historically disturbed by mining or milling activities have been inspected to locate historic debris not removed during decommissioning. GPS tracking was utilized during this clean up to ensure adequate coverage of the properties. This program involved local community members in identifying and removing debris from the decommissioned properties.

Where safe and feasible, debris was removed from the properties and disposed of in the Bolger Pit, which had been used by Eldorado during decommissioning as a disposal location, or in the Lower Fay Pit, which was used as a disposal location for residual debris in accordance with regulatory approval. Both these disposal areas have since been closed and covered following regulatory approved methods.

Members of the JRG have conducted follow-up inspections of each of the properties to confirm the property meets the relevant performance indicators.

2.6 Water Quality within Modelled Predictions

A performance indicator with respect to water quality conditions at selected monitoring stations in the Beaverlodge area was incorporated into the Path Forward to verify that implemented remedial options were having the desired effect in assisting the continued natural recovery on and downstream of the decommissioned properties. This performance indicator applies to five water quality monitoring stations (Figure 2.6-1), associated with properties that are related to this request.

The QSM was used to predict long-term water quality trends for radium-226, uranium and selenium, and to establish the performance indicators at each of these monitoring stations. If existing water quality conditions are shown to be within the range predicted by the model, then the performance indicator is met for that station and for the associated decommissioned properties.

In 2020, Cameco submitted an updated environmental risk assessment (ERA), which utilized a probabilistic modelling approach that included updated environmental monitoring data and allowed for inclusion of a wider range of environmental variability, such as that created by climate change (CanNorth 2020). The model was used to update the performance indicator at each of the water quality monitoring stations. The model and the updated performance indicators have been accepted by the regulatory agencies.

As detailed in the 2020 ERA, concentrations in the Ace Creek Watershed, Fulton Creek Watershed, and downstream are generally expected to gradually improve in the future with the exception of radium-226 in the TMA. Radium-266 concentrations in the TMA and downstream

Greer Lake are expected to continue to increase for the next 15 to 60 years (depending on the waterbody) due to the release of historically precipitated radium from sediments; after the peak is reached, levels are expected to gradually improve over the long-term. The 2020 ERA demonstrated that these increases were localized, with no effects expected in the downstream environment. Monitoring has confirmed that radium-226 measured downstream in Beaverlodge Lake remains well below the *Saskatchewan Environmental Quality Guideline* (SEQG) level of 0.11 Bq/L, with 2023 values measured at 0.055 Bq/L in Fulton Bay of Beaverlodge Lake.

The accepted performance indicators are used as bounds to be employed when evaluating trends observed in measured data. Some variability in measured results is anticipated and it is not the expectation that individual water quality results will be within the derived bounds every year; rather, that trends in surface water quality will fall within the derived bounds.

As detailed in Section 3, ongoing water quality monitoring at Beaverlodge has confirmed that water quality at the monitoring stations associated with the applicable 27 decommissioned properties is performing as expected.

Table 2-1: Beaverlodge performance indicator summary evaluation.

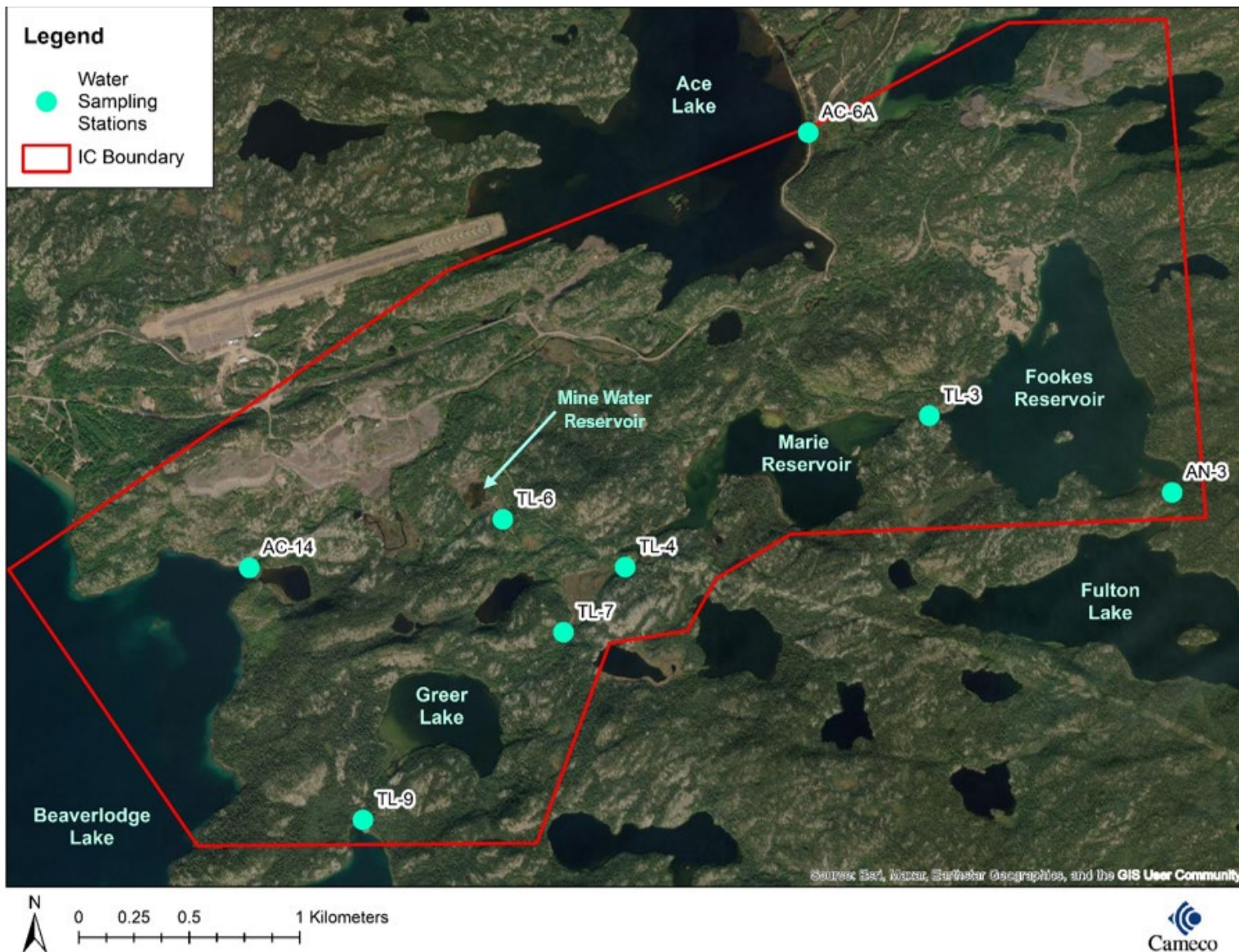
	PERFORMANCE INDICATORS ²					
	Acceptable Gamma Levels	Boreholes Plugged ¹	Stable Mine Openings ²	Stable Crown Pillar	Site Free From Debris	Water Quality Within Modelled Predictions
	Reasonable use scenario demonstrating gamma levels at the site are acceptable.	All boreholes have been sealed.	Mine openings have been secured and signed off by a qualified person, where applicable.	Crown pillar assessed, remediated (if required), and signed off by a qualified person.	Site free of former mining debris at the time of transfer to institutional control.	Water quality data is stable/improving.
URA 6	✓	✓	N/A	N/A	✓	✓
EXC URA 6	✓	N/A	N/A	N/A	✓	✓
ACE 19	✓	N/A	N/A	N/A	✓	✓
ACE 17	✓	N/A	N/A	N/A	✓	✓
EXC ACE 17	✓	N/A	N/A	N/A	✓	✓
EXC ACE 18	✓	N/A	N/A	N/A	✓	✓
EXC ACE 14	✓	N/A	N/A	N/A	✓	✓
ACE 15	✓	N/A	N/A	N/A	✓	✓
EXC GC 2	✓	N/A	N/A	N/A	✓	✓
GORE	✓	N/A	N/A	N/A	✓	✓
GC 4	✓	N/A	N/A	N/A	✓	✓
EXC GC 4	✓	N/A	N/A	N/A	✓	✓
GC 1	✓	N/A	N/A	N/A	✓	✓
NW 2	✓	N/A	N/A	N/A	✓	✓
GORE 1	✓	N/A	N/A	N/A	✓	✓
GC 3	✓	N/A	N/A	N/A	✓	✓
NW 1	✓	N/A	N/A	N/A	✓	✓
EXC GC 3	✓	N/A	N/A	N/A	✓	✓
GC 5	✓	N/A	N/A	N/A	✓	✓
GORE 2	✓	N/A	N/A	N/A	✓	✓
LEE 4	✓	N/A	N/A	N/A	✓	✓

LEE 3	✓	N/A	N/A	N/A	✓	✓
LEE 2	✓	N/A	N/A	N/A	✓	✓
EXC LEE 3	✓	N/A	N/A	N/A	✓	✓
URA 1	✓	✓	N/A	✓	✓	✓
URA 7	✓	✓	✓	✓	✓	✓
BOLGER 1	✓	✓	N/A	✓	✓	✓

¹Performance indicator applicability has been updated based on improved site knowledge over the years resulting in differences with the 2014 CNSC staff's CMD table (e.g., if no boreholes were found on the property). More details are provided in Section 3.

²The performance indicator identified above as "Stable Mine Openings" was originally labelled as "Stable Caps on Vertical Mine Openings". The scope and acceptable criteria for this performance indicator was expanded to include all mine openings.

Figure 2.6-1: Water quality monitoring stations associated with the applicable 27 decommissioned properties



3.0 MATTER FOR CONSIDERATION

As required by Section 6 of the *General Nuclear Safety and Control Regulations*, the following section provides a description of the nuclear substances, land, areas, buildings, structures, components, equipment and systems that will be affected by the requested licence revocation and the manner in which they will be affected. Further detail regarding these decommissioned properties is provided in the following document:

- Final Closure Report Beaverlodge Properties URA 7, URA 1, BOLGER 1, Tailings Management Area Properties (Kingsmere 2024).

3.1 Tailings Management Area

Over the lifetime of the Beaverlodge mill, a total of 10,109,605 tonnes of tailings were produced (Eldorado 1983a). Of this amount, approximately 40% were deposited underground as backfill, while the remainder (approx. 5,800,000 tonnes) were deposited within the TMA. The TMA consists of a number of water bodies in the Fulton Creek Watershed including Fookes Reservoir, Marie Reservoir and Minewater Reservoir. In addition to tailings, Minewater Reservoir and an additional impoundment, Meadow Basin, also received precipitates generated from water treatment activities. The TMA consists of 24 individual decommissioned properties (**Figure 3.1-1**).

The Fulton Creek Watershed originates in Fulton Lake, which is located upstream of the TMA and has not been impacted by past mining activity. Water from Fulton Lake flows through Fookes Reservoir, Marie Reservoir and Meadow Fen, into Greer Lake. The nearby small catchment area that hosts Minewater Reservoir also flows through Meadow Fen into Greer Lake. Water exiting Greer Lake flows into Fulton Bay of Beaverlodge Lake. While Greer Lake is not located on a decommissioned property, it will be included within the IC boundaries to ensure that natural recovery continues to be monitored.

At the start of milling operations in 1953, tailings were initially deposited in Minewater Reservoir. In 1954, the tailings line was moved to Marie Reservoir, likely to make use of its greater volume (Eldorado 1983a). The tailings line was again relocated to Fookes Reservoir in 1957, where tailings discharge continued until the mill shutdown in 1982. To maintain water levels in the TMA, control structures were constructed and equipped with stop logs at the outlets of both Fookes and Marie Reservoirs in 1969 and 1971, respectively.

Water treatment provisions for mine water from the Fay mine were added in 1971, with settling of precipitates in Minewater Reservoir. A water treatment plant was constructed at the outflow of Marie Reservoir in 1976, with settling of the resulting precipitates in Meadow Basin.

Decommissioning of the TMA was carried out between the winter of 1983 and the summer of 1985. Dismantling of the tailings lines occurred between April 1983 and May 1985 (Eldorado 1987). During that activity, the 250 mm diameter Sclairpipe tailings line was salvaged and sent offsite in 1983. The wood stave tailings pipelines were burned at various times between 1983 and 1985.

Residual tailings from spills that occurred during operations along the pipeline corridor running from the mill to the TMA were assessed and remediated in accordance with the approved decommissioning plan (Eldorado 1987). Accessible tailings were either excavated and relocated to the underground mine workings or covered in place with 0.6 m of waste rock. Locations with residual tailings that were inaccessible, either due to topography or naturally established vegetative cover, were assessed on an individual basis, with the participation of regulatory personnel,

to determine whether they should be left as is or remediated. If a decision was made to leave the residual tailings in situ, it was because the disturbance associated with removal or covering of the tailings would have resulted in greater environmental damage.

Mine waste rock was utilized in the construction of roads accessing the TMA and as cover material on exposed tailings during decommissioning. Based on general waste rock samples collected on the Beaverlodge properties, uranium content is typically below the threshold considered to be special/mineralized waste rock at the currently licensed uranium mines in northern Saskatchewan (0.03% U_3O_8). Waste rock characterization completed by Eldorado in 1982 and more recently by Cameco in 2012 to support development of the QSM indicate that the site waste rock has a low potential for acid generation. In addition, visual observation and monitoring has not indicated any conditions or impacts that would be attributed to acid generation.

Water sampling stations were established at various locations within the TMA to monitor natural recovery of the various water bodies affected by past mill operation. Fulton Lake outlet (AN-3) is collected to measure background water quality for the watershed. Water quality samples are collected at the following locations within the TMA (see **Figure 2.6-1**): Fookes Reservoir outlet (TL-3), Marie Reservoir outlet (TL-4), Minewater Reservoir outlet (TL-6), and Meadow Fen outlet (TL-7). Monitoring has also taken place downstream of the TMA at the Greer Lake outflow (TL-9). Monitoring at these locations was initiated during operation of the mill and continues today.

Tailings Management Area Properties

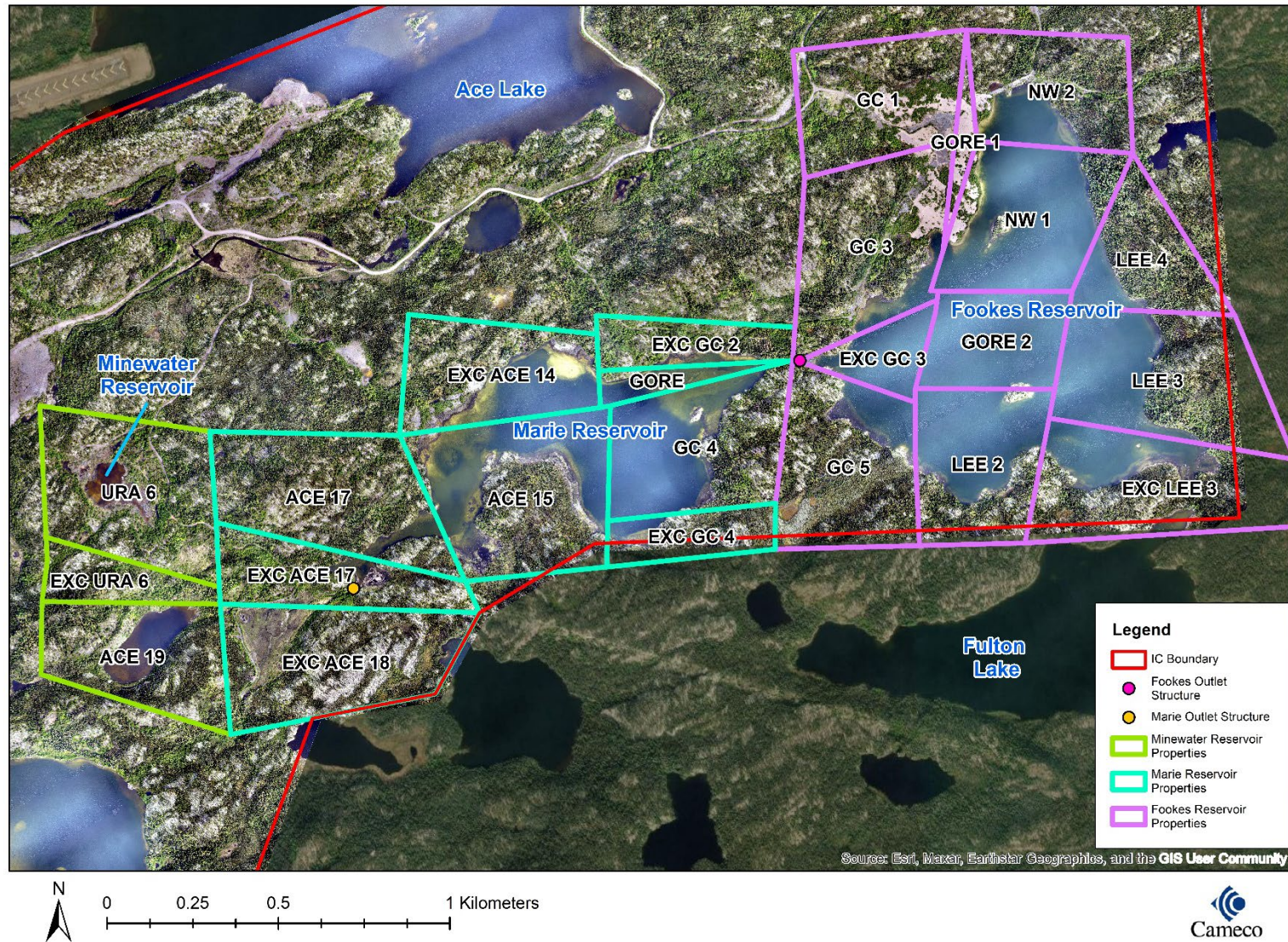


Figure 3.1-1: Tailings Management Area Properties

3.1.1 Fookes Reservoir Properties

3.1.1.1 Description

The Fookes Reservoir Area consists of 12 licensed properties (GC 3, EXC GC 3, GC 5, GC 1, GORE 1, NW 2, NW 1, LEE 4, GORE 2, LEE 3, EXC LEE 3 and LEE2) surrounding and including the Fookes Reservoir, the Fookes tailings delta, and the Fookes Outlet. The properties discussed in association with Fookes Reservoir cover an area of approximately 180.4 hectares (see **Figure 3.1-2**).

More than 5 million tonnes of mill tailings were placed within the Fookes Reservoir between 1957 and the cessation of milling in 1982 (Eldorado 1983b). Tailings were originally discharged at the north-west corner of the reservoir and solids settled over its entire bottom. A tailings delta formed in the northwest corner of the reservoir, which covered approximately 7% of the original surface area at shutdown.

Fookes Reservoir Properties

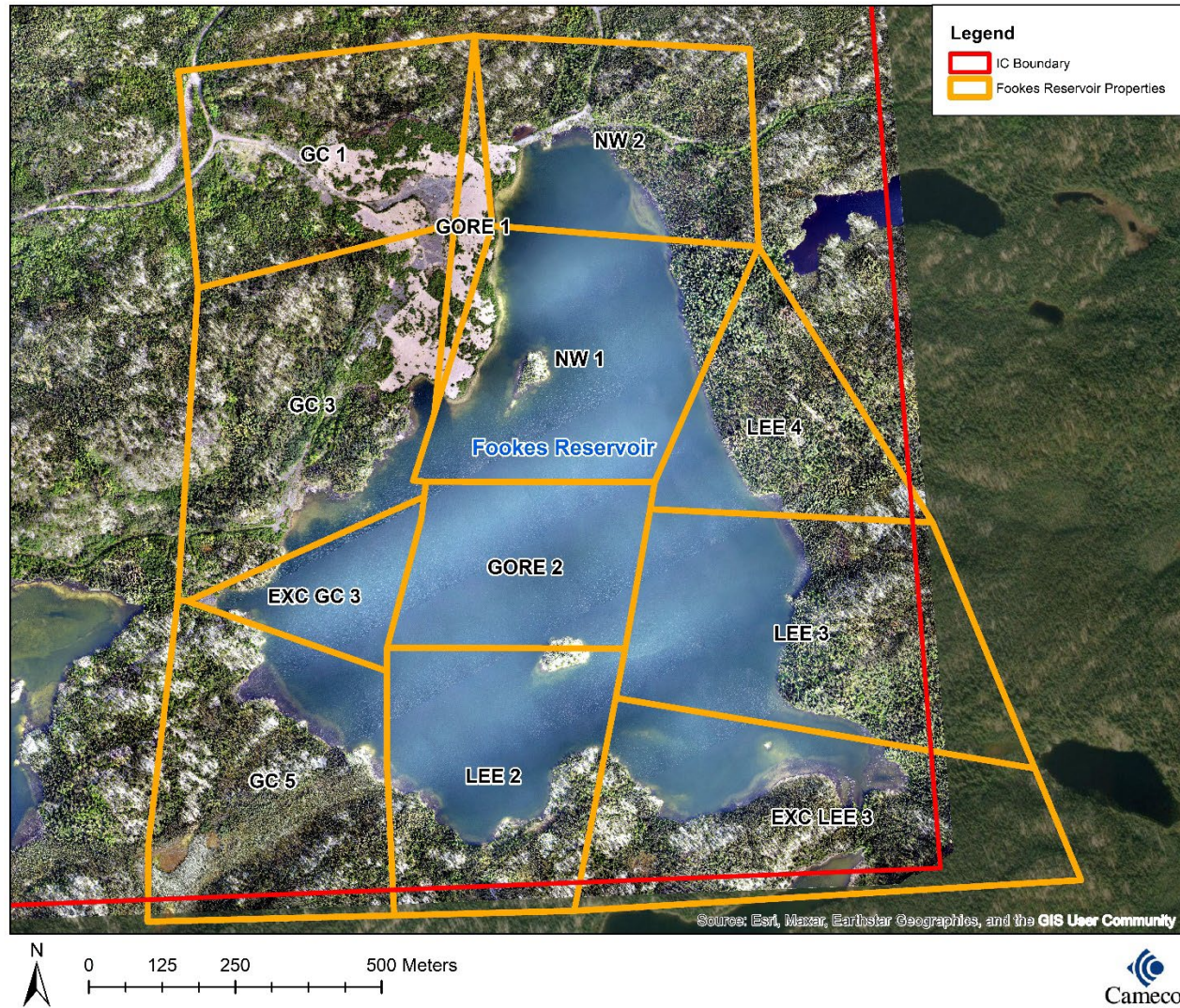


Figure 3.1-2: Fookes Reservoir Properties

Fookes Delta

The Fookes tailings delta (Fookes Delta) is located on properties; GC 1; GC 3; GORE 1; NW 1 and NW 2, at the northwest corner of Fookes Reservoir. The delta formed through the direct discharge of tailings and covered approximately 9.2 ha at shutdown. Lowering the water level of Fookes Reservoir at decommissioning exposed an additional 1.3 ha of tailings. In total, 88,540 m³ of waste rock were used to create a 600 mm cover on the Fookes Delta tailings. The objectives of the cover were to control gamma radiation, provide protection against direct contact with the tailings, and reduce the potential for erosion and dispersion.

Following the initial completion of the waste rock cover, some of the tailings began migrating upward through the waste rock, forming small mounds, or “boils” on the surface of the cover. This was attributed to seasonally high piezometric pressures within the tailings related to the geometry and stratigraphy of the delta (SRK 2021), which resulted in localized artesian conditions.

As a result, remediation work was initiated in 1997, and consisted of covering the exposed tailings boils with an engineered cover comprised of 0.3 m of fine-grained filter sand, overlain by 0.3 m of sand and gravel fill. Strict grain size distribution requirements were set for the lower filter sand layer to ensure that the sand was fine enough to prevent tailings particles from migrating upwards through the void spaces in the sand, while at the same time allowing groundwater to flow upwards through the filter sand without pore pressure build-up. The upper sand and gravel layer function to constrain the filter sand and to protect it from erosion. Other work completed in 1997 included the construction of a surface drainage channel at the northeast end of the delta.

In 2005, following a subject matter expert review of previous tailings delta inspections, an engineered strategic cover consisting of 0.3 m of filter sand and 0.3 m of general fill material, was placed on identified tailings boil areas. Further, in 2007, an optimized full cover was placed on remaining areas of the delta believed to be susceptible to the formation of tailings boils. This engineered cover consisted of 0.15 – 0.30 m of filter sand overlain by a 0.3 m layer of general fill.

Subject matter expert inspections of the tailings delta cover were completed in 2010 and 2015, in addition to annual inspections completed by Cameco personnel. A detailed geotechnical assessment of the Fookes Delta cover conducted in 2020, observed no new tailings boils or significant erosional features, and concluded that conditions on the delta have stabilized sufficiently to support the transfer of the associated properties to the IC Program (SRK 2021).

Fookes Outlet Structure

At the end of decommissioning, the stop log control structure at the outlet of Fookes Lake was removed and the outlet rebuilt to an elevation that would passively maintain water levels a minimum of 1 m above the submerged tailings in Fookes Reservoir. The Fookes Outlet structure is located at the intersection of properties GC 3, EXC GC 3, and GC 5 and consists of a rip-rap lined spillway (with trapezoidal cross section) discharging into a rip-rap lined stilling basin. The rip-rap lining in the spillway channel and the stilling basin was intruded with grout for added erosion protection; however, the rip-rap in the spillway was designed to be stable in the absence of grout intrusion. The Fookes spillway is capable of passing a 500-year flood event and placement of the coarse rip-rap was designed to resist erosion of the embankment in the event of overtopping (SRK 1986).

A detailed geotechnical assessment of the Fookes Outlet structure conducted in 2020, concluded that the conditions at the outlet structure support the transfer of the associated decommissioned properties to the IC program (SRK 2021).

3.1.1.2 Evaluation of Performance Indicators

Results of the detailed surficial gamma survey conducted on the reasonably accessible and disturbed areas (e.g., covered tailings delta) of the Fookes Reservoir properties demonstrate that the criteria identified in the EPB-381 guideline has been met.

There have been no exploration drill holes identified on or adjacent to the Fookes Reservoir properties. No mine openings to surface are hosted on the properties and the stable crown pillar performance indicator is not applicable to the twelve properties.

Cameco completed a final inspection of the properties and debris has been removed and disposed of in Lower Fay Pit.

Water quality measured at the outflow of Fookes Reservoir (Station TL-3, see **Figure 2.6-1**) is compared to modelled predictions as a performance indicator associated with the natural recovery of Fookes Reservoir and associated decommissioned properties. The relevant water quality constituents assessed as part of this performance indicator include, radium-226, uranium and selenium. As shown in **Figure 3.1-3**, **Figure 3.1-4**, and **Figure 3.1-5**, the trend of measured concentrations of these parameters fall within the range of modelled predictions for TL-3. A summary of the measured and predicted values is provided below:

- Uranium and selenium concentrations in Fookes Reservoir displayed a significant decrease following the completion of decommissioning activities. The trend of measured levels fall within the modelled range and concentrations are expected to continue to decrease over the long term.
- Radium-226 concentrations in Fookes Reservoir are predicted to follow an increasing trend in the short to medium term, related to the flux of historically precipitated radium from sediments (SENES 2012). Radium-226 concentrations are then predicted to decline over the long term. Measured radium-226 concentrations are following this predicted trend and have been within the modelled range for most of the monitoring period. It is suspected that recent variability in observed flows at this location have influenced recent measured values (e.g., 1.7 Bq/L in 2023). This flow related condition is localised as the trend of current radium-226 concentrations remain within the modelled range downstream at the outflow of Marie Reservoir (Station TL-4). It is anticipated that over the long-term radium-226 concentrations at TL-3 will continue to trend within the modelled range.

The water quality of Fookes Reservoir will continue to be monitored at Station TL-3 as part of the Beaverlodge LTMP to be implemented under the IC program.

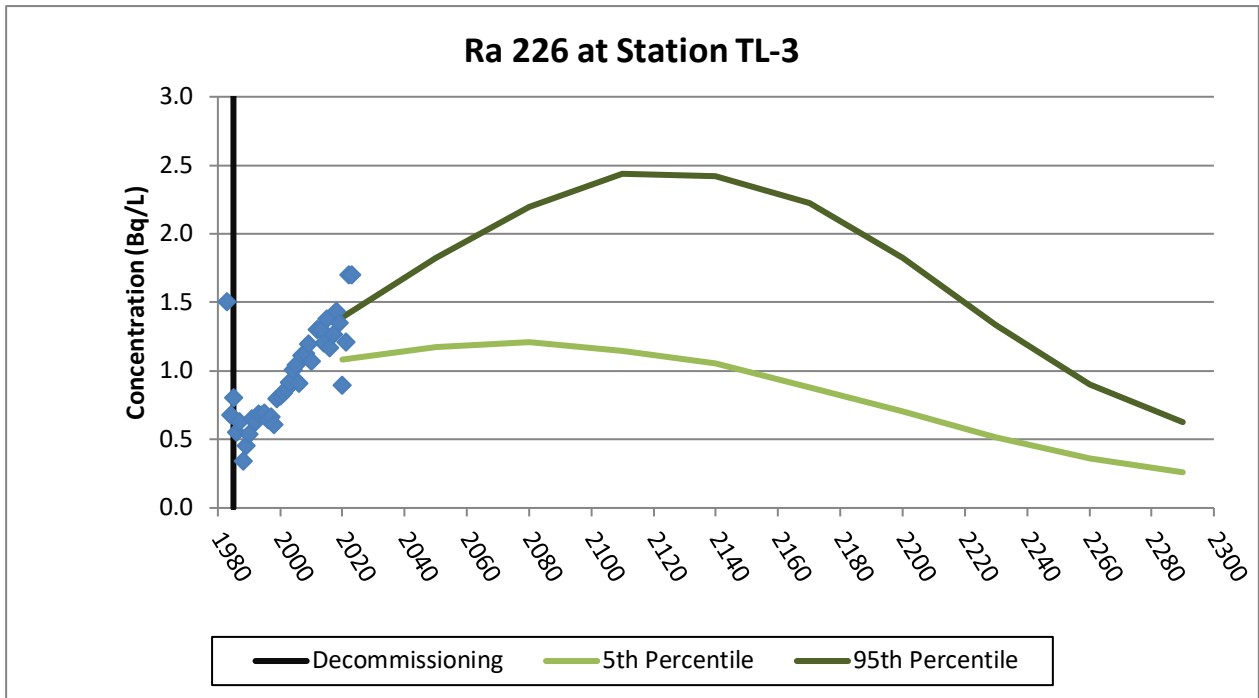


Figure 3.1-3: Ra-226 Performance Indicator at TL-3

Figure 3.1-4 and 3.1-5 are provided to show the rapid improvement in uranium and selenium concentrations that followed decommissioning and a more suitable scale showing the current concentrations.

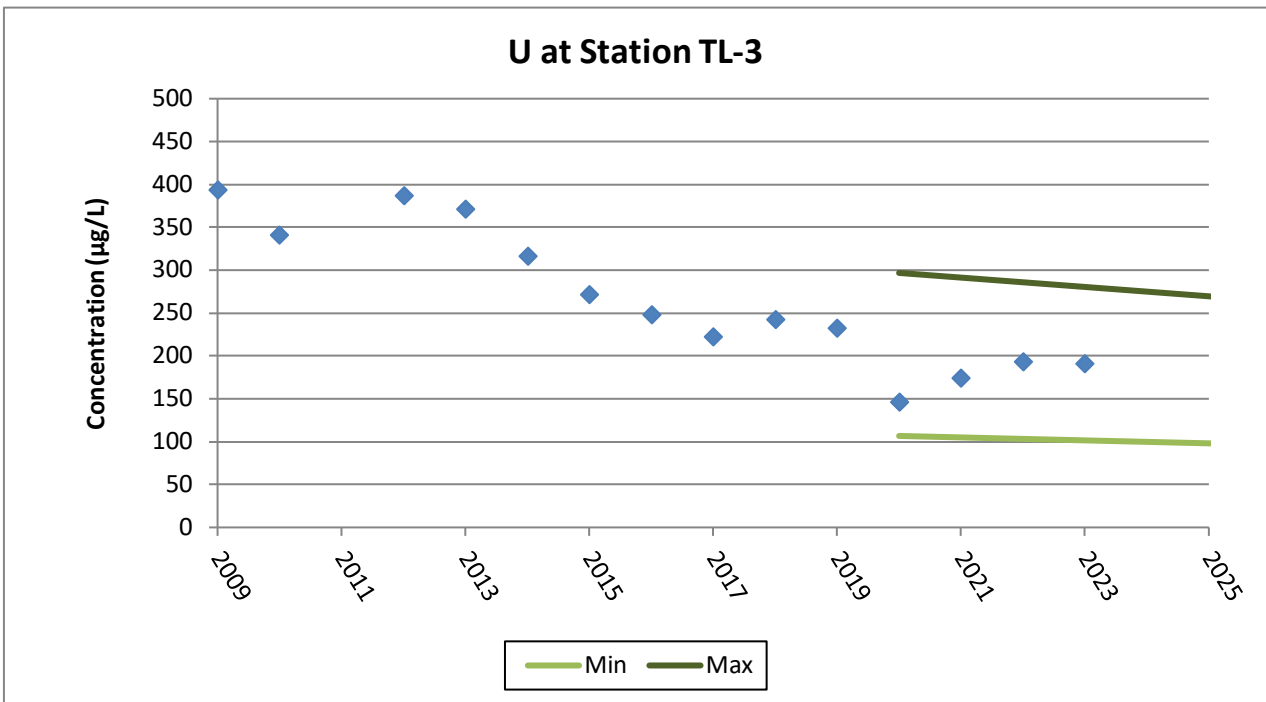
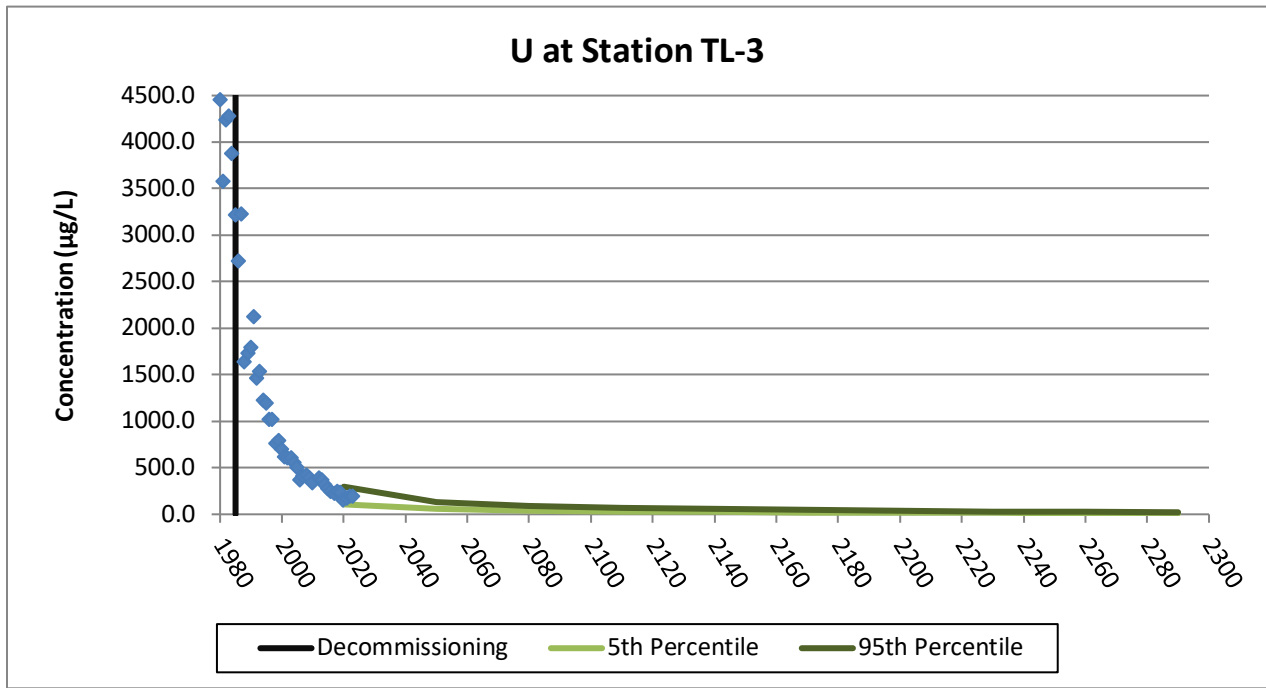


Figure 3.1-4: U Performance Indicator at TL-3

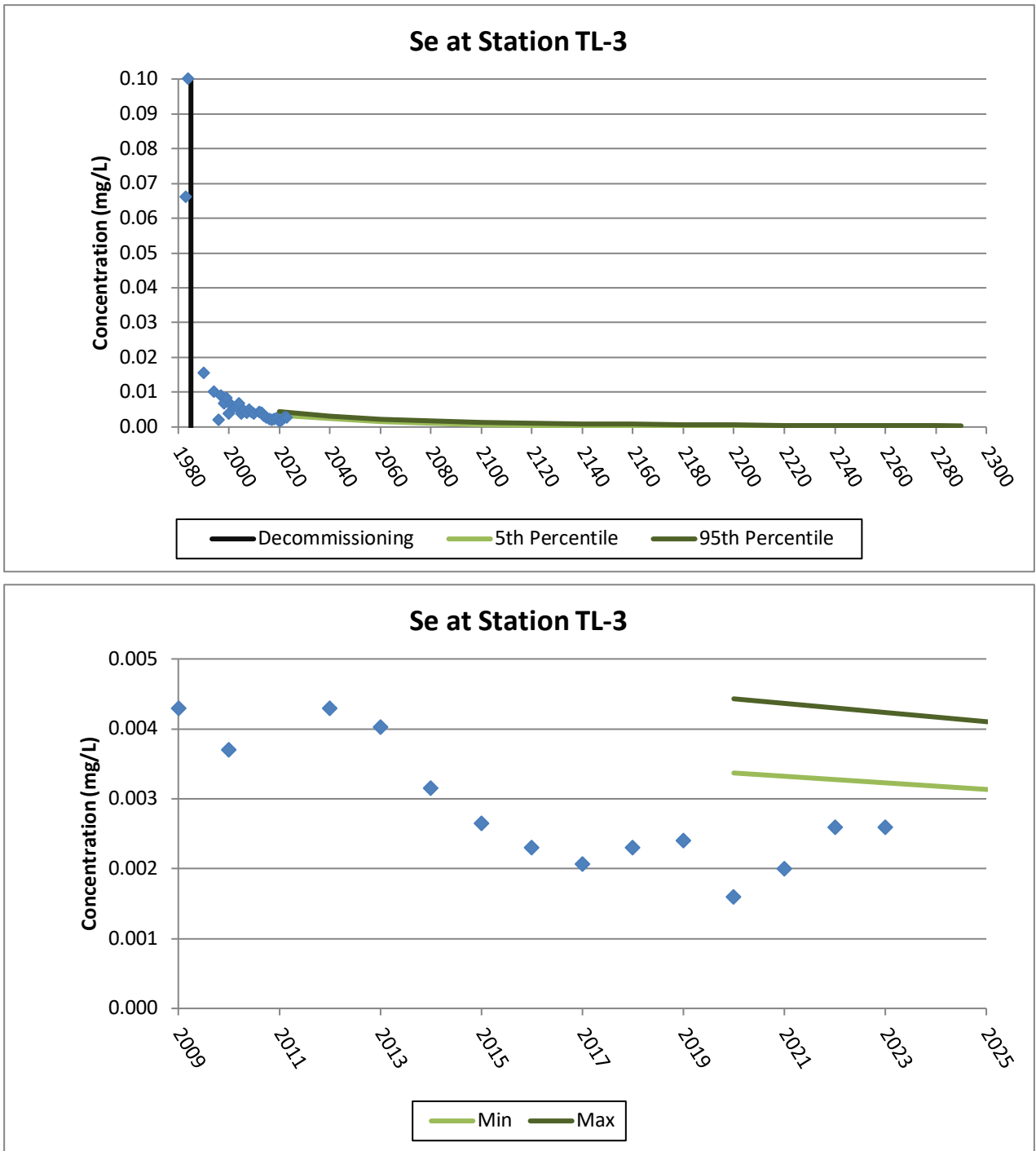


Figure 3.1-5: Se Performance Indicator at TL-3

The applicable performance indicators have all been met, indicating that the 12 decommissioned Fookes Reservoir properties have met the performance objectives. Human health and ecological risks have been managed to acceptable levels and the properties should be considered for release from CNSC licensing and transfer into the IC Program.

3.1.1.3 Fookes Reservoir Institutional Control Monitoring and Maintenance

Based on absence of historical mining and milling activities, small portions of LEE 4, LEE3, EXC LEE 3, LEE 2, and GC 5 do not require institutional control and will be free released (**Figure 3.1-2**).

The Fookes Delta and the Fookes Outlet structure will be included in the physical site inspections conducted through the IC Program.

Specific aspects to be monitored as part of the IC Program include:

- Evidence of recent human visitation,
- Fookes Delta
 - Evidence of exposed tailings;
 - Evidence of erosion of the cover material:
 - Condition of the drainage trench along the northeast edge of the delta
 - Evidence of erosional features;
 - Condition of erosion-prevention measures on former north access road:
 - Condition of cover adjacent to the former access road.
 - Ensure earthen berms are in place to limit access to the delta.
 - Condition of vegetation.
- Fookes Outlet Structure
 - The condition of the spillway channel
 - The condition of the rip-rap embankments on either side of the spillway
- Water quality.

The physical site inspections will also include photographic record to allow an assessment of the physical condition of the properties over time. Although no aspects of the Fookes Reservoir properties are expected to require maintenance once in the IC Program, funds will be provided to perform additional remediation on the Fookes Delta if necessary. For example, if required, fill material is available in close proximity to the Fookes Delta on the former ACE 3 property, which was released from CNSC licensing in 2022.

3.1.2 Marie Reservoir Properties

3.1.2.1 Description

The Marie Reservoir Area (see Figure 3.3-1) consists of nine licensed properties (EXC ACE 17, ACE 17, EXC ACE 18, ACE 15, EXC ACE 14, GORE, EXC GC 2, GC 4, and EXC GC 4) surrounding and including Marie Reservoir, the Marie tailings delta, the Marie outlet and the Meadow Fen. It also includes the decommissioned control structure built at the outflow of the Meadow Basin (TL-7). The properties discussed in association with Marie Reservoir cover an area of approximately 133.5 hectares (see **Figure 3.1-6**).

Marie Reservoir Properties

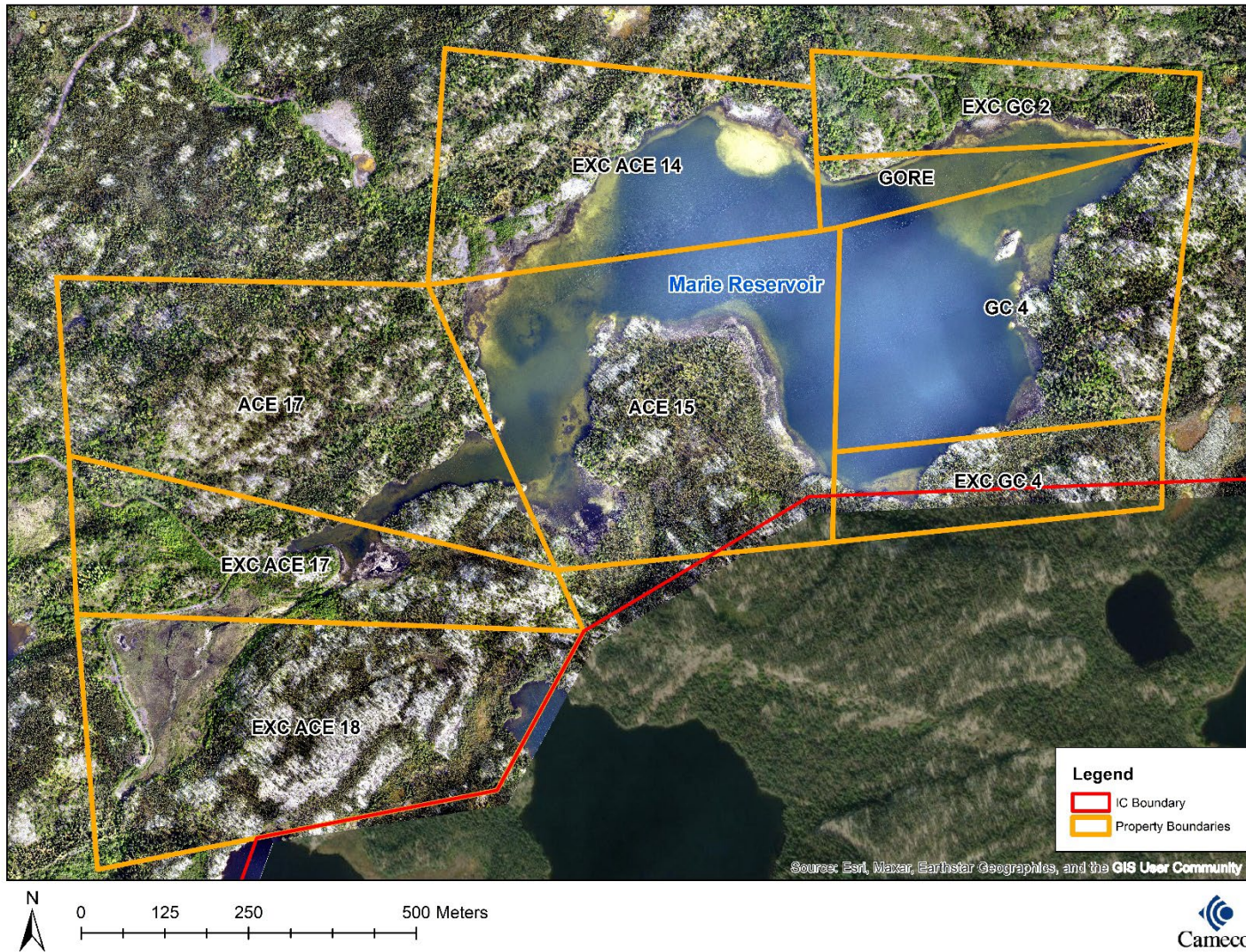


Figure 3.1-6: Marie Reservoir Properties

Marie Tailings Delta

Approximately 170,000 tonnes of mill tailings were placed within the Marie Reservoir between 1954 and 1957. During the period when deposition of tailings took place, two small tailings deltas developed along the north shore of the reservoir. These deltas were partially submerged by the construction of the Marie Reservoir dam in 1971 and covered approximately 5 to 10% of the reservoir area.

At decommissioning, the water level in Marie Reservoir was lowered and tailings located near the surface were relocated to deeper areas. Exposed portions of the tailings deltas were covered with 600 mm of waste rock with the objectives to control gamma radiation, provide protection against direct contact with the tailings, and reduce the potential for erosion and dispersion.

The Marie tailings deltas are mostly contained to the EXC ACE 14 property; however, a small portion of the west delta extends onto the ACE 15 property.

Marie Outlet Structure

At the end of decommissioning, the stop log control structure at the outlet of Marie Reservoir was removed and the outlet rebuilt to an elevation that would passively maintain water levels a minimum of 1 m above the submerged tailings. The Marie Outlet structure is located on property EXC ACE 17 and consists of a rip-rap lined open channel (with trapezoidal cross section) discharging into a rip-rap lined stilling basin. The rip-rap lining in the spillway channel and the stilling basin was intruded with grout for added erosion protection; however, the rip-rap in the spillway was designed to be stable in the absence of grout intrusion. The spillway is capable of passing a 500-year flood event and placement of the coarse rip-rap was designed to resist embankment erosion in the event of overtopping (SRK 1986).

A detailed geotechnical assessment of the Marie Outlet structure conducted in 2020, concluded that the conditions at the outlet structure support the transfer of the associated decommissioned properties to the IC program (SRK 2021).

Meadow Fen

In 1976, a water treatment plant was constructed at the outlet of the Marie Reservoir. Barium chloride and ferric sulphate solutions were added to remove radium-226 from the water exiting the Reservoir. Water treatment precipitates were deposited in Meadow Basin, created by the construction of a concrete and stop log flow control structure in 1977. Meadow Basin also served to provide additional settling of mine water treatment precipitates carried over from Minewater Reservoir.

During decommissioning the water treatment infrastructure was removed and the water level in Meadow Basin was lowered, by removal of stop logs from the control structure. Approximately 6,470 m³ of material (precipitates and underlying organics) was excavated from the basin and disposed of in the underground mine workings via the Ace Mine Vent Raise.

In 2021, the flow control structure was decommissioned by the removal of the wooden stop logs and steel frame, followed by partial removal of the concrete structure. Debris generated from this work was disposed in the Lower Fay Pit.

3.1.2.2 Evaluation of Performance Indicators

Results of the detailed surficial gamma survey conducted on the reasonably accessible and disturbed areas (e.g., covered tailings delta) of the Marie Reservoir area properties demonstrate that the criteria identified in the EPB-381 guideline has been met.

There have been no exploration drill holes identified on or adjacent to the Marie Reservoir properties. No mine openings to surface are hosted on the properties and the stable crown pillar performance indicator is not applicable to the nine properties.

A final inspection of the properties has been completed and debris has been removed and disposed of in Lower Fay Pit.

Water quality measured at the outflow of Marie Reservoir (Station TL-4, see **Figure 2.6-1**) is compared to modelled predictions as a performance indicator associated with the natural recovery of Marie Reservoir and associated decommissioned properties. The relevant water quality constituents assessed as part of this performance indicator include, radium-226, uranium and selenium. As shown in **Figure 3.1-7, 3.1-8, and 3.1-9**, the trend of measured concentrations of these parameters fall within the range of modelled predictions for TL-4. A summary of the measured and predicted values is outlined below:

- Uranium and selenium levels in Marie Reservoir are within the modelled range and are expected to continually decline over the long term.
- Radium-226 concentrations in Marie Reservoir are predicted to follow an increasing trend in the short to medium term, related to the flux of historically precipitated radium from sediments (SENES 2012). Radium-226 concentrations are then predicted to decline over the long term. Measured radium-226 concentrations are following this predicted trend and fall within modelled range.

The water quality of Marie Reservoir will continue to be monitored at Station TL-4 as part of the Beaverlodge LTMP to be implemented under the IC program.

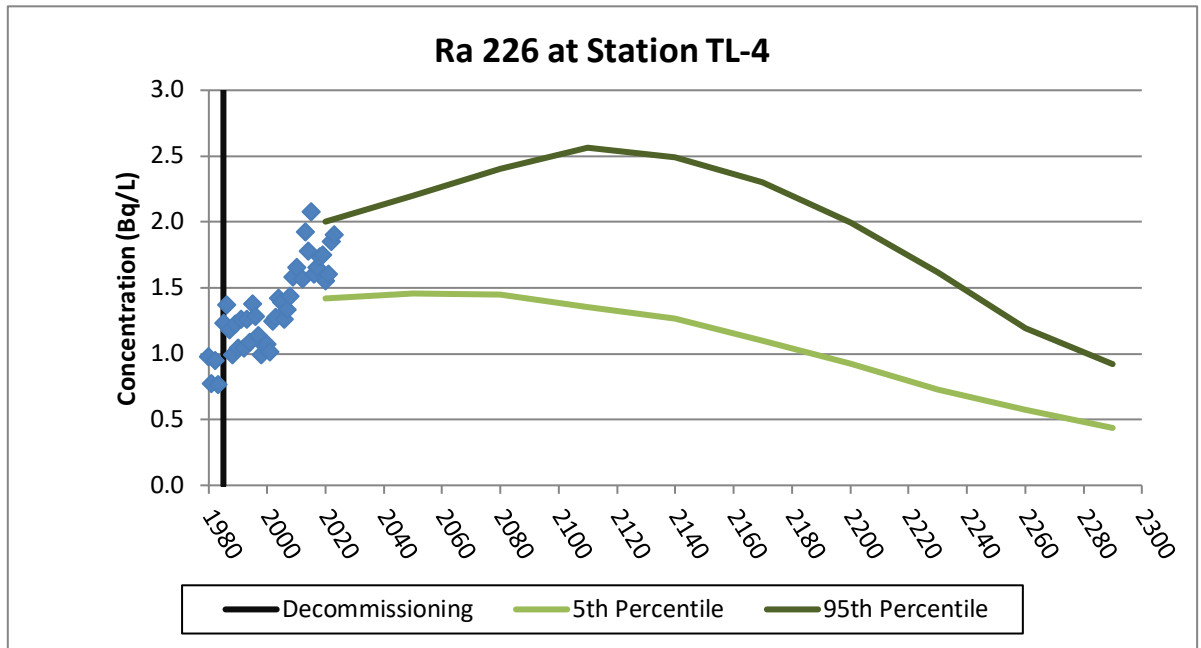


Figure 3.1-7: Ra 226 Performance Indicator at TL-4

Figure 3.1-8 and 3.1-9 are provided to show the rapid improvement in uranium and selenium concentrations that followed decommissioning and a more suitable scale showing the current concentrations.

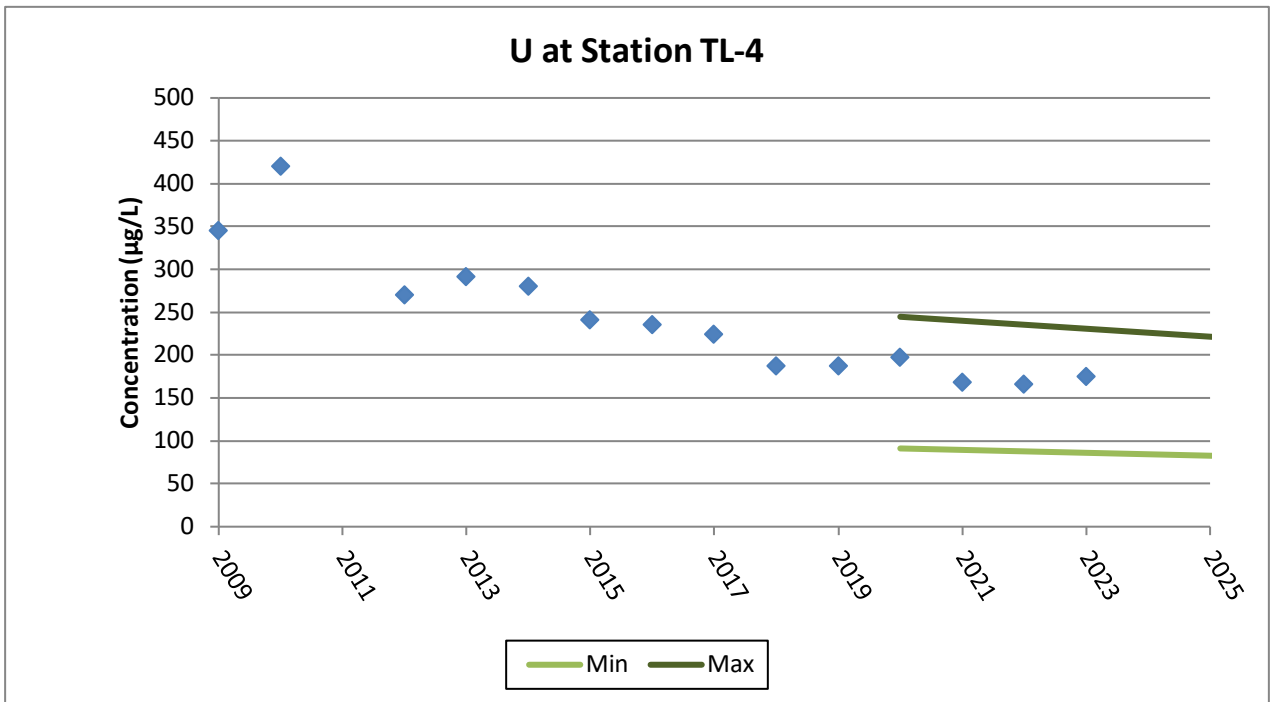
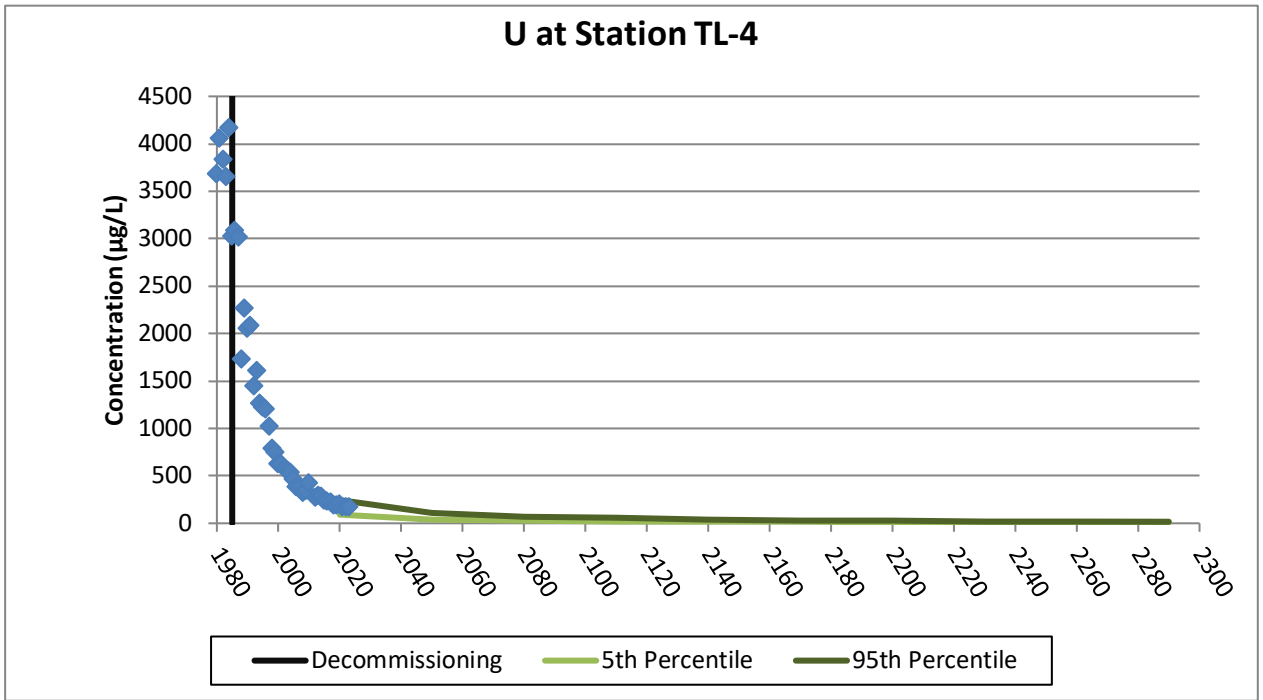


Figure 3.1-8: U Performance Indicator at TL-4

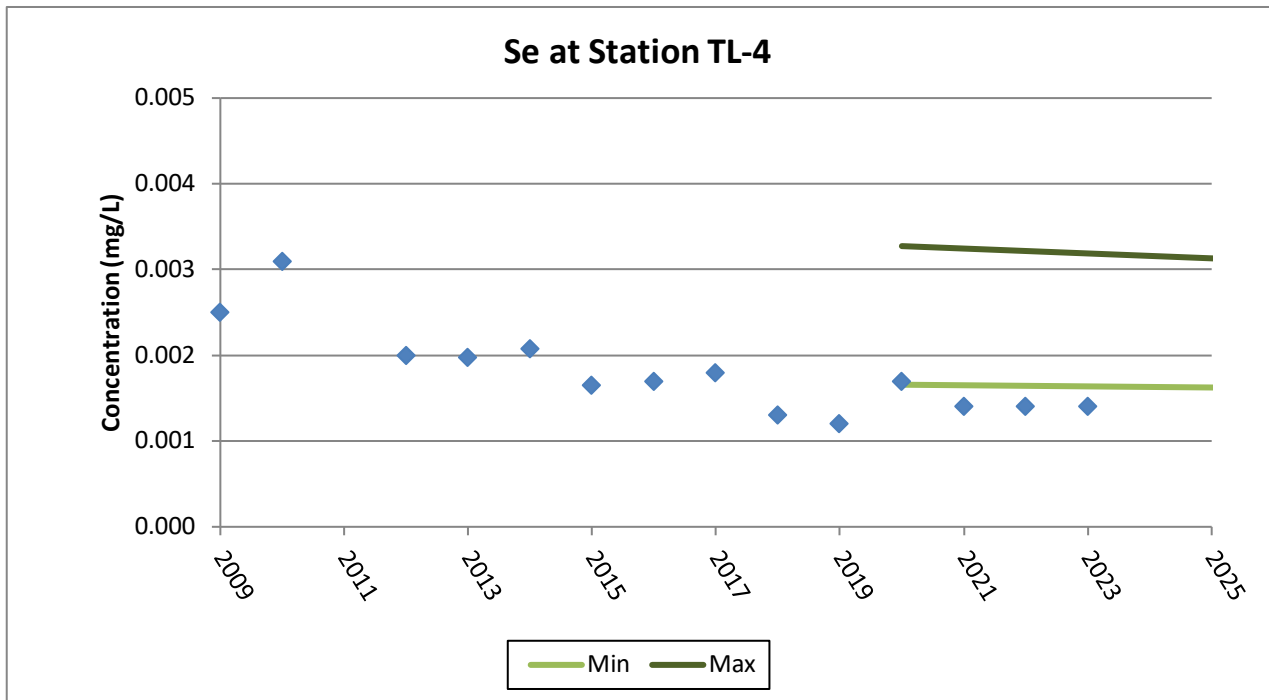
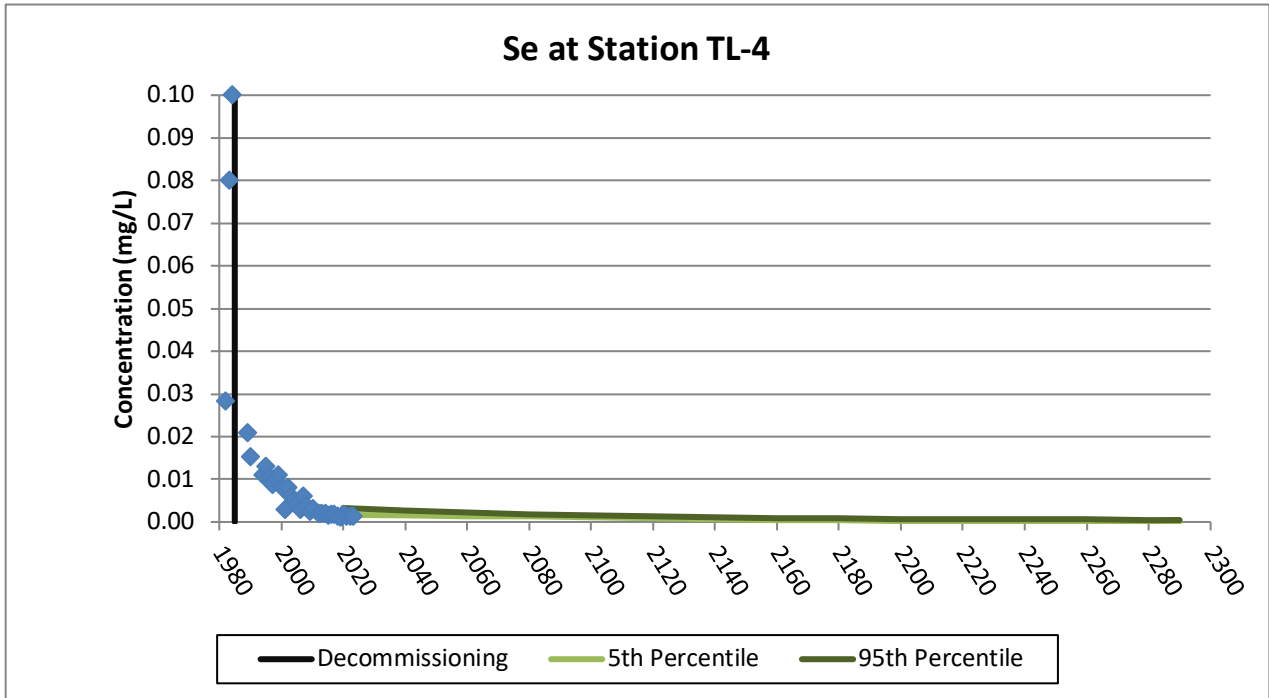


Figure 3.1-9: Se Performance Indicator at TL-4

The applicable performance indicators have all been met, indicating that the 9 decommissioned Marie Reservoir properties have met the performance objectives. Human health and ecological risks have been managed to acceptable levels and the properties should be considered for release from CNSC licensing and transfer into the IC program.

3.1.2.3 Marie Reservoir Institutional Control Monitoring and Maintenance

Based on the absence of historical mining or milling activities, small portions of EXC GC 4 and ACE 15 do not require institutional control and will be free released (**Figure 3.1-6**).

The Marie Reservoir tailings delta and outlet structure will be included in the physical site inspections conducted through the IC Program.

Specific aspects to be monitored as part of the IC program include:

- Evidence of recent human visitation,
- Condition of vegetation,
- Marie Tailings Delta
 - Evidence of exposed tailings
 - Evidence of erosion of the cover material
 - Evidence of erosional features
- Marie Reservoir Outlet
 - Condition of the spillway channel
 - Condition of the rip-rap embankment on either side of the spillway
- Water quality.

The physical site inspections will also include photographic record to allow an assessment of the physical condition of the properties over time. Although no aspect of the Marie Reservoir properties is expected to require maintenance under the IC Program, funds will be provided to perform remediation on the Marie Delta if erosional features that need to be addressed are identified.

3.1.3 Minewater Reservoir Properties

3.1.3.1 Description

The Minewater Reservoir Area (see **Figure 3.1-10**) consists of three licensed properties (URA 6, EXC URA 6, and ACE 19) surrounding and downstream of the former Minewater Reservoir. The properties discussed in association with the Minewater Reservoir cover an area of approximately 42.5 hectares.

During operations, approximately 101,000 tonnes of mill tailings were placed within the Minewater Reservoir between 1953 and 1954. After 1954 and until 1971, the Minewater Reservoir received mine slimes and sanitary wastes from underground. Between 1971 and 1982, the area was used for settling treated mine water precipitates, while continuing to receive sewage from the Fay underground mine.

The natural drainage direction of the Minewater Reservoir was originally to Ace Creek. A dam was constructed on the west side of Minewater Reservoir in 1971 (saddle dam), to direct drainage from the Minewater Reservoir towards the TMA (Meadow Basin).

At decommissioning, a new spillway outlet was blasted into the bedrock on the south part of the reservoir to permanently alter the drainage of Minewater Reservoir towards the Meadow Basin area within the TMA. Deposited tailings, mine slimes, sanitary wastes and water treatment precipitates were then excavated from Minewater Reservoir and disposed of underground via the Ace vent raise. In all, approximately 112,000 m³ of material was removed from Minewater Reservoir during decommissioning.

Minewater Reservoir Properties

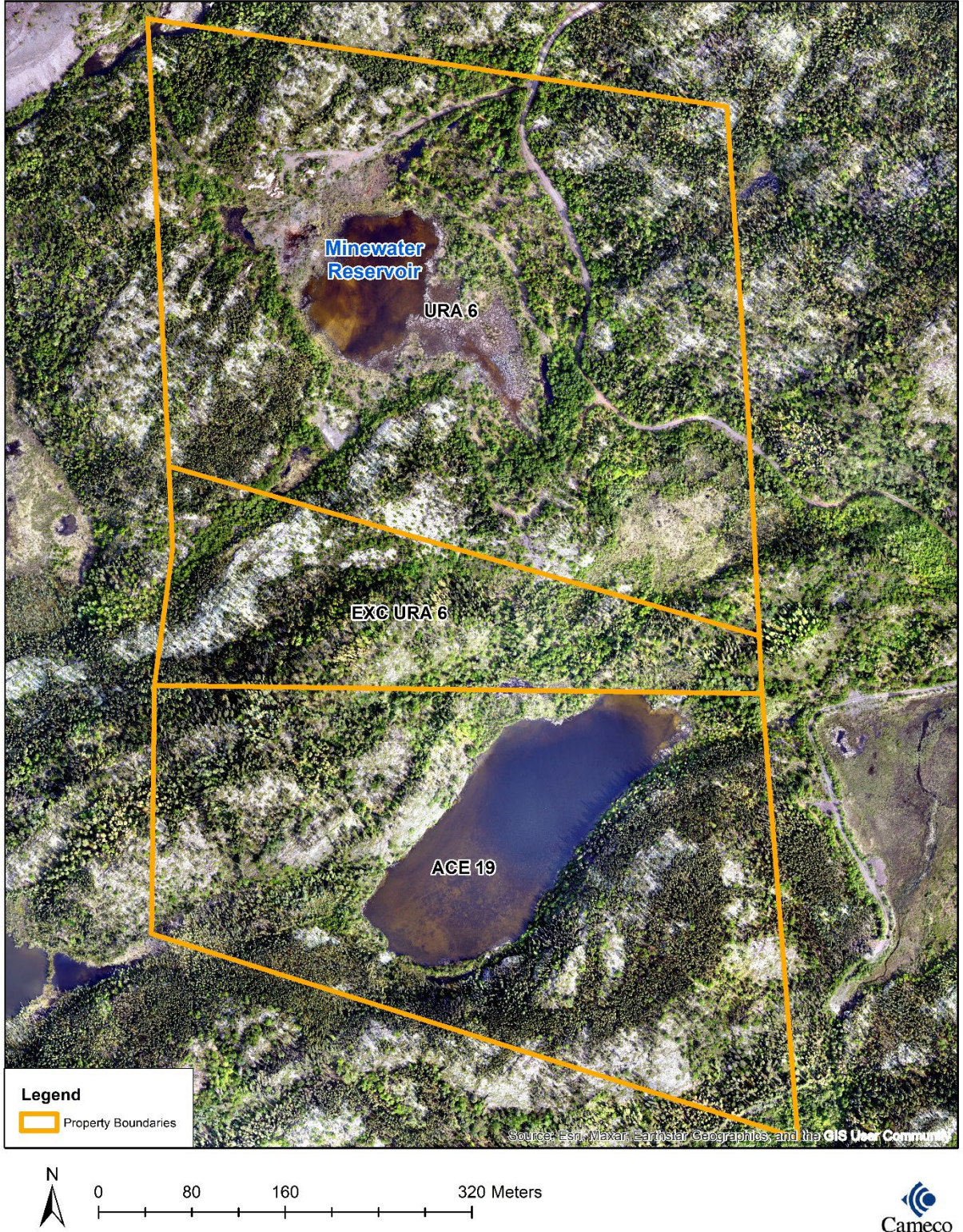


Figure 3.1-10: Minewater Reservoir Properties

3.1.3.2 Evaluation of Performance Indicators

Results of the surficial gamma survey conducted on the reasonably accessible and disturbed areas of the Minewater Reservoir properties demonstrate that EXC-URA 6 and ACE 19 meet the criteria identified in the EPB-381 guideline. A small area of the URA 6 property along the east flank of the reservoir exceeded the guideline and required further risk evaluation. The area is difficult to access and heavily vegetated. The evaluation concluded incremental dose associated with the URA 6 property based on the measured gamma results and a reasonable land use scenario are well below the public dose criterion of 1 mSv/yr (ARCADIS 2015).

Surface inspections identified eight exploration boreholes on the URA 6 property that were then sealed with concrete grout following regulatory-approved methods. No boreholes were identified on the EXC-URA 6 or ACE 19 properties.

No mine openings to surface are hosted on the Minewater Reservoir properties and the stable crown pillar performance indicator is not applicable.

A final inspection of the properties has been completed and debris has been removed and disposed of in Lower Fay Pit.

Water quality measured downstream of Minewater Reservoir is measured at the discharge of Meadow Fen (Station TL-7, see **Figure 2.6-1**), is compared to modelled predictions as a performance indicator associated with the natural recovery of Minewater Reservoir and associated decommissioned properties. The relevant water quality constituents assessed for this performance indicator include radium-226, uranium and selenium. As shown in **Figure 3.1-11, 3.1-12, and 3.1-13**, the trend of measured concentrations of these parameters fall within the range of modelled predictions for TL-7. A summary of the measured and predicted values is outlined below:

- Uranium and selenium levels in Minewater Reservoir are trending within the modelled range and concentrations are expected to continually decline over the long term.
- Radium-226 concentrations in Minewater Reservoir are predicted to follow an increasing trend in the short to medium term, related to the flux of historically precipitated radium from sediments (SENES 2012). Radium-226 concentrations are then predicted to decline over the long term. Measured radium-226 concentrations are following this predicted trend and fall within modelled range.

The water quality of downstream of the Minewater Reservoir properties will continue to be monitored at Station TL-7 as part of the Beaverlodge LTMP to be implemented under the IC program.

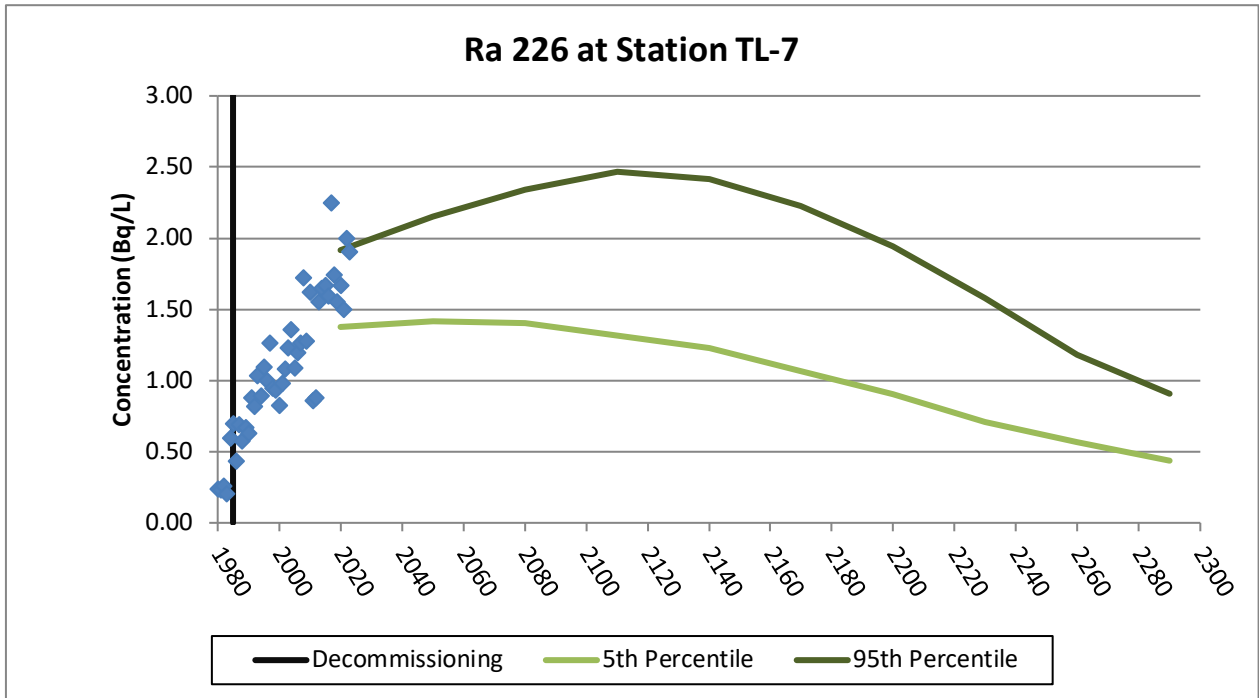


Figure 3.1-11: Ra-226 Performance Indicator at TL-7

Figure 3.1-12 and 3.1-13 are provided to show the rapid improvement in uranium and selenium concentrations that followed decommissioning and a more suitable scale showing the current concentrations.

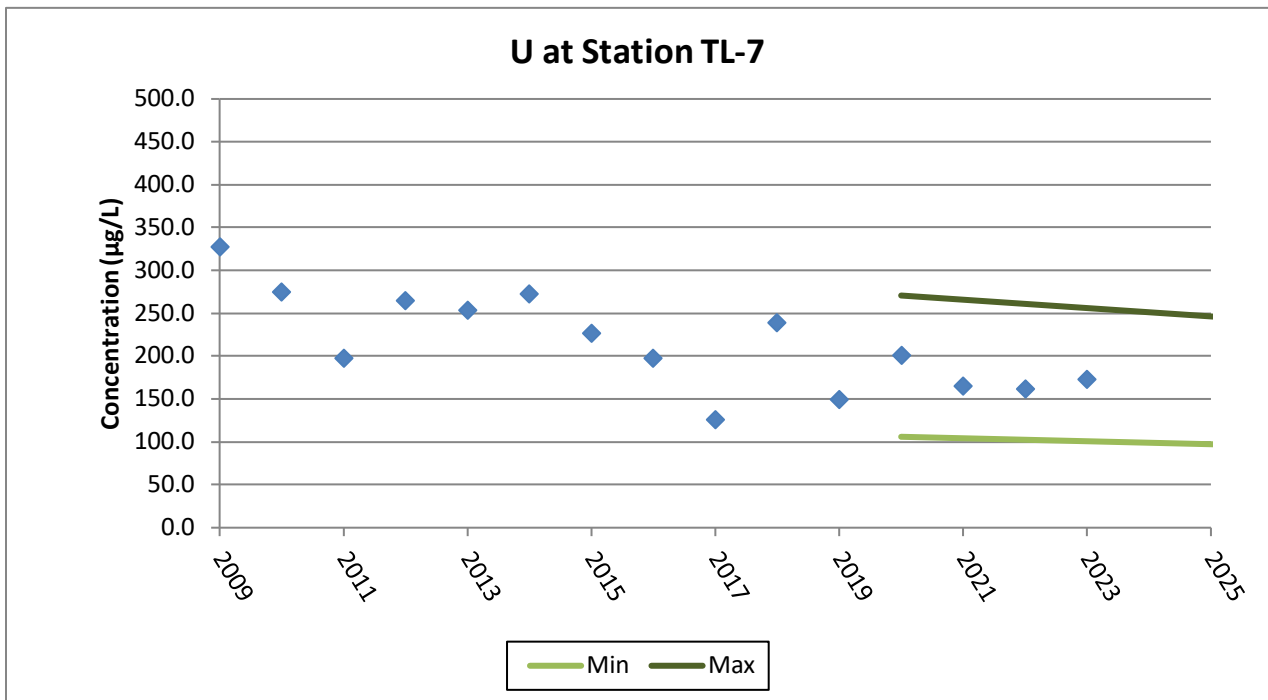
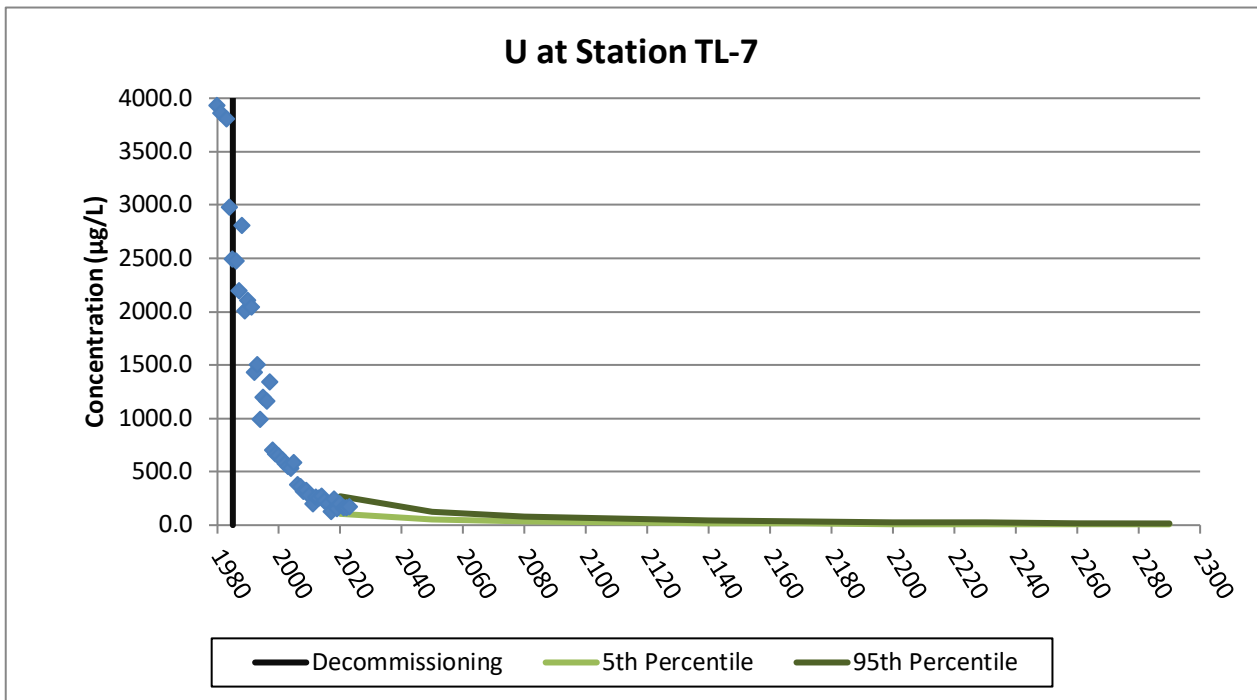


Figure 3.1-12: U Performance Indicator at TL-7

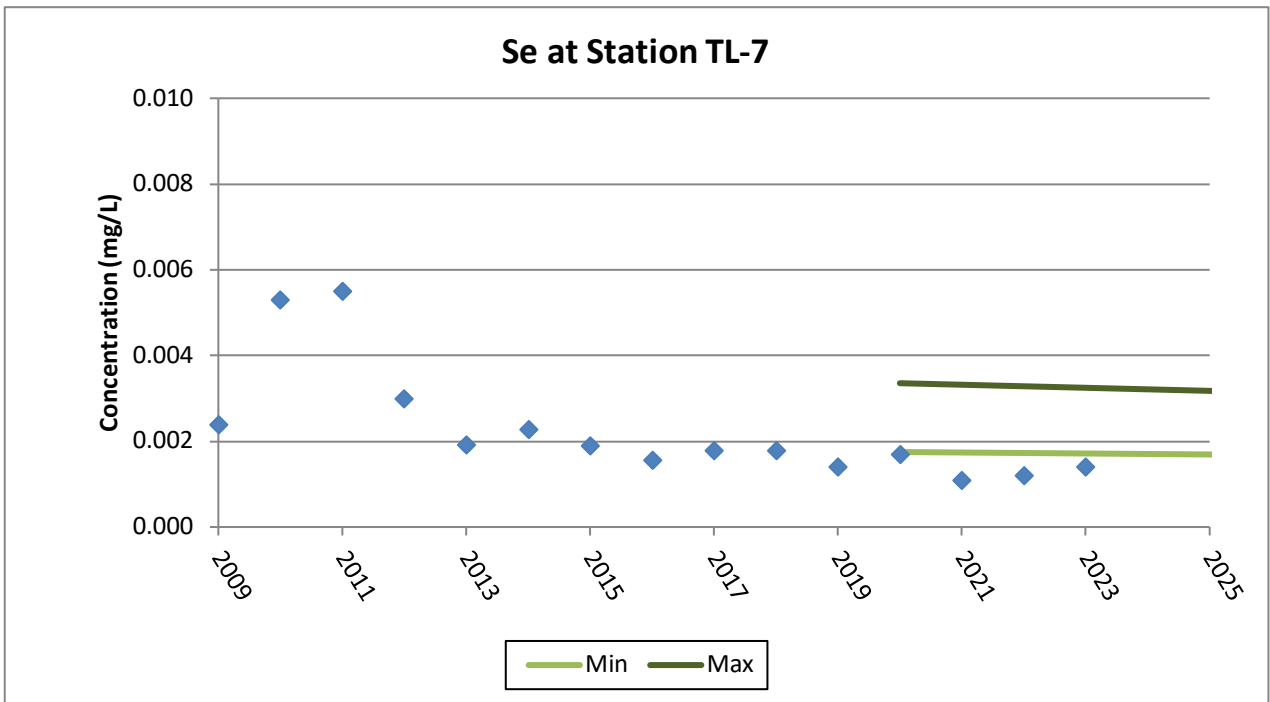
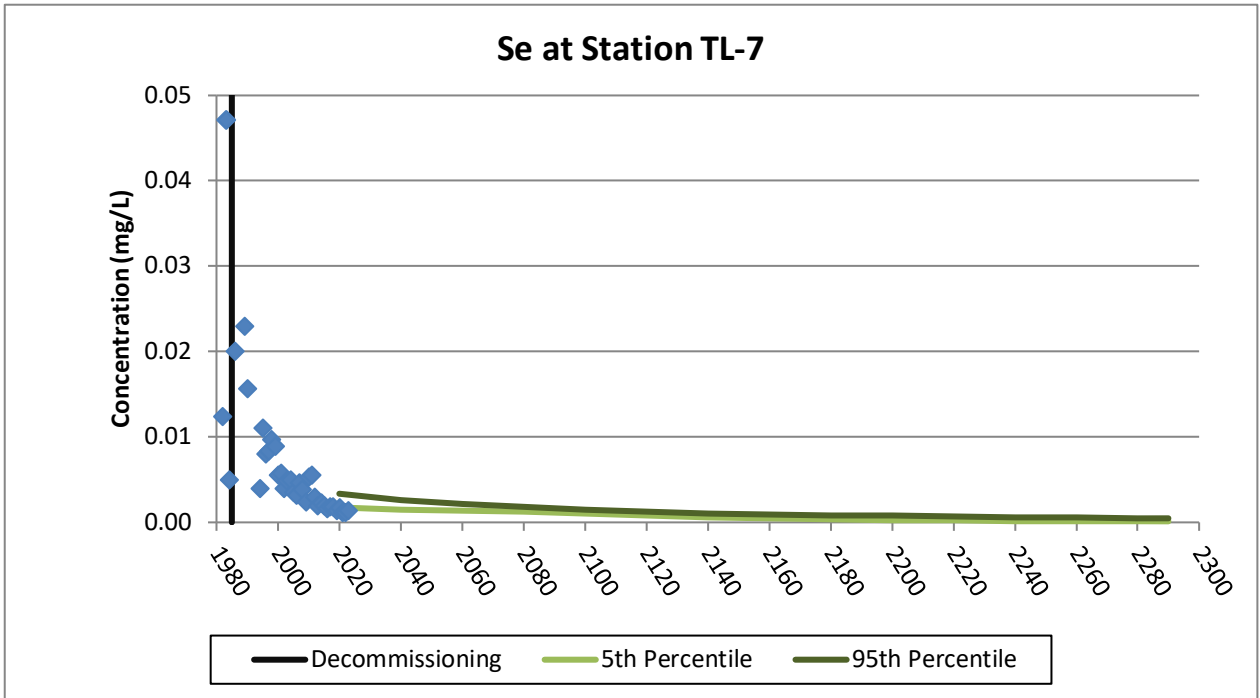


Figure 3.1-13: Se Performance Indicator at TL-7

The applicable performance indicators have all been met, indicating that the 3 decommissioned Minewater Reservoir properties have met the performance objectives. Human health and ecological risks have been managed to acceptable levels and the properties should be considered for release from CNSC licensing and transfer into the IC Program.

3.1.3.3 Minewater Reservoir Institutional Control Monitoring and Maintenance

The condition of the Minewater Reservoir outlet channel will be included in the physical site inspections conducted through the IC Program.

Specific aspects to be monitored as part of the IC program include:

- Evidence of recent human visitation,
- Minewater Reservoir:
 - Condition of the blasted outflow channel
 - Evidence of erosional features
- Condition of the remnant saddle dam
- Condition of vegetation, and
- Water quality.

No aspects of the URA 6 property will require maintenance in the IC Program. Although it is not expected that the Minewater Reservoir properties will require maintenance in the IC Program, Cameco has considered the time required for clearing of any potential beaver activity as part of the routine inspection of this area.

3.2 Lower Ace Creek General Description

The Lower Ace Creek area currently consists of two licensed properties (URA 1 and URA 7) that are proposed for release from CNSC licensing. In addition to the mill site, infrastructure included: a large fuel storage area, tailings lines, a laydown area; and a small open pit mine.

The Fay mine produced a total of 3,030,000 tonnes of waste rock, covering an area of approximately 33 ha, the majority of which was deposited on the URA 1 and URA 7 properties. Waste rock characterization completed by Eldorado in 1982 and, more recently by Cameco in 2012 to support development of the QSM, indicate that the site waste rock has a low potential for acid generation. In addition, visual observation and monitoring has not indicated any conditions or impacts that would be attributable to acid generation. Sampling has also indicated that the uranium content in the waste rock is below that threshold (0.03% U_3O_8) considered to be special/mineralized waste rock at the currently licensed uranium mines in northern Saskatchewan.

An assessment of the Fay waste rock pile concluded the waste rock slope at the Fay site is in good condition, the rock is durable and the risk of a deep-seated failure that would affect the global stability of the pile is judged to be very low (SRK 2010b).

During decommissioning existing structures in the area were demolished and tailings lines were dismantled. The mill structures were partially demolished and buried in place, voids were filled with waste rock to the extent practical, and then the entire mill facility was covered with waste rock. A total of approximately 259,100 m³ of waste rock was hauled to the mill complex for this purpose.

Three seeps have been identified at the base of the Fay waste rock pile on the URA 1 (one seep) and URA 7 (two seeps) properties. Water quality samples and flow measurements were collected opportunistically since 2004 to identify long-term water quality trends; however, flow from these seeps is intermittent and typically limited to freshet and major precipitation events.

In 2019, the JRG accepted that the seep monitoring program objective had been met and it was removed from the Beaverlodge Environmental Monitoring Program. Monitoring the condition of the seeps is included in the IC inspection and monitoring program that has been accepted by the regulatory agencies.

A water quality performance indicator measured at the outlet of Lower Ace Creek (Station AC-14) applies to the two remaining Lower Ace Creek properties. To avoid duplication, performance with respect to this indicator will only be discussed for the URA 1 property.

3.2.1 URA 1

3.2.1.1 Description

The URA 1 property (see **Figure 3.2-1**) is a 17.5 ha parcel of land that, during operations, hosted the former mill annex buildings, oxygen plant, a small open pit (Lower Fay Pit) and a portion of the Fay waste rock pile. During decommissioning, the mill structures were demolished, and the area was covered and contoured with waste rock.

More recently, during implementation of the Path Forward, the Lower Fay Pit was used to dispose of debris collected from the final inspections and clean-up of other decommissioned Beaverlodge properties. Following a regulatory approved remediation plan, the debris in Lower Fay pit was compacted and covered with clean waste rock in 2023. The remaining pit walls are approximately 5 m high and pose no greater risk than the natural landforms found in the surrounding area.

URA 1 Property



Figure 3.2-1: URA 1 Property

3.2.1.2 Evaluation of Performance Indicators

Results of the surficial gamma survey conducted on the URA 1 property in 2014, and an additional survey completed on the Lower Fay Pit waste rock cover (2024) demonstrate that URA 1 meets the criteria identified in the EPB-381.

Inspections identified 8 exploration boreholes on the URA 1 property. All accessible boreholes were sealed with concrete, in accordance with regulatory approved methods. Three of the boreholes that had been identified as exhibiting, or having the potential to exhibit, artesian conditions have shown no evidence of flows since being plugged. The coordinates of all boreholes have been included in the IC record.

The URA 1 property does not host any mine openings to surface.

Portions of the property overlay the former Fay underground mine workings. The site wide crown pillar assessment indicated that the likelihood of surface subsidence on the property was low due to the thickness of the crown pillar (> 25 m) and the depth of the underground workings. Given that, no additional investigations were suggested. Areas associated with the underground workings have shown no indication of instability or subsidence in the 40 years since decommissioning.

A final inspection of the property has been completed and debris has been removed and disposed of in Lower Fay Pit.

Water quality measured at the outlet of Lower Ace Creek (Station AC-14, see **Figure 2.6-1**), is compared to modelled predictions as a performance indicator associated with the decommissioned URA 1 and URA 7 properties. The relevant water quality constituents that are assessed for this performance indicator include: radium-226, uranium, and selenium. As shown in **Figure 3.2-2, 3.2-3, and 3.2-4** the trend of measured concentrations of these parameters fall within the range of modelled predictions for AC-14. A summary of the measured and predicted values is outlined below:

- Radium-226 and selenium levels in Lower Ace Creek are within the modelled range and are expected to remain below the SEQG of 0.11 Bq/L and 2 µg/L, respectively, over the long term.
- Uranium levels in Lower Ace Creek are within the modelled range and are expected to continually decline over the long-term.

The water quality of Lower Ace Creek will continue to be monitored at Station AC-14 as part of the Beaverlodge LTMP to be implemented under the IC program.

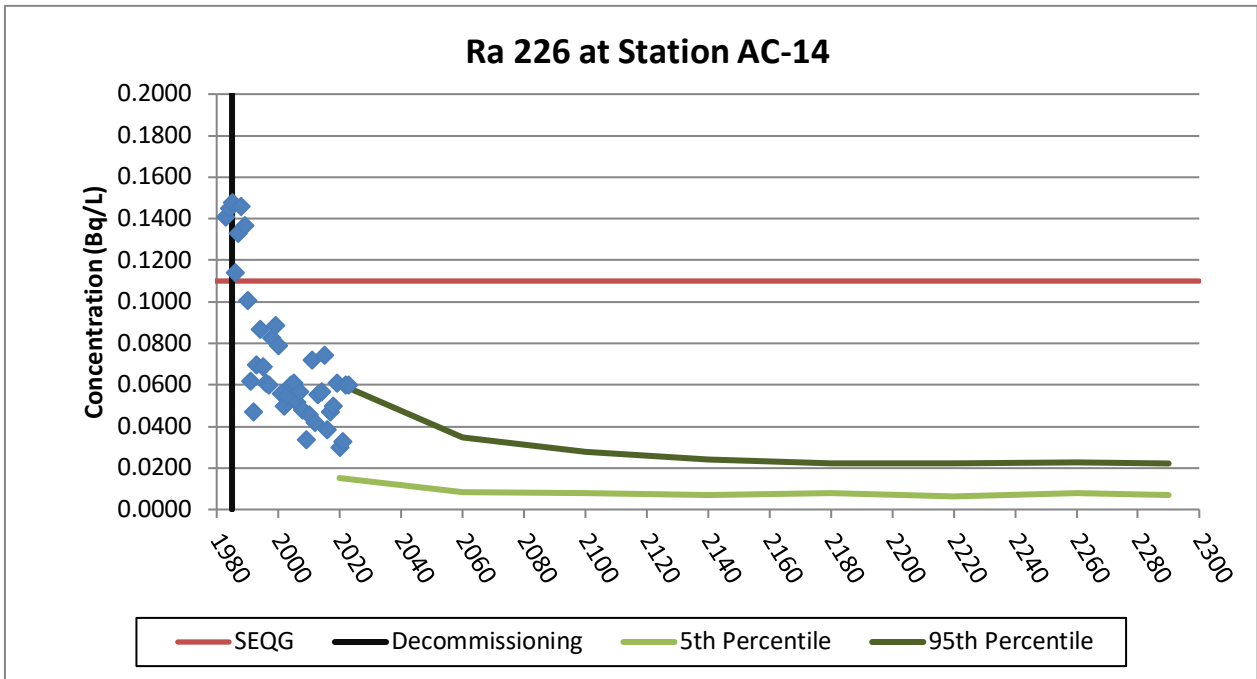


Figure 3.2-2: Ra-226 Performance Indicator at AC-14

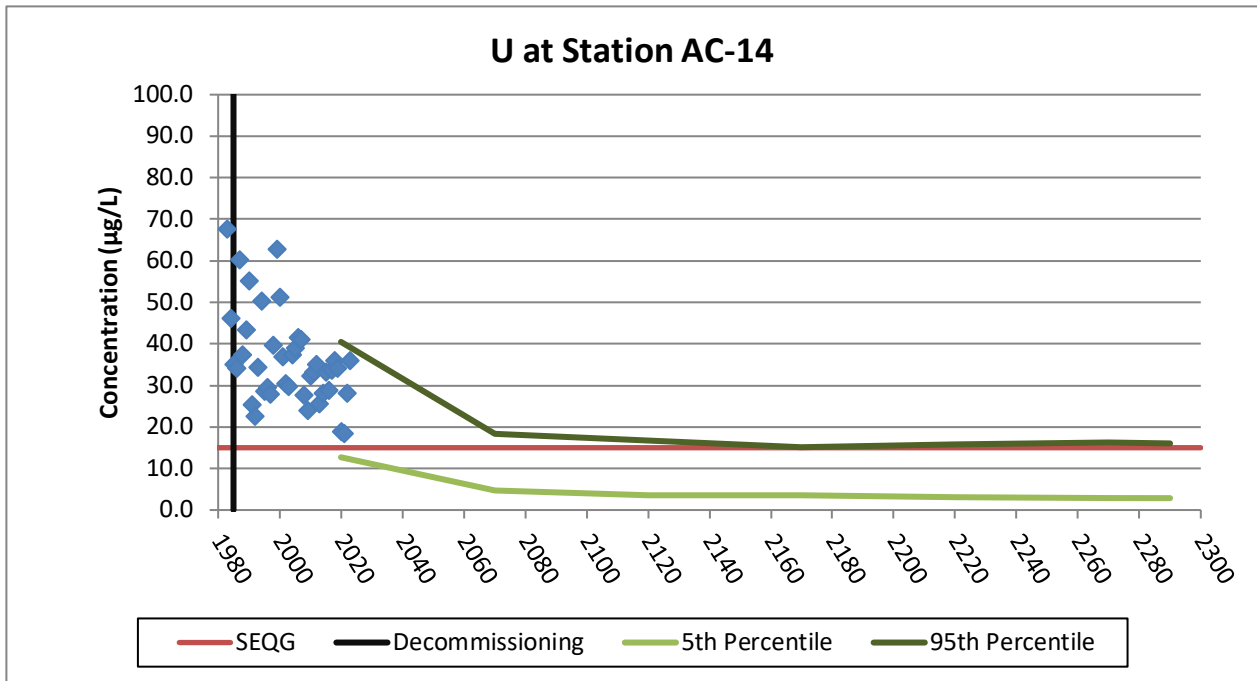


Figure 3.2-3: U Performance Indicator at AC-14

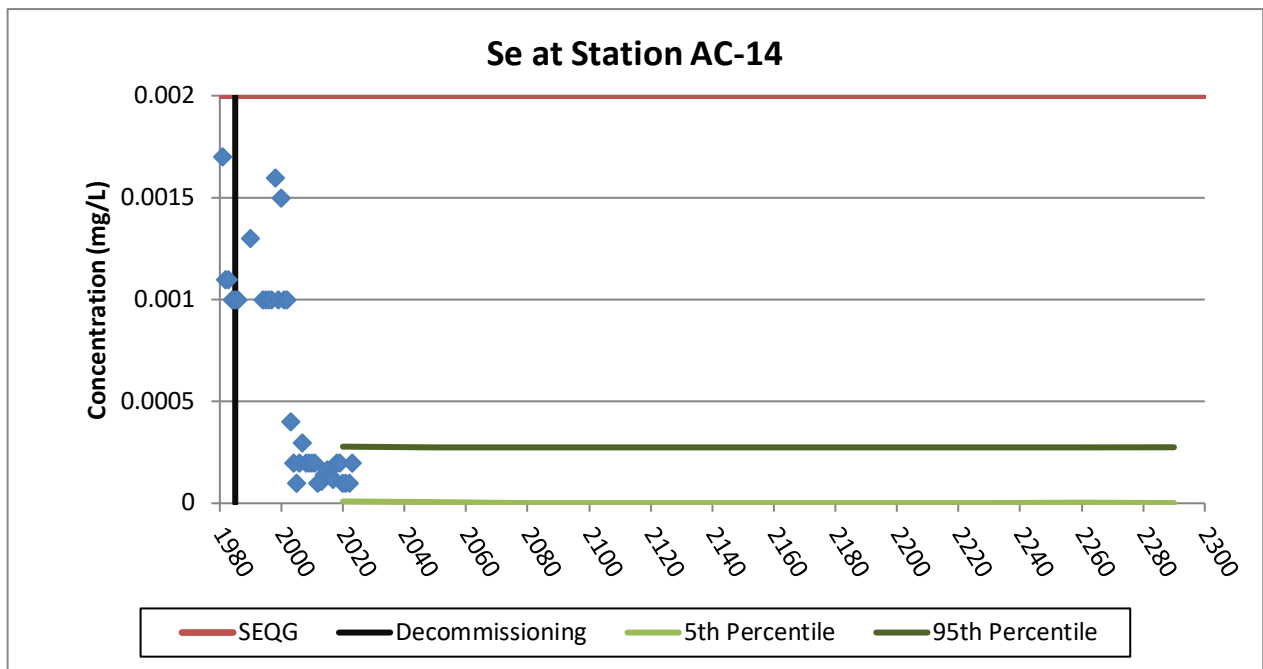


Figure 3.2-4: Se Performance Indicator at AC-14

*Note: The reduction in Se concentration noted in the figure is the result of a reduction in lab detection limits

The applicable performance indicators have all been met, indicating that the decommissioned URA 1 property has met the performance objectives. Human health and ecological risks have been managed

to acceptable levels and the property should be considered for release from CNSC licensing and transfer into the IC program.

3.2.1.3 URA 1 Institutional Control Monitoring and Maintenance

The URA 1 waste rock slopes will be included in the physical site inspections conducted through the IC Program.

Specific aspects to be monitored as part of the IC program include:

- Evidence of recent human visitation,
- Condition of waste rock
- Condition of cover in Lower Fay Pit
- Note any seepage from former open pit
- Observe and note condition of Seep 1 and
- Evidence of flow from sealed boreholes that were previously flowing:
 - BH-007;
 - BH-15;
 - BH-31.

Although no aspect of the URA 1 property is expected to require maintenance under the IC Program, funds will be provided to perform remediation of the Lower Fay Pit cover if unexpected settling occurs. Material to remediate any potential settling has been stockpiled in close proximity to the URA 1 and URA 7 properties.

3.2.2 URA 7

3.2.2.1 Description

The URA 7 property (see **Figure 3.2-5**) is a 20.9 ha parcel of land located in the Lower Ace Creek area. During operations, this property hosted the majority of the mill related infrastructure, including:

- The mill facility,
- The 1.5 X 1.5 m Sorting Plant Bin,
- The 1.5 X 2.4 m Sorting Plant Raise,
- The 2.4 X 2.4 m CB-1 Access Raise,
- The Waste Haulage Adit, and
- The bulk fuel storage tanks.

At decommissioning, the mill structures were partially demolished with the resulting voids filled with demolition material and waste rock. The openings to surface were backfilled with waste rock and the entire area was then covered with waste rock and contoured to align with the existing topography. Tanks from the bulk fuel farm area were salvaged and sold.

URA 7 Property



Figure 3.2-56: URA 7 Property

3.2.2.2 Evaluation of Performance Indicators

Results of the surficial gamma survey conducted on the property demonstrate that the majority of URA 7 meets the criteria in the EPB-381 guideline. However, a small portion of the property with survey results above the criteria required further evaluation. The risk-based evaluation concluded that incremental dose associated with URA 7 based on measured gamma results and a reasonable land use scenario are well below the public dose criterion of 1 mSv/yr (ARCADIS 2015).

The results of a subsequent survey completed in 2024 on areas disturbed by the removal and placement of waste rock for fill/cover purposes, confirmed the original survey results.

Inspections have identified five exploration boreholes located on the URA 7 property. These boreholes have been sealed with concrete, in accordance with regulatory-approved methods. The coordinates of all boreholes have been included in the IC Program record.

Mine openings associated with the Sorting Plant Bin and Raise were backfilled and covered with waste rock during decommissioning. These openings were uncovered in 2016 and 2022, to confirm their location and were subsequently re-covered. These openings are shallow and do not provide access to the underground mine workings and have shown no signs of settling in the 40 years since decommissioning. The Waste Haul Adit and CB-1 Access Raise were excavated and re-secured in 2016 and 2021, respectively, following regulatory approved engineered designs.

Portions of the property overlay the former Fay mine's underground workings. The site wide crown pillar assessment indicated that the likelihood of surface subsidence on the property was low due to the thickness of the crown pillar (> 25 m) and the depth of the underground workings. Given those findings, no additional investigations were suggested. Areas associated with the underground workings have shown no indication of instability or subsidence in the 40 years since decommissioning.

A final inspection of the property has been completed and debris has been removed and disposed of in Lower Fay Pit.

A detailed discussion on the water quality performance indicator for the Lower Ace Creek is provided in the URA 1 property section to reduce duplication. Water quality measured at AC-14 is within the modelled range and therefore the water quality performance indicator has been met for the URA 7 property.

The applicable performance indicators have all been met, indicating that the decommissioned URA 7 property has met the performance objectives. Human health and ecological risks have been managed to acceptable levels and the property should be considered for release from CNSC licensing and transfer into the IC program.

3.2.2.3 URA 7 Institutional Control Monitoring and Maintenance

The URA 7 property openings to surface and waste rock slopes will be included in the physical site inspections conducted through the IC Program.

Specific aspects to be monitored as part of the IC program include:

- Evidence of recent human visitation:
- Condition of waste rock,

- Observe and note condition of seeps

The condition of:

- The 1.5 X 1.5 m Sorting Plant Bin,
- The 1.5 X 2.4 m Sorting Plant Raise,
- The 2.4 X 2.4 m CB-1 Access Raise, and
- The Waste Haulage Adit.

Although no aspect of the URA 7 property is expected to require maintenance under the IC Program, funds will be provided to perform remediation of the mill cover if unexpected settling occurs. Material to remediate any potential settling has been stockpiled near the URA 1 and URA 7 properties.

3.3 BOLGER 1

3.3.1 Description

The BOLGER 1 property (see **Figure 3.3-1**) is a 11.5 ha parcel of land located along the southeast shore of Verna Lake and contains the decommissioned Bolger open pit mine. The Bolger mine was operated intermittently between 1958 and 1980 and was the largest pit at the Beaverlodge site.

During operations, the Bolger mine generated approximately 639,300 tonnes of waste rock covering an area of approximately 4.5 ha. The majority of the waste rock was deposited in an area south of the pit, filling a former valley that originally connected Zora and Verna Lakes. Waste rock characterization completed by Eldorado in 1982 and more recently by Cameco in 2012 indicate that the waste rock has a low potential for acid generation. In addition, visual observation and monitoring has not indicated any conditions or impacts that would be attributable to acid generation. Sampling has also indicated that the uranium content in the waste rock is below the threshold (0.03% U_3O_8) considered to be special/mineralized waste rock at the currently licensed uranium mines in northern Saskatchewan.

At closure, the Bolger Pit was used for disposal of materials generated from the decommissioning of other Beaverlodge properties and then was backfilled with waste rock to the natural ground elevation at the southwest side of the pit. A stability assessment of the residual pit wall (20-30 m) was completed and concluded that the rock mass was very competent with no indications of slope instability (SRK 2010a).

One of the remedial options undertaken as part of the Path Forward was the excavation of waste rock to re-establish flow through Zora Creek, connecting Zora and Verna Lakes. This project was implemented based on community input received during a site tour and was evaluated during the 2012 Remedial Options Workshop with the goal of realizing localized improvement in water quality (primarily reduced uranium concentrations) downstream in Verna Lake. Construction occurred between 2014-2016, with approximately 147,700 m³ of excavated waste rock placed in the Bolger Pit, reducing the height of the residual pit wall to approximately 15 m (SRK 2017). Inspections of the remediated Zora Creek channel completed in 2020 by a third-party geotechnical expert noted no observable changes to the landform and concluded that, from a geotechnical perspective, it was reasonable that the properties associated with the Bolger Pit and Zora Creek channel reconstruction be transferred to the IC Program (SRK 2021).

Bolger 1 Property



Figure 3.3-1: BOLGER 1 Property

3.3.2 Evaluation of Performance Indicators

Results of the surficial gamma surveys conducted on the property in 2014 and 2016, following completion of the Bolger Flow Path Reconstruction Project, demonstrate that BOLGER 1 meets the criteria identified in the EPB-381.

Surface inspections identified two exploration boreholes located on the BOLGER 1 property that have been sealed with concrete following regulatory-approved methods.

The BOLGER 1 property does not host any mine openings to surface.

Portions of the BOLGER 1 property overlay the former Verna mine workings. The site wide crown pillar assessment indicated that the likelihood of surface subsidence on the property was low due to the thickness of the crown pillar (approx. 80 m) and the depth of the underground workings and no additional investigations were suggested. Areas associated with the underground workings have shown no indication of instability or subsidence in the 40 years since decommissioning.

A final inspection of the property has been completed and any debris found on the property has been removed and disposed of at an approved location.

The BOLGER 1 property borders Zora Lake to the southeast and Verna Lake to the northwest. Following implementation of the Zora Creek reconstruction completed in 2016, water quality was expected to decline in the short term, during and following the re-establishment of Zora Creek, due to an increased loading of uranium that resulted from construction activities disturbing the flow path. Recent improvements in water quality have seen uranium concentrations decrease since 2016, meeting the performance indicator established for this station.

Water quality measured downstream of BOLGER 1 at outflow of Verna Lake (Station AC-6A, see **Figure 2.6-1**) is compared to modelled predictions as a performance indicator for the property. The relevant water quality constituents assessed as part of the performance indicator include radium-226, uranium, and selenium. As shown in **Figure 3.3-2**, **3.3-3**, and **3.3-4**, the trend of measured concentrations of these parameters fall within the range of modelled predictions for AC-6A. A summary of the measured and predicted values is outlined below:

- Selenium and radium-226 concentrations in Verna Lake are within the modelled range and are expected to remain low (e.g., below applicable SEQGs) over the long term.
- As predicted, uranium concentrations measured at the outflow of Verna Lake increased during and immediately following completion of the stream reestablishment project, due to the excavation of waste rock and physical disturbance along the flow path. More recently measured uranium values have decreased and are currently trending within the modelled range. Slightly elevated concentrations in 2023 are believed to be the result of localized low flow conditions in the channel. Uranium concentrations are predicted to continually improve over the long term.

The water quality of Verna Lake will continue to be monitored at Station AC-6A as part of the Beaverlodge LTMP to be implemented under the IC program.

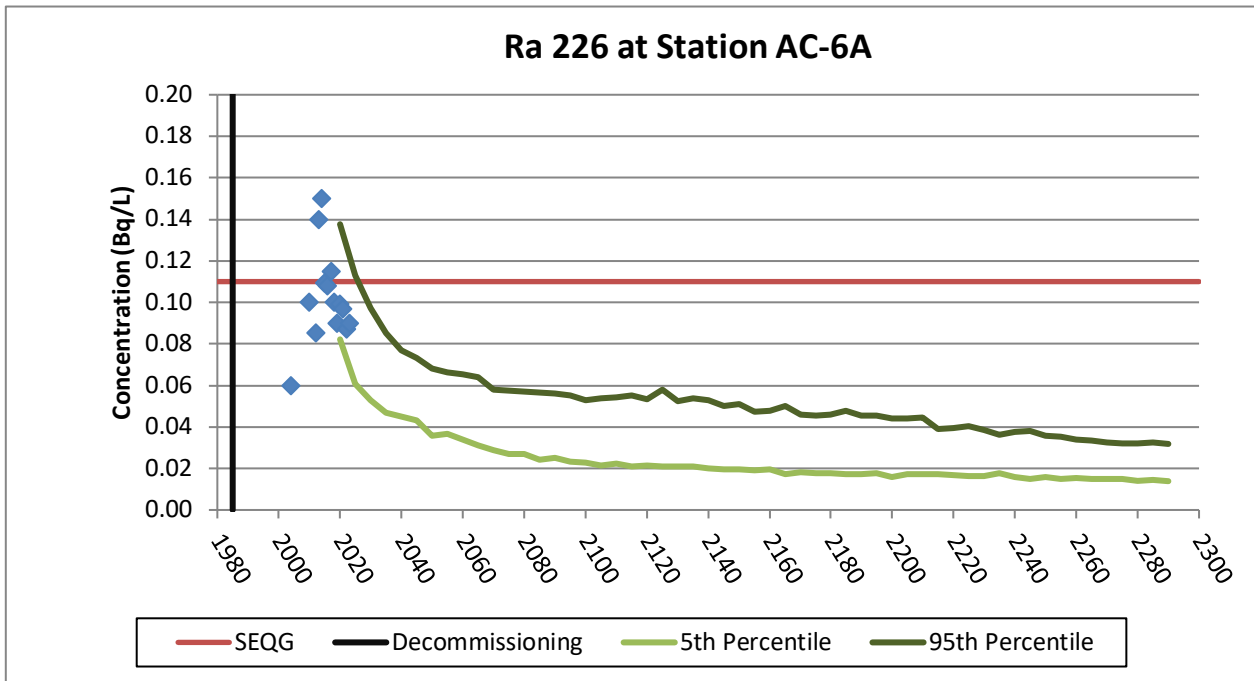


Figure 3.3-2: Ra-226 Performance Indicator at AC-6A

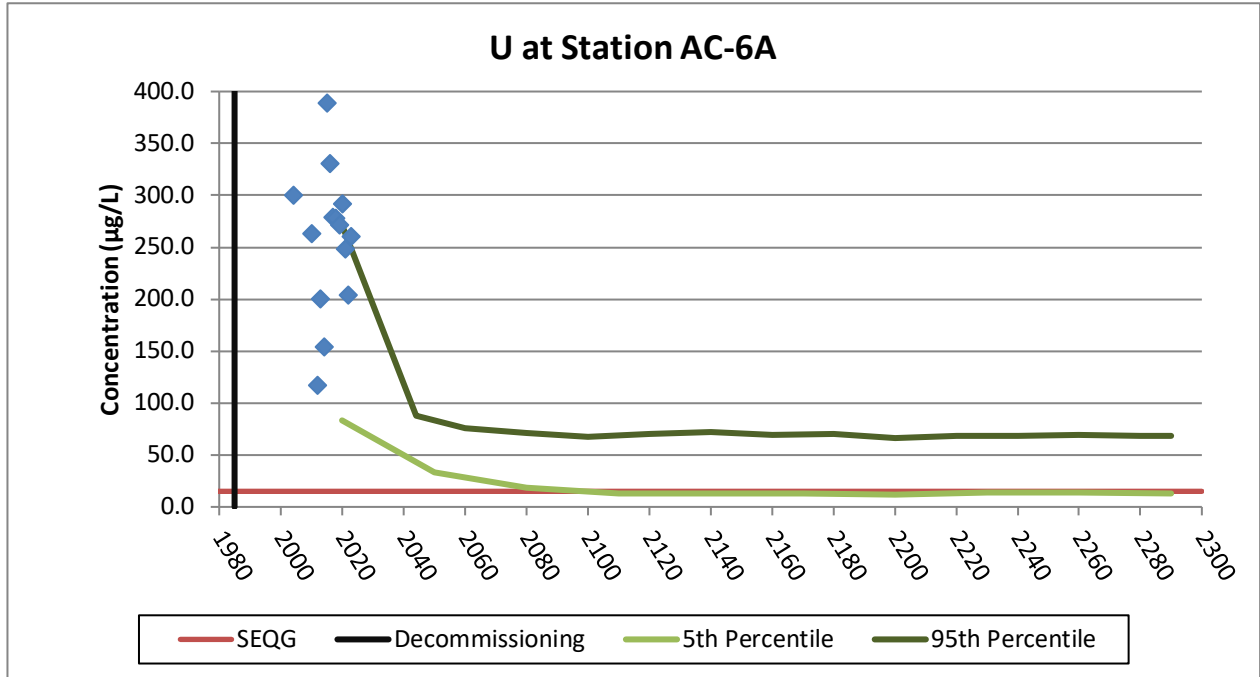


Figure 3.3-3: U Performance Indicator at AC-6A

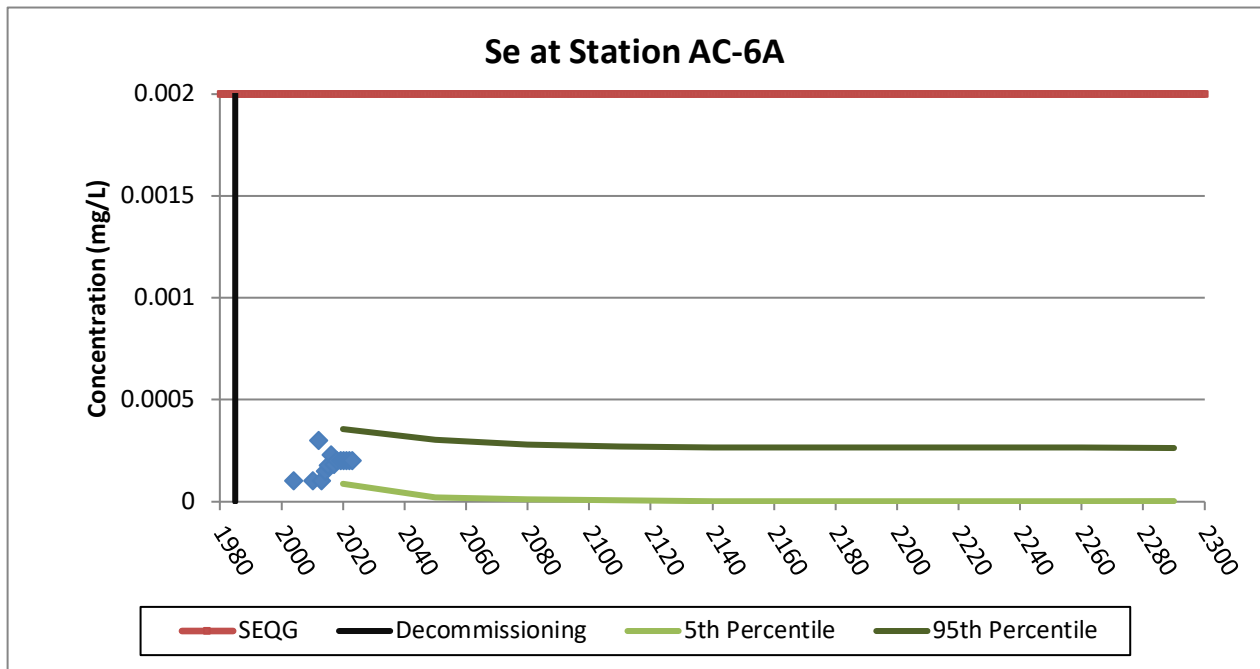


Figure 3.3-4: Se Performance Indicator at AC-6A

*Note: The reduction in Se concentration noted in the figure is the result of a reduction in lab detection limits

The applicable performance indicators have all been met, indicating that the decommissioned BOLGER 1 property has met the performance objectives. Human health and ecological risks have been managed to acceptable levels and the property should be considered for release from CNSC licensing and transfer into the IC program.

3.3.3 BOLGER 1 Institutional Control Monitoring and Maintenance

Based on the historical activities at the BOLGER 1 property, waste rock slopes will require inspection under the Province of Saskatchewan's institutional control management framework.

Such an inspection should be conducted of all disturbed areas and focus on the following aspects:

- Evidence of recent human visitation,
- Condition of waste rock,
- Condition of channel,
- Evidence of new beaver activity
- Condition of the outlet of Zora Lake.
- Channel side slopes intact,
- Note condition of channel base
- Water quality at AC-6A (if flowing).

No aspect of the BOLGER 1 property will require maintenance under institutional control.

4.0 OTHER MATTERS OF REGULATORY INTEREST

4.1 Impact Assessment

The Beaverlodge properties were fully decommissioned, in accordance with a regulatory approval from the AECB, in 1985 and in accordance with provincial and federal regulations. In the absence of a trigger under the *Impact Assessment Act* (IAA 2019), an impact assessment is not required for the transfer of the decommissioned Beaverlodge properties to the IC Program.

4.2 Indigenous and Community Engagement

4.2.1 Indigenous Engagement

Cameco recognizes the right of Indigenous groups to be consulted and, where applicable, to have their interests accommodated by the Crown with respect to activities associated with CNSC-licensed operations and projects that could potentially impact the exercise of Indigenous or treaty rights. Cameco assists the CNSC in the aggregate discharge of Indigenous consultation and accommodation obligations where they arise. The Crown's duty to consult and, if applicable, accommodate aligns with Cameco's corporate values, commitments, and measures of success, and as such constitutes sound business practice.

As the majority of northern Saskatchewan residents are of Indigenous origin, including First Nations and Métis, Cameco's public engagement activities relating to the decommissioned Beaverlodge properties provide opportunities for the CNSC and Cameco to effectively consult with Indigenous groups with an interest in the decommissioned Beaverlodge properties. Cameco's engagement process is described, in detail, within the approved Beaverlodge Public Information Program (BVL-PIP).

In accordance with Regulatory Document 3.2.2, *Indigenous Engagement* (CNSC 2022), an Indigenous Engagement Report will be submitted to CNSC staff that summarizes the Indigenous engagement activities completed regarding this request for a licence decision.

4.3 Public Information Program

Consistent with Cameco's vision, mission and values and measures of success, the objective of the BVL-PIP is to ensure target audiences with an interest in the decommissioned Beaverlodge properties are informed on a timely basis about activities and potential effects on the environment and the health and safety of persons, and thereby build the trust and support of stakeholders.

Cameco's focus for engagement efforts is with the northern settlement of Uranium City (Uranium City), which includes the Uranium City Métis Local #50 President, as this community is the only community with year-round road access to the properties.

In June 2016, Cameco signed a confidential collaboration agreement with the seven Athabasca Basin communities known as the Ya'thi Néné Collaboration Agreement (CA). The CA sets out Cameco's obligations to the communities under four main pillars:

- workforce development

- business development
- community investment
- community engagement and environmental stewardship

The community engagement and environmental stewardship pillar of the CA defines Cameco's obligations in relation to engaging and informing the Athabasca Basin communities and provides a structure for these communities to identify and bring forward issues related to activities at the decommissioned Beaverlodge properties.

Signatories to the Ya'thi Néné CA are:

- Uranium City
- Northern Settlement of Camsell Portage.
- Northern Hamlet of Stony Rapids.
- Northern Settlement of Wollaston Lake.
- Fond du Lac Denesųłiné First Nation (Fond du Lac).
- Black Lake Denesųłiné First Nation.
- Hatchet Lake Denesųłiné First Nation.

Engagement between Cameco and the communities under the CA occurs primarily through the Athabasca Joint Engagement and Environment Subcommittee (AJES), a joint committee of community and industry representatives that meets regularly to discuss matters of importance to the communities and provides a channel for the communities to share traditional knowledge. Under the agreement, the Ya'thi Néné Land and Resource Office (YTNLRO) was established to provide support to the subcommittee and the executive director is an AJES member. In addition, the office has become a point of contact for the communities.

In addition to engaging with the MN-S Local #50 President and the Métis people in the vicinity of the decommissioned Beaverlodge properties, Cameco also engages directly with the Stony Rapids Métis Local #80 and #79 President.

While the rights-bearing First Nation and Métis communities of the Athabasca Basin are the primary audience for the BVL-PIP, Cameco considers the general public of the Northern Administrative District (NAD) and the province of Saskatchewan generally to be a secondary audience. The NAD is a large region with a dispersed population and many traditional and resource-based land users. The population of the NAD is approximately 36,500, including people of First Nation (Cree and Dene), Métis and non-Indigenous origin.

Cameco provides information and responds to inquiries from the NAD communities, the Métis Nation of Saskatchewan (MN-S), organizations such as the Prince Albert Grand Council, non-government organizations and other groups that may express interest in the decommissioned Beaverlodge properties, such as the Athabasca Chipewyan First Nation (ACFN) through our websites and social media channels and direct engagement when appropriate.

In addition, Cameco engages with the Northern Saskatchewan Environmental Quality Committee (NSEQC) which consists of representatives from 32 northern municipal and First Nations communities. Members of the NSEQC are appointed by the provincial government, based on recommendations from community leaders.

In 2020 and 2021, Cameco hosted the annual public meeting, normally held in Uranium City, virtually due to the Covid-19 pandemic. In addition, virtual tours were created and shared on the Beaverlodge website with those interested to help people reconnect with the land around the decommissioned properties during the pandemic when ‘boots on the ground’ tours were not possible and see areas that are not easy to access. Drone footage and video of the properties was updated on the website in 2024 and includes perspectives from local community members. The video has also been translated to Dene.

Following the easing of pandemic travel restrictions, in-person meetings and site tours in Uranium City resumed. The in-person engagement activities completed since 2022 are discussed in the Section 4.2.3. Details regarding historic engagement activities in relation to the implementation of the Path Forward, and release of licensed properties from CNSC Licensing activities, are provided in the Indigenous Engagement Report.

Cameco also uses a range of communication tools to keep those interested on the decommissioned Beaverlodge properties informed including fact sheets, posters, newsletter/magazine content, virtual tour, presentations, and a specially purposed website (www.beaverlodgesites.com) to engage and communicate information of interest to the public for routine and non-routine situations, events and activities. Since 2016, meeting summaries and/or presentations have been provided in the corresponding Annual Report.

4.3.1 Summary of Engagement Activities Conducted

Engagement activities pertaining to the decommissioned Beaverlodge properties have been ongoing throughout the current and previous licence terms, in accordance with the approved BVL-PIP.

In 2022, Cameco applied for, and in May 2023 was granted, a two-year licence renewal to provide adequate time for regulatory processes, public and Indigenous engagement, and document preparation to support the final release of the decommissioned Beaverlodge properties and transfer to the IC Program.

Cameco’s engagement activities in 2023 and 2024, with rights holders and community stakeholders covered the proposed transfer of the remaining 27 properties into the IC Program, the inspection, maintenance and continued monitoring of the sites once the SkMER takes over responsibility, and the water advisories and fish consumption guidelines in place in the Uranium City area. Information was provided at in-person meetings and site visits, in brochures, newsletters, posters as well as an updated virtual tour video.

Cameco provided additional details to address questions that were raised during engagement activities, including timelines associated with the proposed transfer of the remaining 27 properties into the IC Program, as well as providing an in-depth description of the continued site inspections, maintenance and monitoring of the properties by the SkMER. This included information on the LTMP and how the water and fish advisories will be routinely reviewed and assessed to determine when they may be able to be lifted.

A summary of current and historical engagement activities related to the decommissioned Beaverlodge properties conducted by Cameco with the rights holders, and community stakeholders since 2009 was provided in Appendix 1 of the Indigenous Engagement Report.

4.3.2 Summary of Planned Engagement Activities

While we continue to be the licensee Cameco is committed to our engagement activities and keeping those interested informed. In accordance with the approved BVL-PIP, Cameco's engagement activities will continue to provide opportunities for open dialogue and discussion.

In addition to the engagement activities completed throughout the current licence term, Cameco will continue to discuss information pertaining to the proposed transfer of the remaining 27 properties into the IC Program during the scheduled Q4 AJES and NSEQC meetings.

Details and key dates associated with the public hearing scheduled for January 30, 2025, participant funding opportunities for those interested in participating in the hearing process, and the deadline for interventions were included in the Spring YNLR newsletter.

In late September 2024, the YNLR provided written comments on the Beaverlodge LTMP. Cameco plans to host a meeting with YNLR and the third-party subject matter expert who developed the LTMP in October 2024, to provide responses to the questions raised. Following the meeting, Cameco will provide a written response to the YNLR.

Additional engagement activities may be undertaken, as required.

4.4 Community Related Monitoring

4.4.1 Country Foods Assessment

In 2010, Cameco contracted Canada North Environmental Services (CanNorth) a third party First Nations-owned company to complete a two-year Country Foods assessment with a primary objective of determining whether there were any potential human health risks associated with the consumption of country foods gathered in the Uranium City area by local residents.

Information regarding country food consumption habits and locations of country food harvesting were gathered during Year 1 of the program. The focus in Year 2 of the study was to complete the gathering of samples to determine if locally harvested country foods were safe to consume. Vegetation and animal samples were collected over a two-year period from the Beaverlodge properties, Camsell Portage, and areas around Uranium City by researchers and local land users and sent to Saskatchewan Research Council (SRC) laboratory for chemical analysis. Maps of the sampling locations were also provided at a public meeting to provide the attendees with a visual aid to see exactly what areas had been sampled.

A risk assessment conducted using results from the traditional food samples concluded that consumption of country foods does not present health risks to Uranium City residents, provided the fish consumption advisories in place are followed (CanNorth and SENES 2012). This report has been submitted and accepted by regulators.

4.4.2 Eastern Athabasca Regional Monitoring Program

The Eastern Athabasca Regional Monitoring Program (EARMP) was established in 2011 under the Province of Saskatchewan's Boreal Watershed Initiative and is currently supported by funding contributions from SkMOE, CNSC, Cameco and Orano. The EARMP was designed to

identify potential cumulative effects downstream of uranium mining and milling operations in the Eastern Athabasca region of northern Saskatchewan.

The community-based component of the program partners with communities annually to monitor the safety of traditionally harvested country foods by collecting and testing representative water, fish, berry, and mammal tissue samples from the seven communities located in the region. Harvesting and consuming traditional foods are an important part of the culture in northern Saskatchewan, which contributes to an overall healthy lifestyle through physical activity and healthy eating.

Community members collected and submitted samples of water, fish, berry, and mammals for testing. A Human Health Risk Assessment (HHRA) was completed in 2013 using sample results collected in the 2011 and 2012 community programs. An updated assessment was completed in 2018 using all water chemistry and country food chemistry collected since 2013. The results of both assessments demonstrated that the consumption of local surface water and country foods, while respecting local fish and water quality advisories, did not present health risks to Athabasca Basin residents and is safe.

The 2022/2023 program results continue to show that country foods harvested in the Uranium City area are safe for consumption with chemical profiles for water, fish, berry, and mammal tissue samples similar to natural background. The reports and data from the program are publicly available at www.earmp.ca.

In 2022, a ten-year summary report was prepared that summarized results from over 850 water and traditional food samples collected from 2011 to 2021. Results indicate that the measured concentrations in the samples are similar to baseline levels and the regional reference range, and those used in the 2018 HHRA.

Results from ten years of sampling have consistently demonstrated that water and traditional foods remain safe for consumption, and that they continue to be a safe and healthy dietary choice for residents of the Athabasca Basin. The 10-year summary report, annual reports and data from the programs conducted to date are publicly available at www.earmp.ca.

4.4.3 Community Based Environmental Monitoring Program

Building off eighteen years of data collected through the Athabasca Working Group (AWG) Environmental Monitoring Program (which was a product of the original Impact Management Agreement that Cameco signed with northern communities and First Nations in 1999), the program was enhanced in 2018 to create a Community Based Environmental Monitoring Program (CBEMP) for the Athabasca region. The CBEMP allows community members to become more involved and provide input to steer the direction of the program in their particular community. The program focuses on individual communities within the region on a rotating basis.

The overall study objective of the CBEMP is to gain an understanding of traditional food use by community members and to assess if these foods remained safe for consumption. The involvement of community members is one of the fundamental goals of the study. The study obtained information regarding the quantity, type, and harvest location of traditional foods through community interviews. To accomplish these objectives, a Traditional Food Frequency Questionnaire is developed in collaboration with community leadership and band members are hired and trained to conduct interviews with community residents.

To date, CBEMP studies have been completed in Black Lake Denesų́łnė First Nation /Stony Rapids, Hatchet Lake Denesų́łnė First Nation/Wollaston Lake, Fond du Lac Denesų́łnė First Nation, Uranium City and Camsell Portage. Since the start of the program, over 280 samples have been collected with results demonstrating that country foods identified and harvested by members of the communities remain safe and that regular consumption of locally collected fish, meat, berries and vegetation is encouraged. The results of these studies have been shared with local leadership and community members and a publicly available document summarizing the findings is posted on Cameco's northern website.

The Uranium City and Camsell Portage study was completed in 2023 and involved the local Ya'thi Nėnė Lands and Resource Office Community Land Technician (YNLR CLT), as well as Cameco and Orano community liaisons. Interviews were conducted by the YNLR CLT and community liaisons, with 37 people from Uranium City and Camsell Portage interviewed in 2023. Feedback from the YNLR CLT was also used to finalize the study design of the traditional foods monitoring program, which resulted in the collection of 50 food and water samples.

Results from the program indicated that chemicals in traditional foods were generally low and within the range for the region and were not of concern for the community. The report also included several recommendations, namely avoiding the use of lead shot and that community members follow the drinking water and fish consumptions guidelines issued by the SHA.

In 2023, a HHRA was completed based on information collected through the CBEMP. The assessment was completed for all communities, including both Uranium City and Camsell Portage, using community-specific information collected during community interviews and sampling programs.

The results of the assessment for Uranium City and Camsell Portage demonstrated that risks are negligible for people who consume a typical, or a high amount of traditional food while respecting local fish and water quality advisories. Harvesting and consumption of these foods are integral components of good health, and communities in the Athabasca region should continue regularly eating locally harvested fish, wild game, berries and plants.

4.4.4 CNSC Independent Environmental Monitoring Program

These results have been confirmed through the CNSC Independent Environmental Monitoring Program, which sampled several lakes in the Beaverlodge area in 2023. Results from that program are consistent with what our monitoring programs have shown.

4.4.5 Fookes Delta Community Based Program

In response to community questions about risks from hunting and eating moose that potentially graze on the plants growing on the Fookes Delta, Cameco developed a program that involved community youth in a hands-on environmental monitoring activity. Working closely with CanNorth, Cameco implemented the Fookes Delta Community Based Program (FDCBP) in 2021.

The FDCBP involved providing a classroom presentation to students to explain the program, followed by a field program visiting the Fookes Delta to search for signs of moose (tracks, browsed vegetation, and pellets), review trail camera photographs, and collect vegetation samples for off-site laboratory analysis.

A risk evaluation was then completed to examine the potential implication of moose consuming vegetation from the Fookes Delta and the corresponding risk to human consumption. Where possible, assumptions were consistent with those used in the approved 2020 ERA (CanNorth 2020).

Overall, the FDCBP demonstrated that it remains safe to eat moose that use, or eat vegetation from, the Fookes Delta. This is consistent with regional country foods assessments as well as the 2020 ERA that concluded that living a traditional lifestyle and consuming country foods from the Beaverlodge area, while respecting the water and fish advisories, can continue to be done safely. The report detailing the methods and findings of this program was submitted to SkMOE and the CNSC in 2021.

4.5 Healthy Fish Consumption Guideline

Residual risks with respect to the naturally recovering environmental conditions in waterbodies on and downstream of the decommissioned Beaverlodge properties are managed through a Healthy Fish Consumption Guideline issued by the SHA and SkMOE. This guideline indicates that members of the public can safely consume a total of five servings of lake trout/northern pike or two servings of white sucker/lake whitefish, per month, from Beaverlodge, Martin and Cinch Lakes. The guideline recommends avoiding the consumption of fish from Nero, Marie, Meadow, Minewater and Greer Lakes, and from lower Ace Creek (between Ace Lake and Beaverlodge Lake).

The guideline also recommends that people avoid drinking water from those waterbodies as they may contain elements that would not be eliminated by boiling.

The Healthy Fish Consumption Guideline will continue to be maintained by the province once all of the decommissioned properties have been transferred into the IC program. The LTMP includes monitoring of water quality and fish chemistry to provide the SHA and SkMOE with data necessary for the ongoing maintenance of the guideline.

4.6 Roads

The development of the Beaverlodge mine and mill resulted in road construction that supported infrastructure development and mining activities. These roads were also used to facilitate decommissioning of the properties and conducting frequent inspections during the transition phase monitoring period. Once the properties are in the IC program, monitoring frequencies will be reduced and access to certain areas will no longer be required.

In recognition that the current road network in the Uranium City area supports traditional activities, public engagement conducted in 2023 and 2024 sought to gather information from local land users regarding current and potential future land use so that any potential road closures would not impact the ability to conduct traditional activities. Based on the information that was provided, the original proposed road closure locations were modified to limit effects on access by traditional land-users.

Two minor access trails were closed in September 2023, preventing vehicular access to areas within the TMA. In 2024, two additional road closures were implemented. These road closures will limit vehicular access to the TMA and the remediated Zora Creek channel. During engagement activities it was indicated that people do not typically access the Bolger area to

conduct traditional activities. These areas are still accessible for use, but vehicle access has been restricted as a result of these closures.

4.7 Environmental Risk Assessment

In 2020, Cameco submitted an ERA for the decommissioned Beaverlodge properties (CanNorth 2020) as an update to the previous QSM. This assessment was completed in accordance with the CSA N288.6 standard (CSA 2022) and consisted of watershed dispersion modelling, and a pathways assessment to evaluate potential risks to ecological and human receptors on and downstream of the decommissioned properties. The model assumptions were revisited based on the current understanding of the environmental conditions and informed by almost 40 years of monitoring results. The environmental performance indicators related to the assessment of water quality at various monitoring stations were also updated.

The ERA utilized an updated probabilistic modelling approach to account for the range of natural variability seen in model input parameters and more accurately represent expected water quality results. As part of the performance indicator update, a sensitivity analysis was completed by including a wider range of environmental variability, such as that expected from climate change, to assess the potential impact on the performance indicators. Overall, it was found that the climate change scenario did not have a significant effect on the expected recovery of the site in the long term and the updated performance indicators are applicable.

Consistent with previously accepted assessments, the 2020 ERA concluded that the immediate and downstream environments will continue to gradually recover over time. As shown previously, based on reported use of the land, there are not expected to be risks to humans residing near, or consuming food harvested from properties related to the decommissioned Beaverlodge properties. Therefore, living a traditional lifestyle and consuming country foods from the area, while respecting the water and fish advisories, can continue to be done safely (CanNorth 2020).

4.8 Beaverlodge Lake Water Quality Monitoring

Beaverlodge Lake is the receiving environment for water from the decommissioned Beaverlodge properties, as well as other, non-Eldorado, former uranium mine and mill sites. Water quality predictions were provided in the 2020 Beaverlodge ERA for the outlet of Beaverlodge Lake (STN BL-5), to which future water quality monitoring conducted as part of the approved LTMP will be compared once the properties are in the IC Program.

Figures 4.9-1, 4.9-2, and 4.9-3 detail the expected natural recovery of Beaverlodge Lake and the recent water quality results. As shown below, the uranium, selenium, and radium-226 concentrations are within the modeled predictions. Selenium is consistently near the SEQG value of 0.002 mg/L, while radium-226 was below the corresponding SEQG value of 0.11 Bq/L and slightly lower than the modelled predictions. Uranium is within modelled predictions and is predicted to continue decreasing over the long-term.

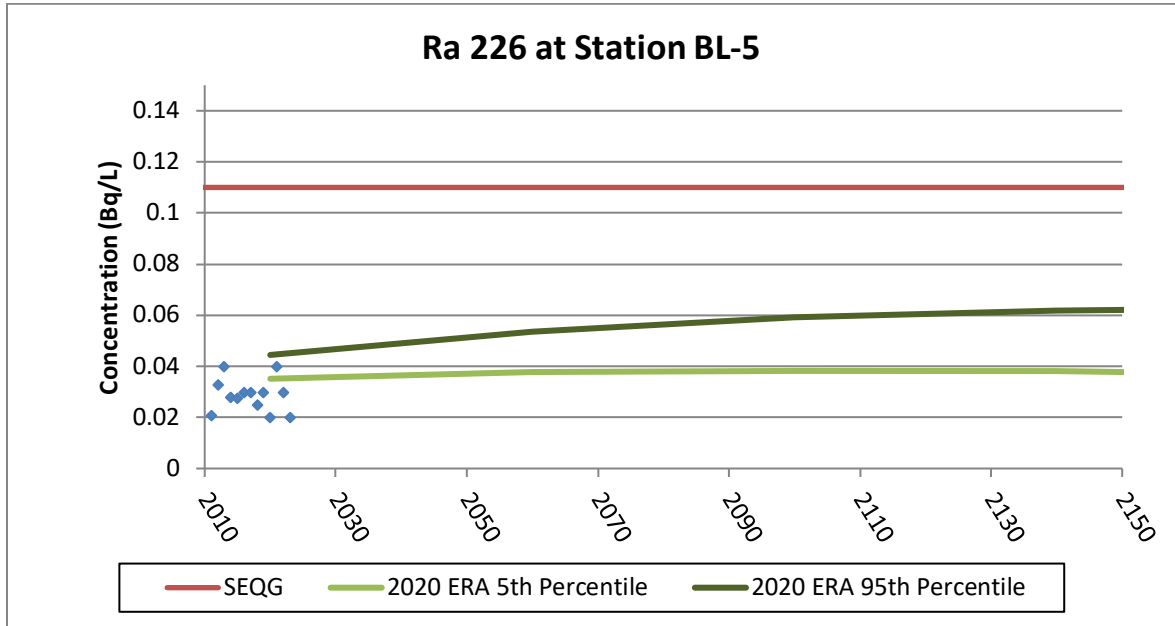


Figure 4.9-1: Ra-226 Expected Natural Recovery at BL-5

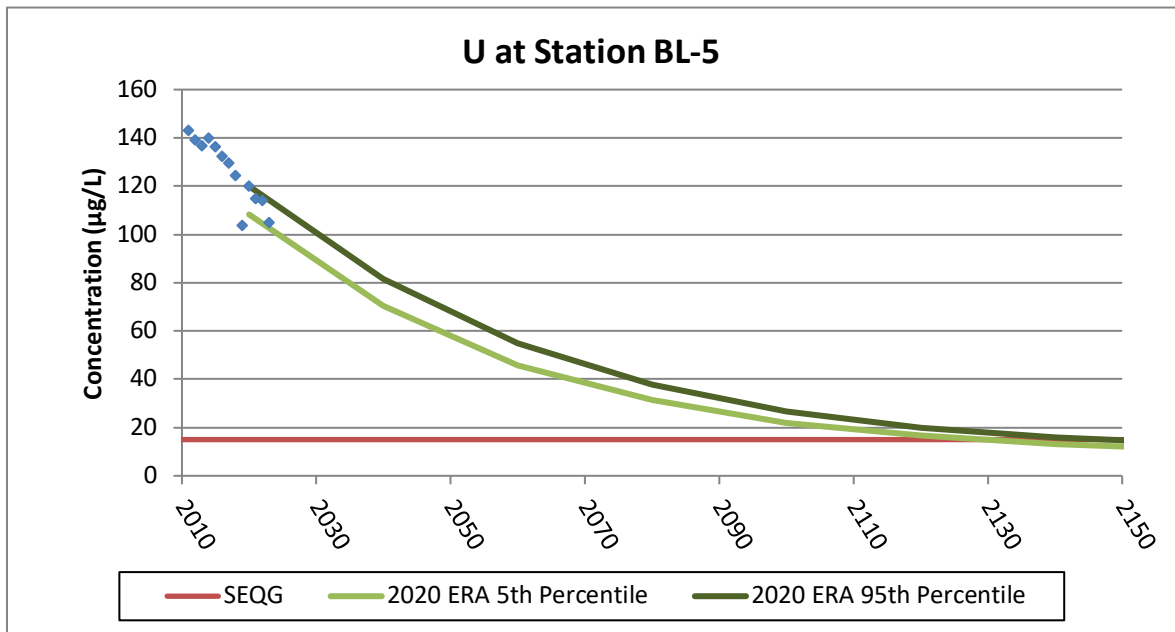


Figure 4.9-2: U Expected Natural Recovery at BL-5

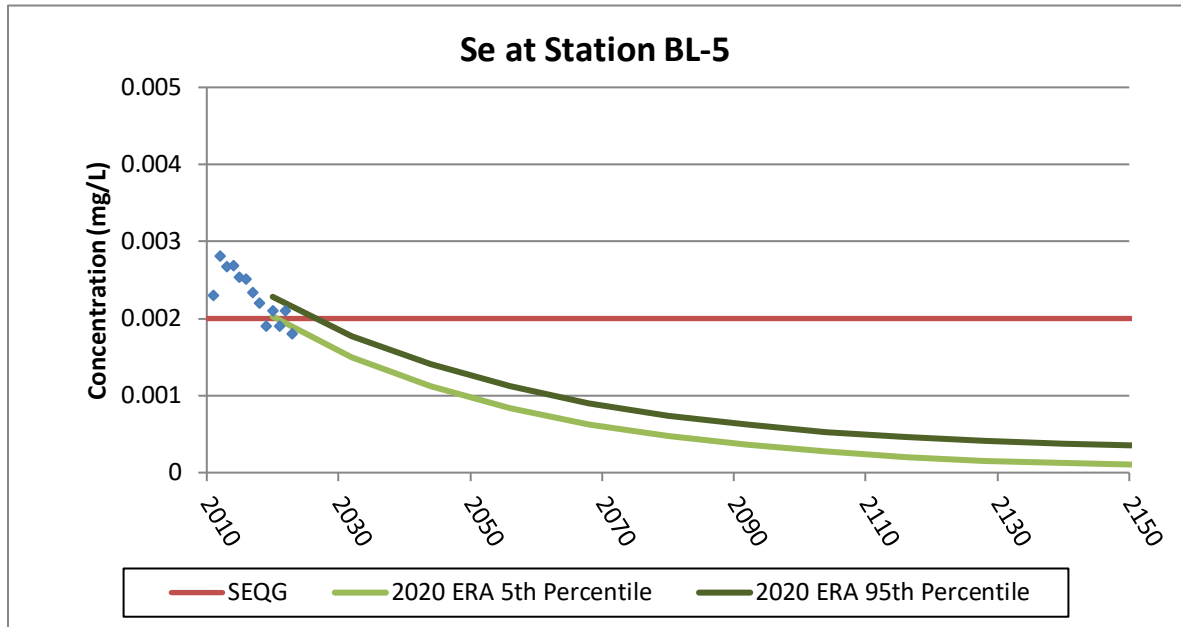


Figure 4.9-3: Se Expected Natural Recovery at BL-5

4.9 Monitoring Plan for the IC Program

Following the completion of decommissioning activities in 1985, regular monitoring and minor maintenance activities have been conducted on the properties to ensure that the site is recovering as expected. Where additional targeted remediation could be completed to improve local conditions, those options were implemented and monitored to evaluate their effectiveness.

Once the decommissioned properties are transferred to the IC Program, SkMER will be responsible for continuing with routine monitoring and maintenance activities to ensure the performance objectives continue to be met. As part of the monitoring and maintenance program, water samples will continue to be collected and compared to model predictions. Fish samples will be collected to allow the SHA to update the fish consumption guideline, as required. In response to input received through engagement with community members and rights holders, a fish monitoring program was completed in Beaverlodge, Martin and Cinch Lakes in 2023 to act as a baseline for future comparisons of fish data. Physical inspections of disturbed areas will continue following a detailed inspection checklist and field guide to ensure all relevant aspects of the former sites are inspected and reported consistently.

CEI will provide the required funds to the Province of Saskatchewan to meet the Monitoring and Maintenance Fund (MMF) and Unforeseen Events Fund (UFE) requirements. As the 27 decommissioned properties that are the subject of this request are the final set of properties to be transferred to the IC Program, the funding requirements will also consider provincial engagement activities, the costs associated with on-site and downstream water and fish monitoring, and the general monitoring and maintenance of the 43 properties already released from CNSC licensing.

4.9.1 Long-Term Monitoring Program

Drawing on over 40 years of monitoring completed in the region, as well as knowledge provided by Indigenous and community members and other interested parties, a Long-term Monitoring Program (LTMP) was developed and provided to SkMER as the proposed environmental monitoring component (water and fish) for implementation when all decommissioned Beaverlodge properties have been accepted into the IC Program.

A technical evaluation was completed by a third-party expert to support the development of a LTMP to monitor long-term trends in surface water quality and fish chemistry. The objectives of the evaluation were to define monitoring that would confirm long-term water trends continue to recover as expected and provide information to the SHA to support the ongoing maintenance and eventual removal of the healthy fish consumption guideline and drinking water advisories. Through this process, the SHA was engaged to ensure the LTMP would provide the information necessary to support those decisions. The CNSC, SkMOE and SkMER accepted the technical evaluation as satisfactory to monitoring the long-term water quality trends and fish data.

In addition to the technical evaluation, this monitoring plan was informed by engagement activities conducted to obtain knowledge from members of rights-bearing First Nation and Métis communities in the Athabasca Basin, residents and/or former residents of Uranium City, northern stakeholder organizations, and provincial and federal regulatory agencies, on what they view as a reasonable long-term monitoring program based on their personal experience with these areas and the IC Program.

An in-person workshop was held in June 2023 to exchange information and to invite feedback on the specific aspects of the program. Results varied, with participants suggesting sample collection frequencies ranging from seasonally to every few years, for both water and fish. Some participants suggested that monitoring frequencies should be adjusted depending on the results. Waterbodies of interest included some relevant to the decommissioned Beaverlodge properties (Ace Lake, Beaverlodge Lake, Martin Lake, Crackingstone River, Lake Athabasca), as well as some waterbodies not impacted by the former Beaverlodge properties (Bushell Bay, Donaldson Lake, Milliken Lake, Lake Athabasca, and Nero Lake).

Additional engagement sessions were held with representatives from the MN-S and ACFN that were unable to attend the June 2023 workshop. Feedback from these meetings aligned with the suggested monitoring frequency and locations noted during the June 2023 Workshop.

Following the workshop and subsequent engagement sessions, a draft of the LTMP that considered both the technical evaluation as well as the feedback from engagement activities was presented in Uranium City in the September 2023 regulatory update.

A summary of how the proposed frequency of monitoring through the technical evaluation was modified following community engagement and incorporated into the LTMP is provided in Table 4-1.

Table 4-1: Technical evaluation and community engagement summary.

Program Component	Technical Evaluation	Community Engagement	LTMP
Water	Every 5 years	Seasonal to every 5 years	Every 3 years, initially
Fish	Every 20 years	Seasonal to every 3 years	Every 10 Years
		Complete baseline program	Completed in 2023

The LTMP provided to SkMER incorporated both the technical evaluation and knowledge received from rights-holders and other stakeholders and consists of two components: surface water and fish chemistry monitoring.

Surface water will be monitored as part of the LTMP which describes the locations and frequencies of water monitoring to be conducted in the IC Program. The objective of the surface water monitoring component of the LTMP is to confirm the trends in water quality demonstrate that natural recovery is continuing as expected, consistent with predictions made in the 2020 ERA.

The surface water monitoring program follows a graduated approach, with the potential for reduced monitoring frequency if recovery is occurring as expected. Water monitoring is proposed every 3 years initially, with the potential to reduce monitoring to every 5 years if the performance indicators are being met after 15 years. While it is expected that the predictions developed in the 2020 ERA will continue to be met, a framework has been established to facilitate additional sampling or analysis should measured values trend above the established performance indicator upper-bound. Contingency funds will be provided as part of the IC Program’s MMF, which will be sufficient to cover additional costs associated with water quality monitoring, should that be required.

In addition to water quality monitoring, fish chemistry monitoring will be completed to support on-going maintenance and eventual removal of the Healthy Fish Consumption Guideline. Sample locations and frequency are detailed in the LTMP (see **Table 4-2** for a summary) and were informed by previous sampling campaigns completed in the region, as well as stakeholder feedback. Based on that feedback, sampling will take place every 10 years in Beaverlodge, Martin and Cinch Lakes and will be discontinued following removal of the guideline in each location.

Table 4-2: Overall LTMP summary.

Sampling program component and Locations	Objective	Frequency	Comments
Surface Water			
Ace Creek Watershed (AN-5, DB-6, AC-6A, AC-14)	Confirm that the trends in water quality are recovering, consistent with the understanding in the 2020 ERA	Every 3 years initially ²	Opportunity to decrease frequency after 15 years to sampling every 5 years. ² Opportunity to decrease frequency after another 15 years to sampling every 10 years. ²
Fulton Creek Watershed (TL-3, TL-4, TL-7, TL-9) ¹			
Beaverlodge Lake and Downstream (BL-5, ML-1, CS-1, CS-2)			
Fish			
Beaverlodge, Martin, and Cinch Lakes	Support the removal of the healthy fish consumption guideline	Every 10 years	Discontinue after healthy fish consumption guideline removed for Beaverlodge, Martin, and Cinch lakes

¹ Drop upstream Fulton Creek Watershed stations (i.e., TL-3, TL-4, and TL-7) after 15 years if recovering as predicted.

² Program frequency consistent with the surface water program for the Cluff Lake Mine Site for management within the IC Program.

4.9.2 Physical Site Inspections

The Beaverlodge Institutional Control Inspection Field Guide (ICIFG) was developed to provide a template for completing future physical site inspections as part of the IC Program. It provides a description of the relevant areas and a summary of the key aspects of the decommissioned Beaverlodge properties that will require inspection.

The Beaverlodge ICIFG was developed through a process of reviewing an example of a relevant (non-Beaverlodge) inspection plan that has been accepted for use in the IC Program, past Beaverlodge closure reports, commitments from CNSC Beaverlodge Commission Member Documents and Record of Decisions, previous IC inspection reports assessing the former Beaverlodge properties, and current regulatory inspections.

The accepted monitoring frequency put forward in the Beaverlodge ICIFG includes inspections every five years for the next 30 years, decreasing to every 10 years. The monitoring frequency was used to inform funding put forward for future inspections.

4.10 Cost Recovery

Cameco is in good standing with the CNSC with respect to the payment of licensing fees for the Beaverlodge properties.

4.11 Financial Assurance

The financial liabilities associated with the management of the Beaverlodge properties are held by the Government of Canada and managed by CEI, a wholly owned subsidiary of the Canada Development Investment Corporation (CDEV). Both CEI and CDEV report to the federal Minister of Finance. The Ministry of Finance has confirmed via letter to the CNSC that:

Canada Eldor Inc. is an agent of the Crown in right of Canada for all purposes. It follows that any undischarged obligations and liabilities of Canada Eldor Inc. are the obligations and liabilities of the Crown in right of Canada. That will include Canada Eldor Inc.'s obligations and liabilities to decommission the Beaverlodge Site and the expenses associated with possession, management and control of nuclear substances at that site.

The CNSC has acknowledged receipt of the letter and accepted that the information fulfilled the requirements of condition 2.2 of Waste Facility Operating Licence WFOL-W5-2120.0/2007.

The Province of Saskatchewan's *Reclaimed Industrial Sites Act* and its Regulations require provision of a fund sufficient to pay for the long-term monitoring and maintenance of the site. In addition, depending on whether or not any engineered structures or tailings remain on the site, an additional contribution of between 10 - 20% of the monitoring and maintenance amount is made to an Unforeseen Events Fund. The IC Program also requires that a financial assurance in the amount of the maximum potential failure event be carried until such time as the Unforeseen Events Fund builds to a level that the Province of Saskatchewan is comfortable that there is sufficient money in the fund to cover any future unforeseen event.

As properties are transferred to the IC Program, CEI will provide the required funds to the Province of Saskatchewan to meet the Monitoring and Maintenance requirements as well as the Unforeseen Events Fund. As the obligations and liabilities associated have been accepted by the Crown, there is no need for the Crown to maintain a financial assurance for the maximum potential failure event.

4.12 Other Regulatory Approvals

Cameco's objective in managing Beaverlodge has been to protect the health and safety of the public and environment, and to meet the requirements for transfer of the decommissioned properties to the IC Program. The SkMER issued a letter of intent on July 4, 2024 (G. McKellar to R. Snider, copied to Cameco) stating that the prescribed conditions specified within Section 3 of the *Reclaimed Industrial Sites Regulations* are satisfied. SkMOE issued a letter of intent on August 7, 2024 (G. Bihun to M. Webster) stating Cameco has fulfilled their requirements and obligations as described in the approved decommissioning and reclamation plans with the Ministry, and that it is the intent of the Ministry to grant Cameco a release from decommissioning and reclamation requirements in accordance with Section 22 of *The Mineral Industry Environmental Protection Regulations, 1996*. This follows the same process undertaken during previous releases from CNSC licensing, when properties were accepted by SkMER into the IC Program or free released. Once the release is granted by SkMOE, the Beaverlodge Surface Lease Agreement, Property No. 200087 will be cancelled.

5.0 CONCLUSIONS

The decommissioned Beaverlodge site now consists of 27 individual properties and is currently managed in accordance with the Saskatchewan Beaverlodge Surface Lease Agreement (December 2006) and the CNSC issued Waste Facility Operating License WFOL-W5-2120.0/2025.

Given the completed remedial activities and subsequent assessments, the 27 decommissioned properties discussed herein: URA 7, URA 1, BOLGER 1, the Fookes Reservoir Area (GC 3, EXC GC 3, GC 5, GC 1, GORE 1, NW 2, NW 1, LEE 4, GORE 2, LEE 3, EXC LEE 3, LEE 2), the Marie Reservoir Area (EXC ACE 18, EXC ACE 17, ACE 17, ACE 15, EXC ACE 14, GORE, EXC GC 2, GC 4, EXC GC 4) Minewater Reservoir Area (EXC URA 6, ACE 19, URA 6) have been shown to meet the performance objectives, as well as all applicable performance indicators. The properties are suitable for unrestricted public access and residual risks to the public and environment have been assessed and found to be low.

Following their release from CNSC licensing, the 27 properties will join the 43 properties currently in the provincial IC Program managed by the SkMER. The SkMER will manage and oversee the continued monitoring of the properties and areas downstream, following the approach developed through collaboration with Indigenous groups, local land-users, and regulatory agencies. Funding to conduct the continued monitoring and inspections of the properties, as well as Indigenous and stakeholder engagement activities, will be provided by Canada Eldor Inc. to SkMER upon acceptance to the IC Program.

Cameco hereby requests a release of the properties from CNSC licensed activities and revocation of Waste Facility Operating Licence (WFOL-W5-2120.0/2025) issued to Cameco by the CNSC, to allow the properties to be transferred to the IC Program for long-term environmental stewardship by the province of Saskatchewan.

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