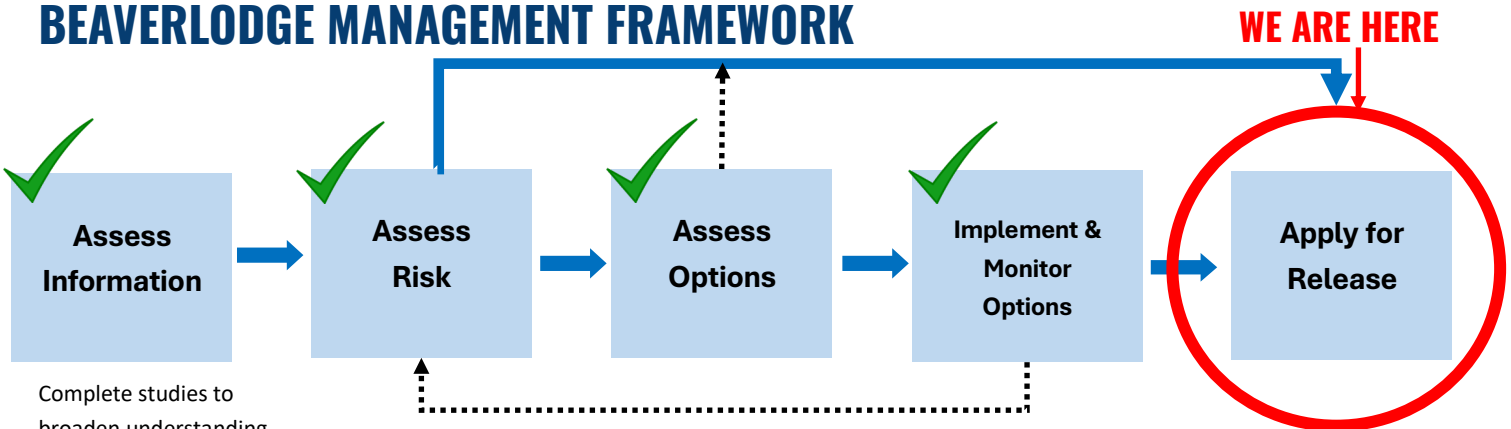
DECOMMISSIONED

BEAVERLODGE PROPERTIES

The decommissioned Beaverlodge uranium mine/mill site and associated properties in the Uranium City area were operated by Eldorado Mining and Refining Limited between 1952 and 1982. From 1982 to 1985 the site was decommissioned and reclaimed to standards approved by federal and provincial regulators. Beaverlodge was the first Canadian uranium mining operation to be formally decommissioned. In 1988, Eldorado merged with the Saskatchewan Mining Development Corporation to form Cameco Corporation. At that time, the management of the properties became the responsibility of Cameco, while the Government of Canada retained financial responsibility. Cameco has since carried out routine environmental monitoring, targeted environmental investigations, maintenance work, community engagement and targeted remediation on the 70 separate decommissioned properties that originally made up the Beaverlodge site. Of the 70 properties, 24 have been transferred into the Saskatchewan Institutional Control (IC) Program, with one property being free-released. We expect a decision from the Canadian Nuclear Safety Commission (CNSC) soon regarding our recent application to release 18 properties. If accepted these properties would be transferred to the IC Program, leaving 27 properties remaining.

BEAVERLODGE MANAGEMENT FRAMEWORK



Complete studies to broaden understanding of property conditions.

Develop a site model to assess potential risk to the environment & people.

Identify & assess potential remedial options that reduce risk, provide a net environmental benefit proportionate to the cost and be technically feasible.

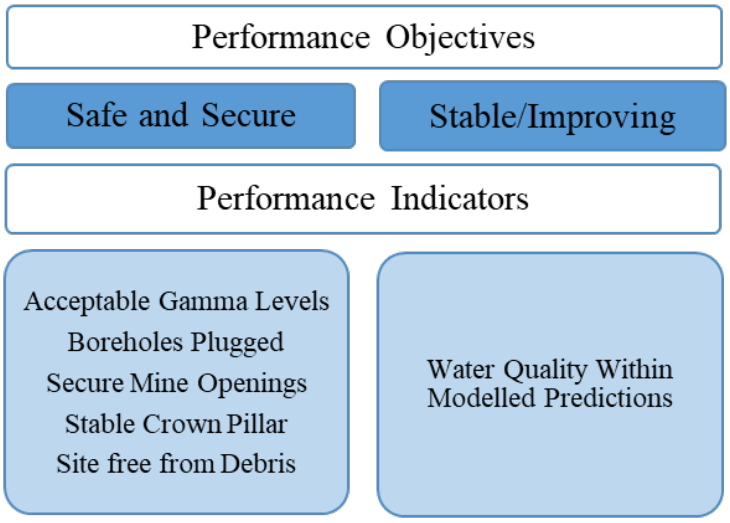
Implement remedial activities identified. Monitor results & compare performance objectives.

Apply to have each property transferred to the IC program or free released.

PERFORMANCE INDICATORS AND OBJECTIVES

Safe – site is safe for unrestricted public access. This objective is to ensure that the long-term safety is maintained.

Secure – must be confident that long-term risks to public health and safety have been assessed by 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.

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.
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/Verna, 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: 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 is stable/ improving.

SASKATCHEWAN INSTITUTIONAL CONTROL (IC) PROGRAM

The Saskatchewan IC Program addresses all aspects of conventional closed mines, as well as the uranium-specific issues of radioactive waste management.

The IC program is run by the Government of Saskatchewan and is intended to provide long-term monitoring and maintenance. A property will not be accepted into the program until remediation activities are completed and the relevant regulatory authorities have issued a release. Properties transferred will continue to support traditional activities such as hunting.

2009

5 Properties transferred to IC

2020

19 Properties transferred to IC, 1 free-released

2022

18 Properties Proposed for transfer to IC

This image shows where a steel cap has been placed to ensure this opening is safe and secure.

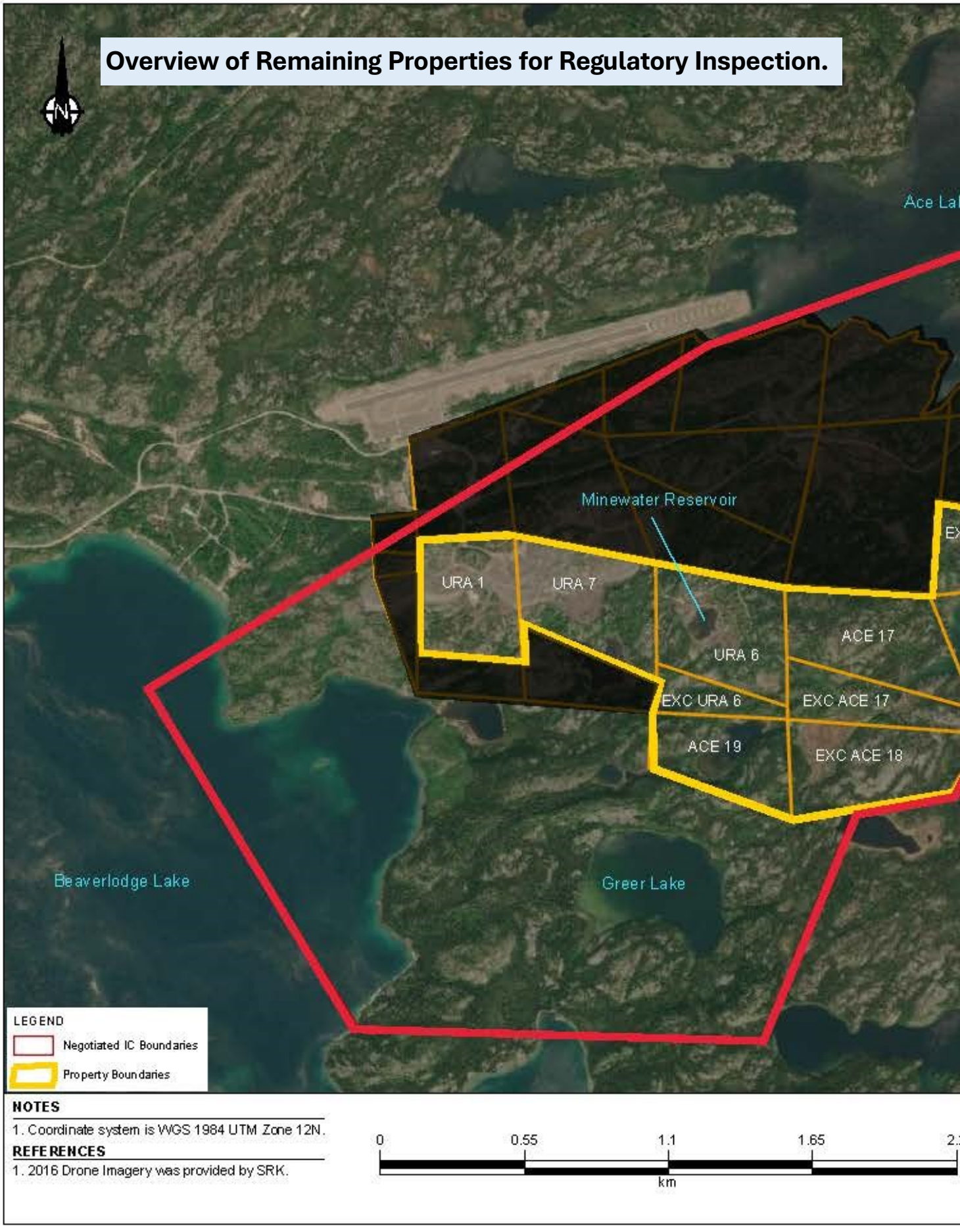
MONITORING UNDER IC

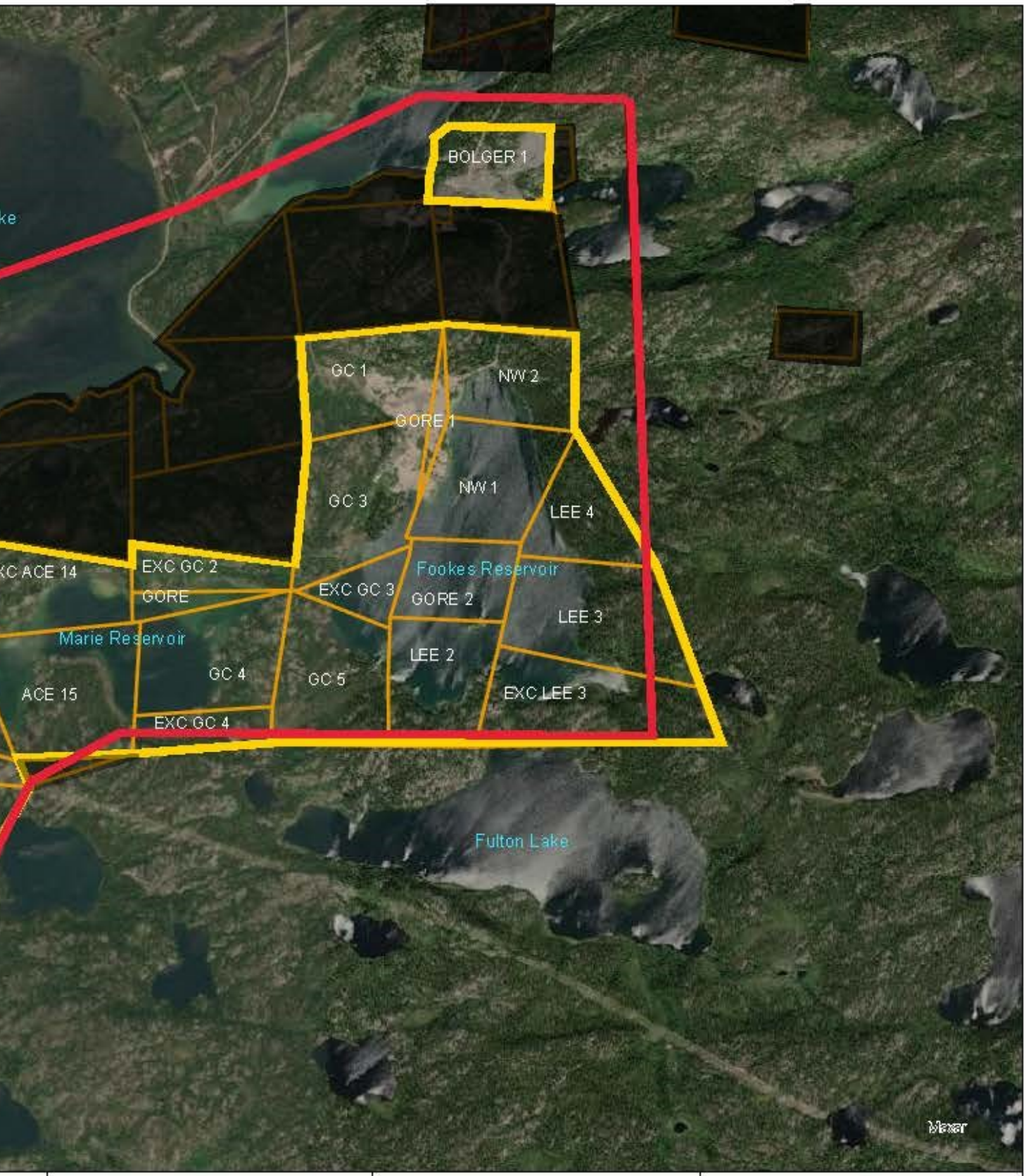
Once in the IC Program the Province of Saskatchewan will ensure long-term monitoring and maintenance of the properties.

Funding is provided up front by the former site holder.

The IC program ensures that these properties will not be forgotten about once they are released from Cameco's license.

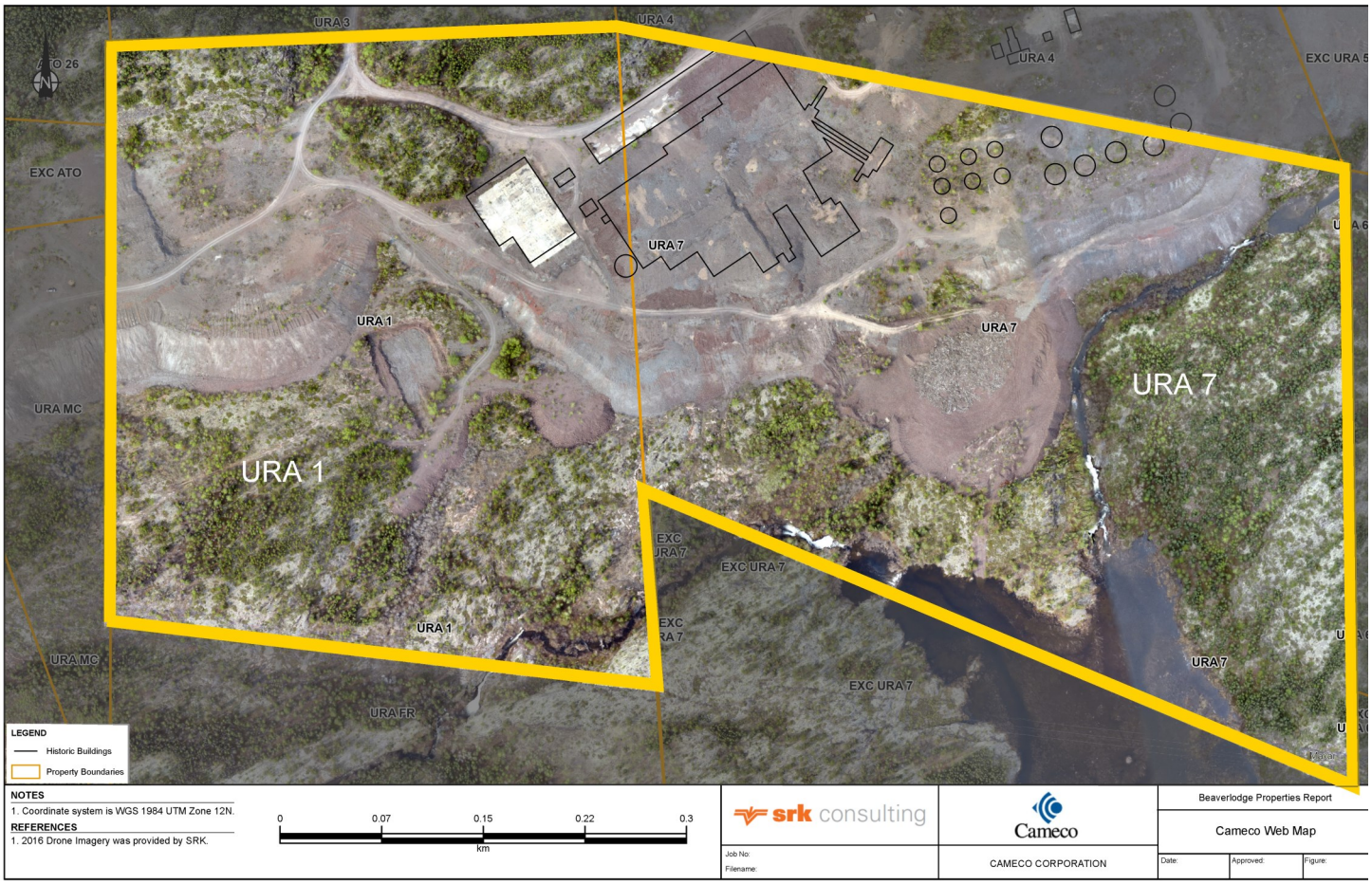
The monitoring will ensure that the properties continue to behave as expected and ensure that they remain safe, secure, and stable/improving.


Overview of Remaining Properties for Regulatory Inspection.
N
Ace La
Minewater Reservoir
URA 1
URA 7
URA 6
ACE 17
EXC URA 6
EXC ACE 17
ACE 19
EXC ACE 18
Beaverlodge Lake
Greer Lake
LEGEND
Negotiated IC Boundaries
Property Boundaries
NOTES
1. Coordinate system is WGS 1984 UTM Zone 12N.
REFERENCES
1. 2016 Drone Imagery was provided by SRK.
0
0.55
1.1
1.65
km



	srk consulting	Cameco	Beaverlodge Properties Report
			Cameco Web Map
	Job No: File name:	CAMECO CORPORATION	Date: / Approved: / Figure:

URA 1 and URA 7 PROPERTIES



URA 1 - What was there?

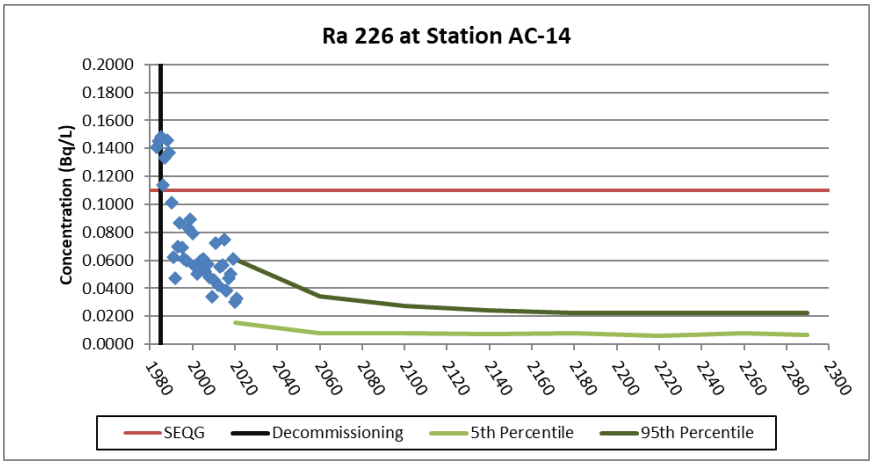
1. Mill annex buildings, warehouse
2. An O_2 plant
3. A small open pit (Lower Fay Pit)
4. Waste rock

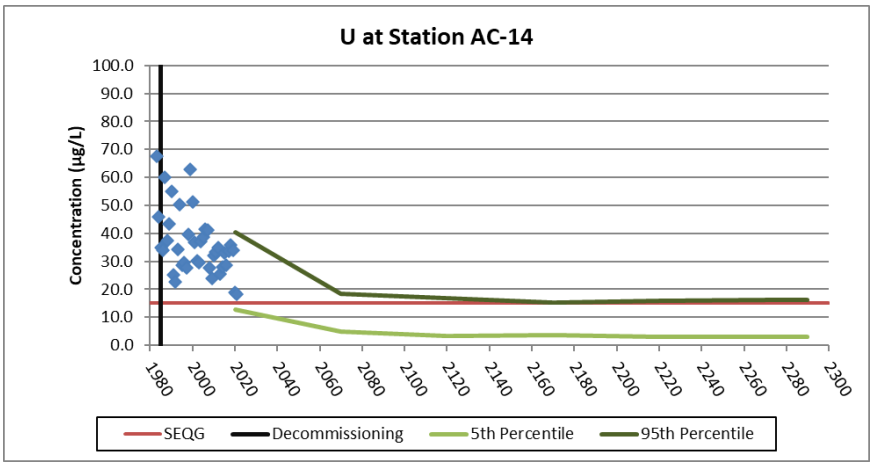
URA 7— What was there?

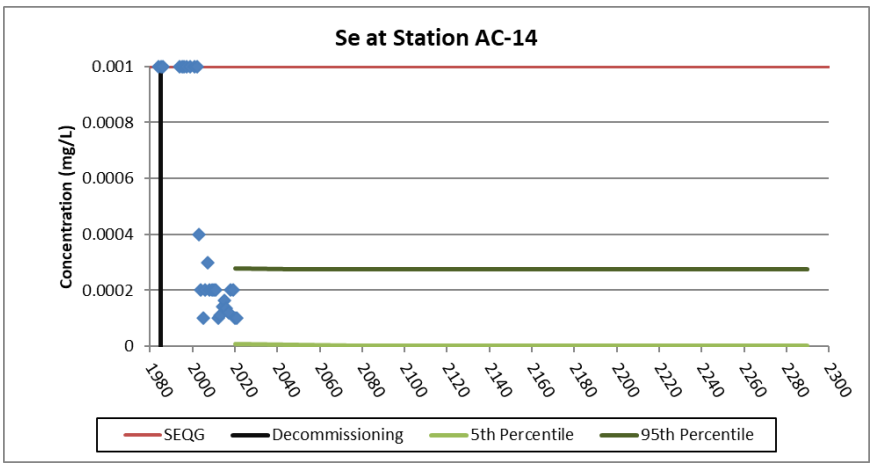
1. Mill facility
2. Sorting plant bin
3. Sorting plant raise
4. CB-1 access raise
5. Waste haulage adit
6. Bulk fuel storage tanks

URA 1 and URA 7 PERFORMANCE INDICATORS

The applicable performance indicators have been met for acceptable gamma levels, boreholes plugged, stable crown pillar, site free from debris, and water quality (see graphs below for predictions) at URA 1. There are no mine openings on URA 1, therefore the stable mine opening performance indicator is not applicable. The applicable performance indicators have also been met at URA 7 for acceptable gamma levels, boreholes plugged, stable mine openings, stable crown pillars, site free from debris, and water quality (same monitoring station is applicable as for URA 1).





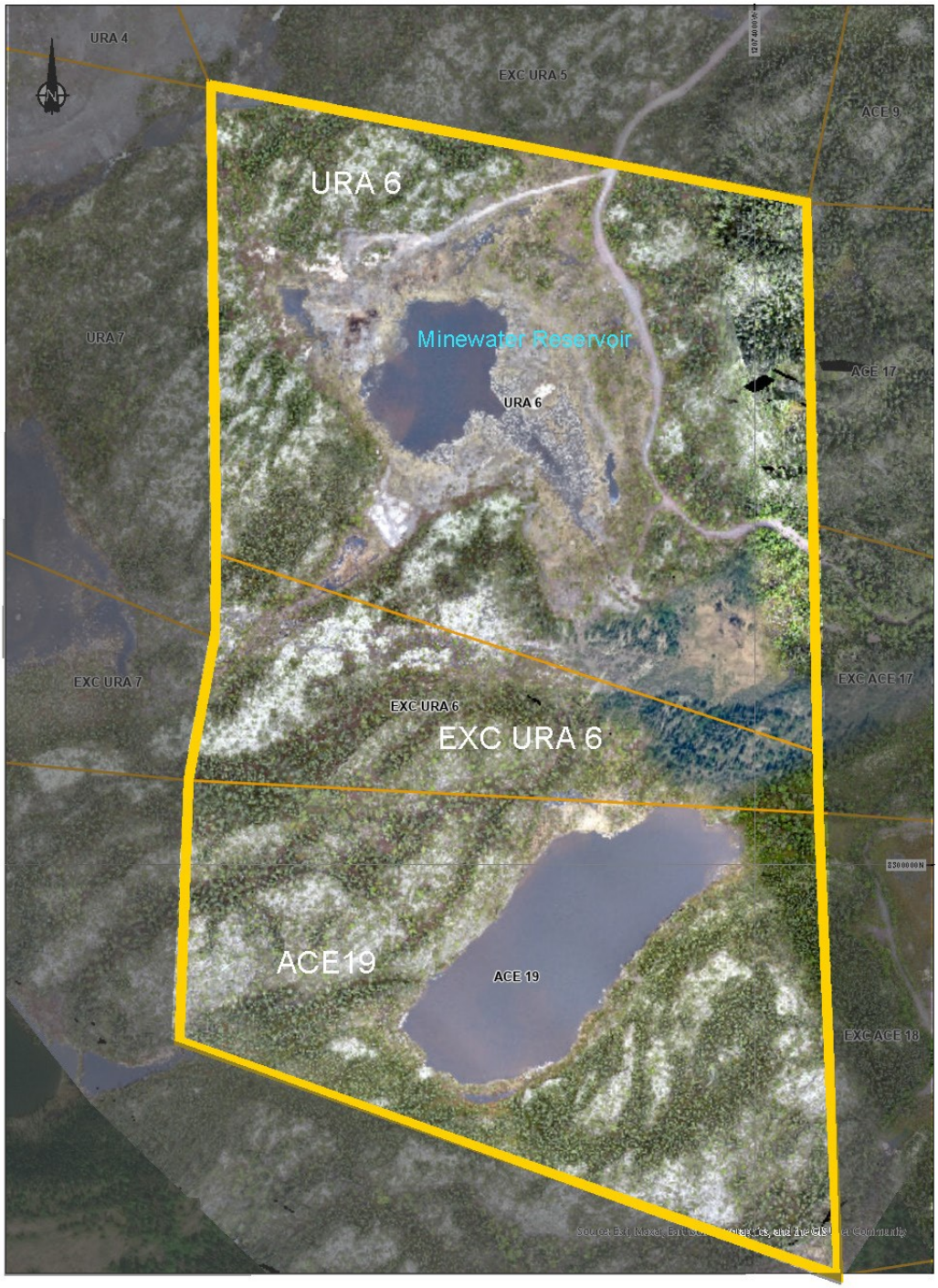


MINEWATER RESERVOIR AREAS

The Minewater Reservoir area consists of three individual properties.

During operation, Minewater Reservoir was used as a tailings disposal location in 1953 and in the 1970s was used for settling of treated mine water.

At decommissioning a channel was blasted in bedrock to allow drainage from Minewater Reservoir to flow toward the tailings management area (TMA). The settled precipitate and tailings were excavated from Minewater Reservoir and placed into the underground mine.



LEGEND

Property Boundaries

0 0.09 0.18 0.27 0.36

km

NOTES

1. Coordinate system is WGS 1984 UTM Zone 12N.

REFERENCES

1. 2016 Drone Imagery was provided by SRK.

srk consulting

Job No:

Filename:

Cameco

CAMECO CORPORATION

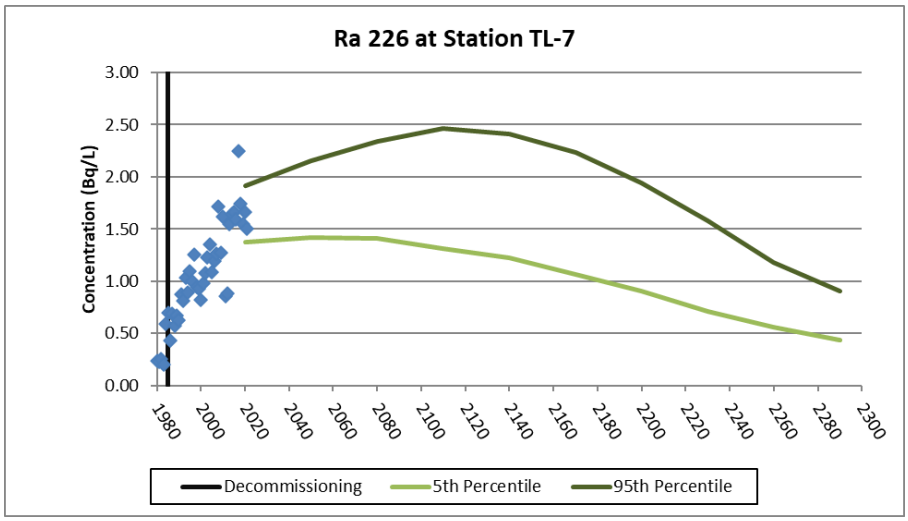
Beaverlodge Properties Report

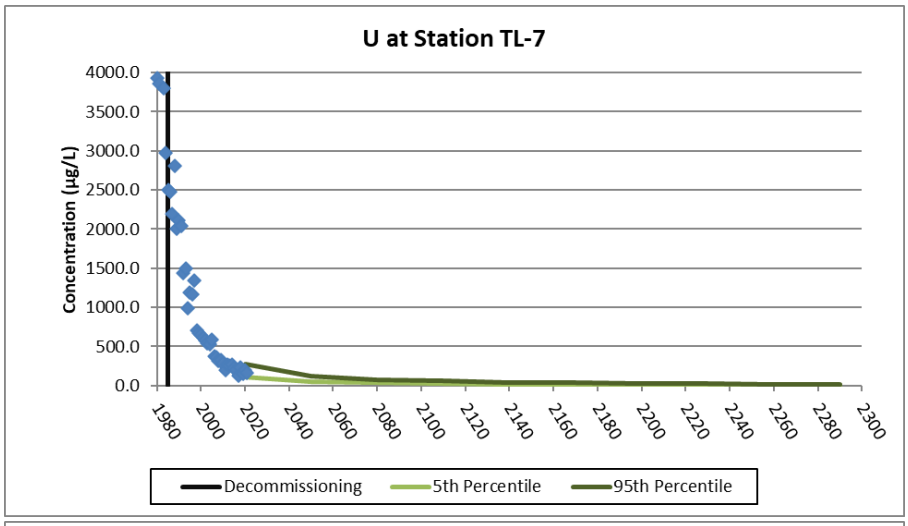
Cameco Web Map

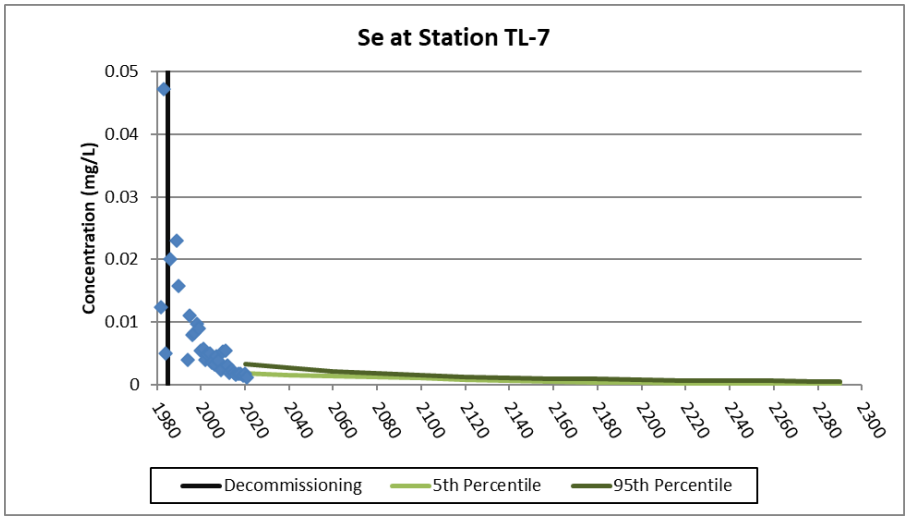
Date: Approved: Figure:

MINEWATER RESERVOIR PERFORMANCE INDICATORS

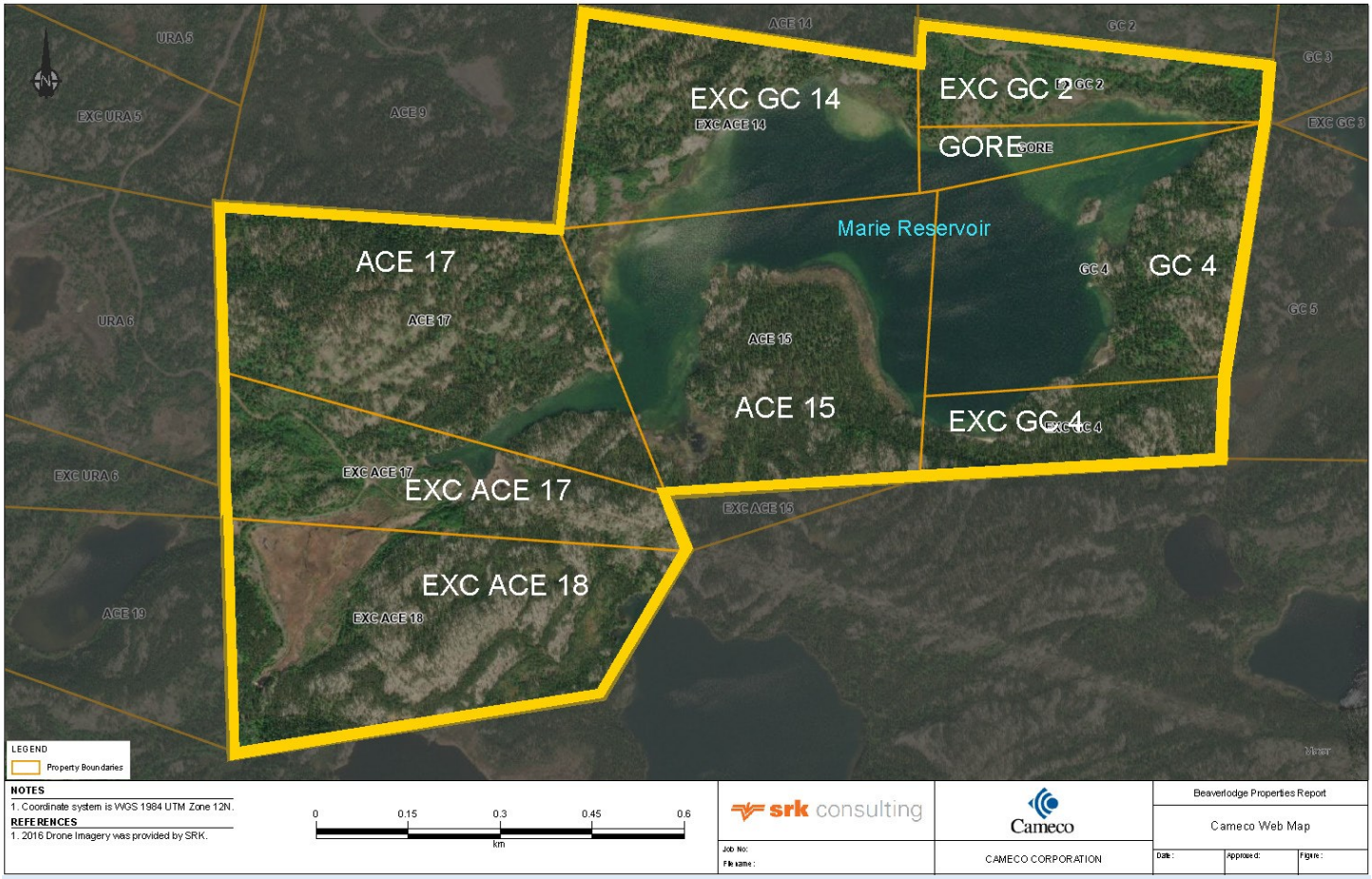
The applicable performance indicators have been met for acceptable gamma levels, site free from debris, and water quality (see graphs below for predictions) associated with Minewater Reservoir. There are no boreholes, mine openings, or crown pillars, therefore those performance indicators are not applicable.







MARIE RESERVOIR AREAS

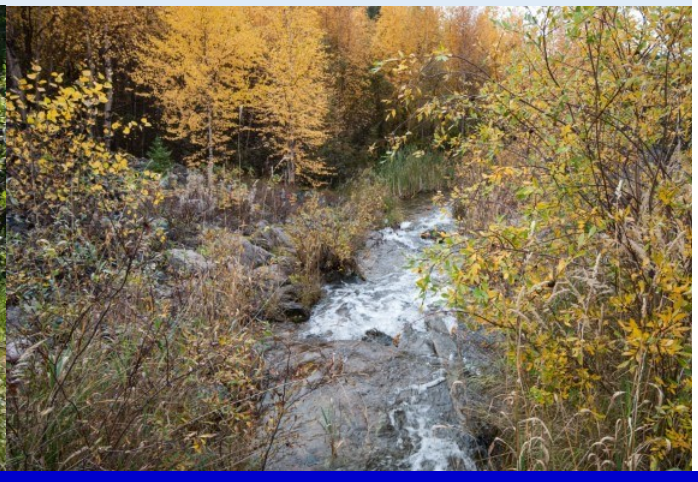


The Marie Reservoir area consists of 9 individual properties.

From 1954 to 1957 tailings were deposited in Marie Reservoir.

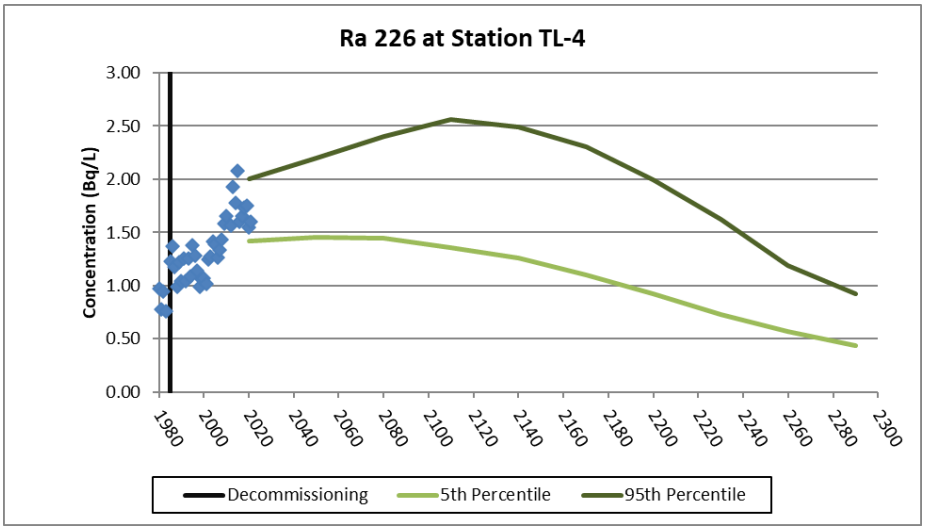
In 1976, there was a water treatment plant constructed at the outlet of Marie Reservoir.

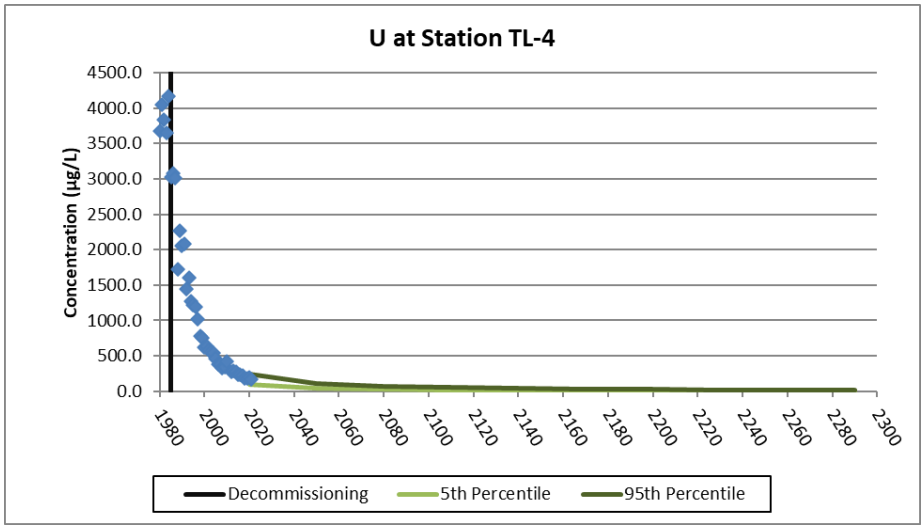
During decommissioning, tailings near the surface were moved to a deeper part of the reservoir and the tailings delta was covered with waste rock. Inspections confirm the cover continues to perform as expected.

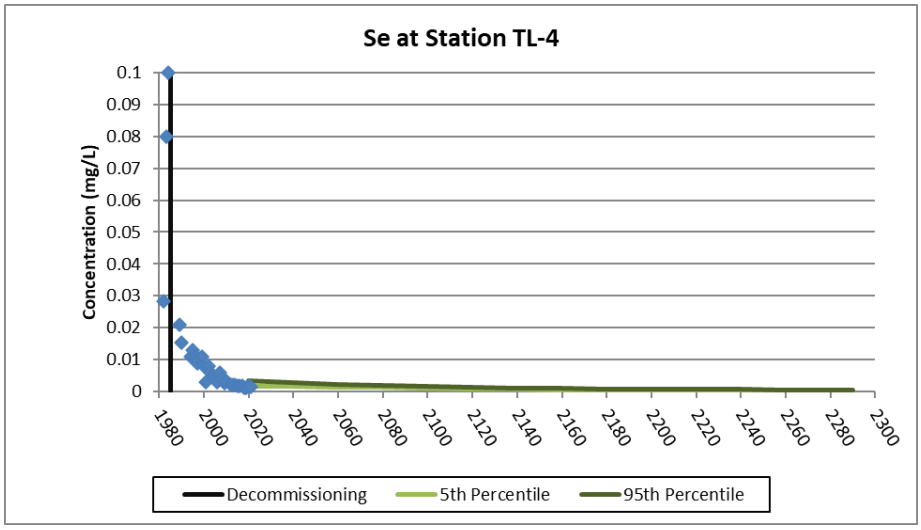


MARIE RESERVOIR PERFORMANCE INDICATORS

The applicable performance indicators have been met for acceptable gamma levels, site free from debris, and water quality (see graphs below for predictions) at Marie Reservoir. There are no boreholes, mine openings, or crown pillars, therefore those performance indicators are not applicable.







FOOKES RESERVOIR AREA

The Fookes Reservoir Area consists of 12 individual properties.

The tailings line was moved to Fookes Delta in 1957.

Reclamation included covering of the exposed tailings delta with 3 feet of waste rock.

In 2005 and 2007, much of the delta was covered with sand.

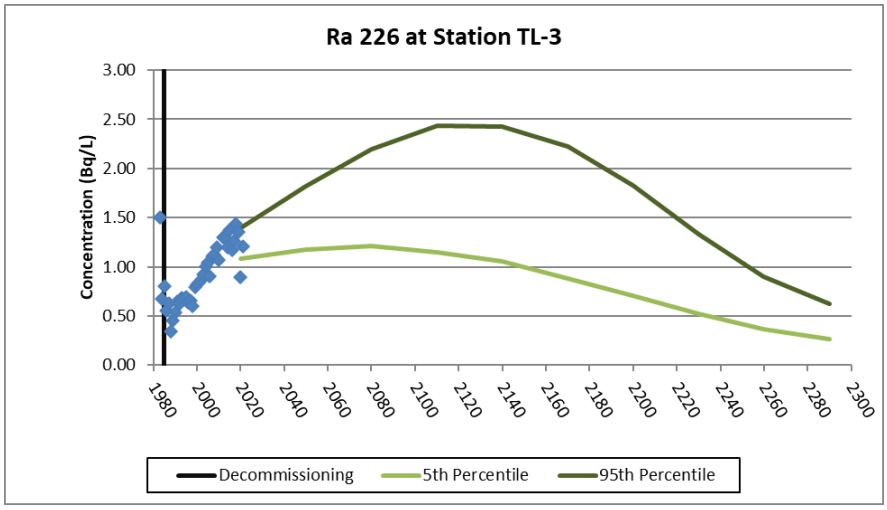
In 2021, there was a study conducted assessing the safety of consuming moose from the Fookes Reservoir Area. It was found that use of the area by moose is fairly low and that the moose grazing or utilizing the delta area are safe for consumption.

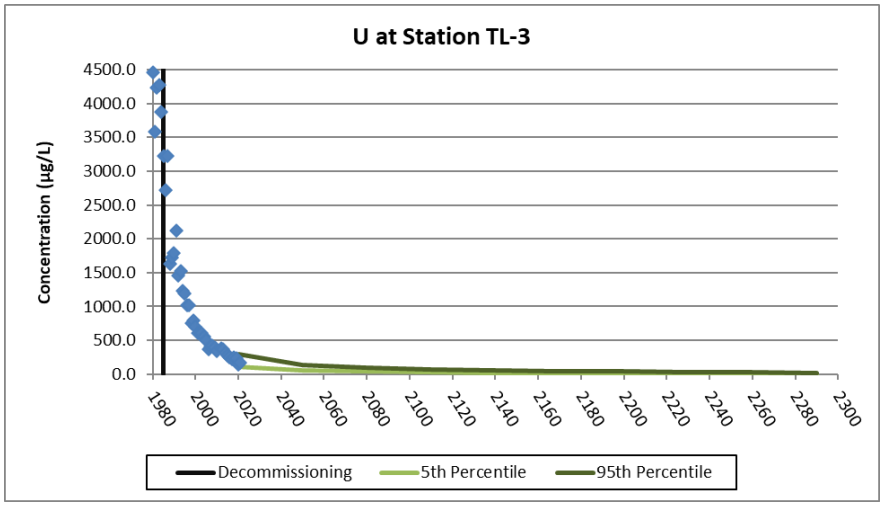
FOOKES RESERVOIR AREA

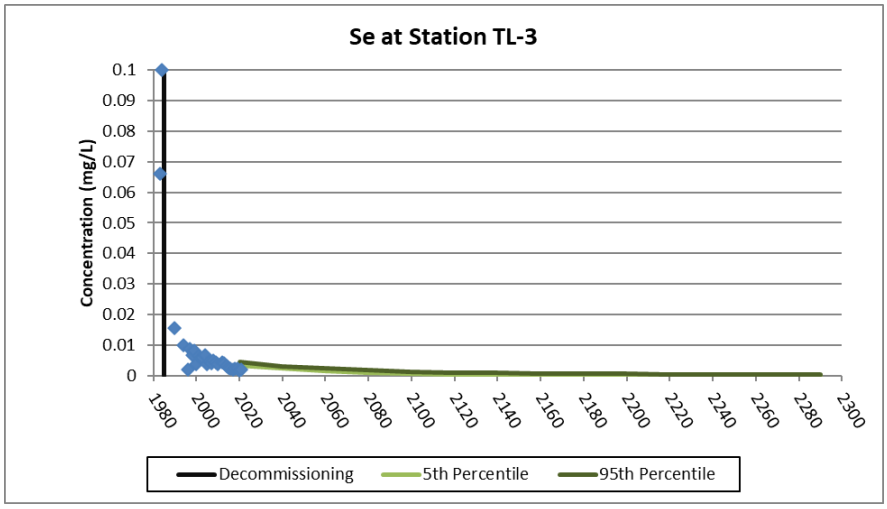
Reclamation of the Fookes Reservoir Area involved removal of the operational dam and it was replaced with an outlet structure that maintains the water level in the basin to within 1 m of its natural outlet level.

FOOKES RESERVOIR PERFORMANCE INDICATORS

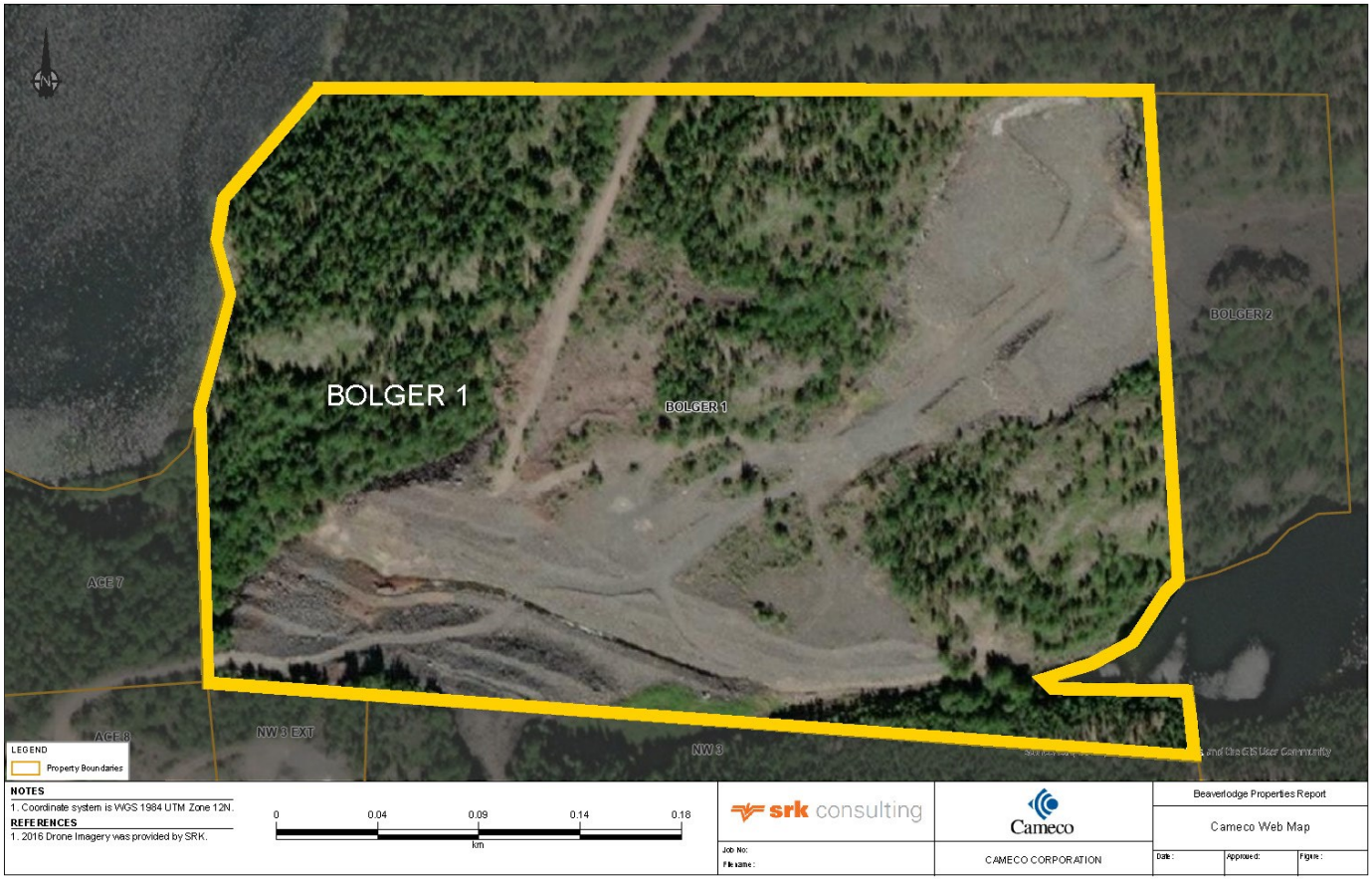
The applicable performance indicators have been met for acceptable gamma levels, site free from debris, and water quality (see graphs below predictions) at Fookes Reservoir. There are no boreholes, mine openings, or crown pillars, therefore those performance indicators are not applicable.







BOLGER 1 PROPERTY



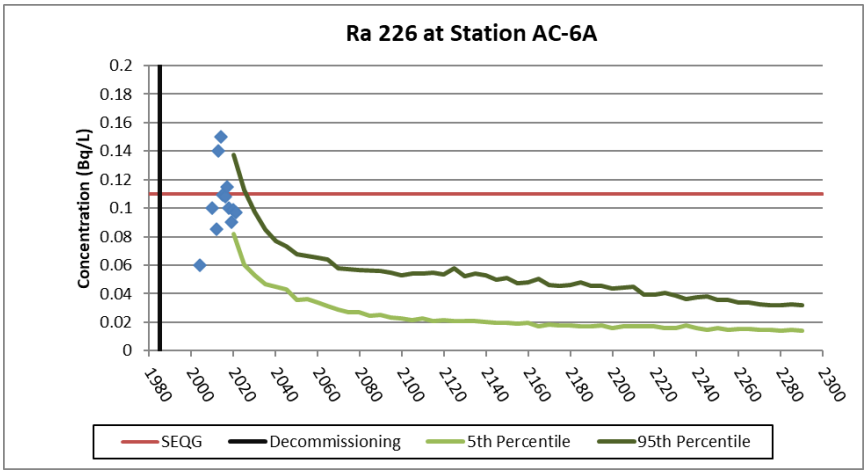
Bolger Pit was operated intermittently between 1958 and 1980 and was the largest pit at the Eldorado Beaverlodge site. Pit stability assessment was completed in Bolger Pit and found the pit walls to be stable.

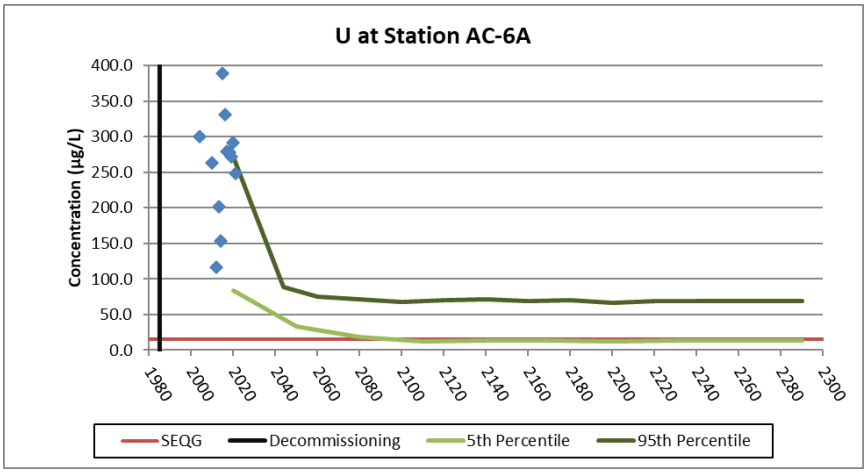
Zora Creek Reconstruction:

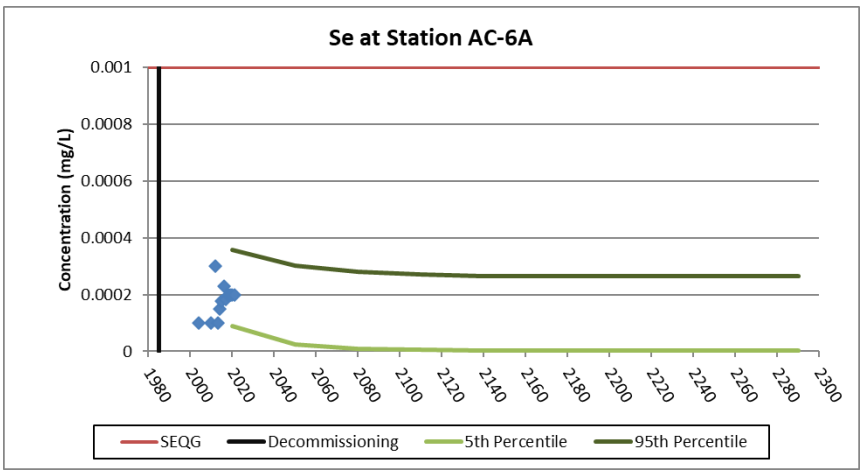
A channel was constructed in the summer of 2015, which allows water to flow between Zora and Verna lakes. It minimizes waste rock contact with water and results for water quality have improved. Water quality is now meeting predicted levels. The material excavated from the Zora stream reconstruction project was placed into Bolger Pit reducing the height of the pit walls.

BOLGER 1 PERFORMANCE INDICATORS

The applicable performance indicators have been met for acceptable gamma levels, boreholes plugged, site free from debris, stable crown pillar, and water quality related to the Bolger 1 property (measured at the outlet of Verna Lake, station AC-6A) provided in the graphs below. There are no mine openings therefore that performance indicators are not applicable. The annual average water quality measured at the ZOR-02 monitoring station, immediately downstream of the stream reconstruction project, is showing continued improvement.







COUNTRY FOODS/LAND USE STUDY (2011/2012)

The country foods study was conducted by a third party First Nations owned company Canada North Environmental Services Ltd. (CanNorth) and involved surveying Uranium City and Camsell Portage residents, as well as analyzing food samples submitted by local stakeholders. Residents were asked what country foods they consumed, how much, and where they harvested from.

All samples were either collected or submitted directly by, or with the assistance of, Uranium City or Camsell Portage residents during their traditional hunting and gathering activities.

Types of samples collected were: blueberry, bog cranberry, raspberry, Labrador tea, snowshoe hare, spruce grouse, moose (and organs), and fish (northern pike and lake whitefish).

The samples were submitted by CanNorth to the Saskatchewan Research Council (SRC) for analysis of the following parameters:

Parameters	
Metals	Aluminum, Barium, Boron, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury (fish only), Molybdenum, Nickel, Selenium, Silver, Thallium, Tin, Titanium, Uranium, and Zinc
Radionuclides	Lead-210, Polonium-210, Thorium-230, Radium-226
Trace Elements	Antimony, Arsenic, Beryllium, Cobalt, Strontium, Vanadium

FINDINGS

Results found that traditional harvesting of country foods and consuming those foods **does not present health risks** to Uranium City and Camsell Portage residents.

EASTERN ATHABASCA MONITORING PROGRAM (EARMP)

EARMP monitors potential cumulative effects downstream of uranium mining and milling operations in northern Saskatchewan. EARMP was developed to establish baseline conditions and facilitate the examination of spatial and temporal changes long-term.

The program focuses on a community program and a technical program:

1. The community program was developed to address potential concerns about the safety of traditional foods that community members consume.
2. The technical program collects water, sediment, fish (flesh and bone), and benthic invertebrates. This information is used to monitor for changes in water quality, sediment quantity, benthic invertebrate community, and fish chemistry over the long-term.

EARMP regularly collects samples from Uranium City and Camsell Portage for analysis. Results can be found here: www.earmp.ca/reports. Past results have found that food is safe to consume and water is safe to drink.

COMMUNITY BASED ENVIRONMENTAL MONITORING PROGRAM (CBEMP)

The CBEMP aims to be a co-learning process that promotes shared knowledge, skills, and engagement with the community. It provides an opportunity for community members to become involved in the program by participating in interviews and sampling traditional foods that they consume for testing. The CBEMP is founded on community members' shared knowledge and engagement. Past CBEMP studies in Fond du Lac, Black Lake and Stony Rapids, and Hatchet Lake and Wollaston Post have found that the food is safe to consume and the water is safe to drink.

The 2021/2022 CBEMP was conducted in Uranium City and Camsell Portage.

Report is expected to be complete in 2022, with a community meeting to follow.

SHORT-TERM LICENCE RENEWAL

Based on discussions with CNSC Staff, renewing the current licence by 24 months will allow time for the regulatory processes, public engagement, and document preparation to support the final release and transfer of the remaining Beaverlodge properties to the Institutional Control Program.

COMMUNITY ENGAGEMENT

Each year, a public meeting and site tour is held to discuss site activities. This meeting provides an opportunity for Cameco to engage local residents and other interested groups regarding the plan and schedule for transferring properties to the Province of Saskatchewan's Institutional Control program.

It also allows residents the opportunity to provide feedback to Cameco and regulators regarding potential concerns. Additionally, Cameco aims to employ local contractors, resulting in many of the Uranium City community members having direct experience participating in site activities.

ONGOING ACTIVITIES

- Fact sheets
- Posters
- Presentations
- Public meetings
- Site tours
- Virtual tours available at **www.beaverlodgesites.com**
- Documentation and submissions to facilitate IC transfer

THANK YOU!

For additional resources please visit www.beaverlodgesites.com or contact Kristin Cuddington with Cameco at 306-956-8149 or kristin_cuddington@cameco.com.