



Supplementary Information

Renseignements supplémentaires

Presentation from Cameco Corporation

Présentation de Cameco Corporation

In the Matter of the

À l'égard de

Cameco Corporation, Beaverlodge Project

Cameco Corporation, Projet Beaverlodge

**Application to amend its licence to allow
release of 18 Beaverlodge Project
properties from CNSC licensing**

**Demande de modification du permis de
Cameco visant à retirer 18 propriétés du
projet Beaverlodge du contrôle de la CCSN**

Commission Public Hearing

Audience publique de la Commission

March 24, 2022

24 mars 2022



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March 24, 2022
CNSC Hearing Presentation

Decommissioned Beaverlodge
Properties Licence Amendment



Introduction

- **Cameco has been committed and capable manager since 1988**
- **Transition phase monitoring and maintenance activities**
- **Beaverlodge Management Framework**
 - Ongoing stakeholder engagement
 - Path Forward Plan
 - Ensure continued safety, security and stability
 - Protect the health and safety of the public and environment
 - Prepare properties for transfer into provincial Institutional Control program

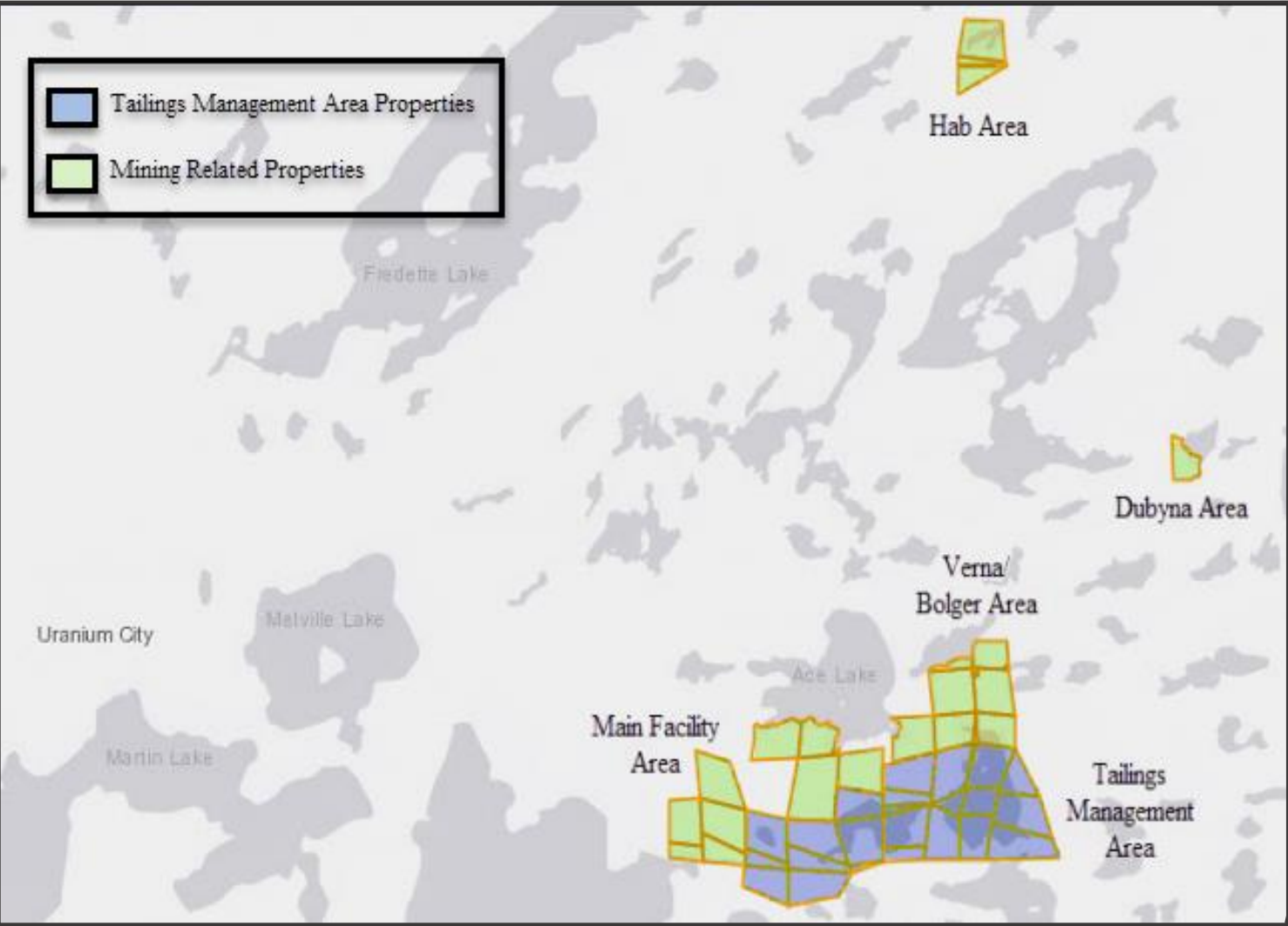


Presentation Overview

1. Location and History
2. Beaverlodge Management Framework
3. Indigenous and Community Engagement
4. Risk Assessments
5. Application Summary
6. Performance Indicators and Evaluation



Beaverlodge Location



Beaverlodge History



Operating

- 1952 to 1982
- Operated by Eldorado
- Main site + satellite mines

Transition Phase Monitoring

- 1985 to present
- Cameco since 1988
- Routine monitoring and inspections



Decommissioning and Reclamation

- Implemented 1982 – 1985 by Eldorado
- Decommissioning plan approved by regulators of the day
- Safe and secure with expectation of natural recovery

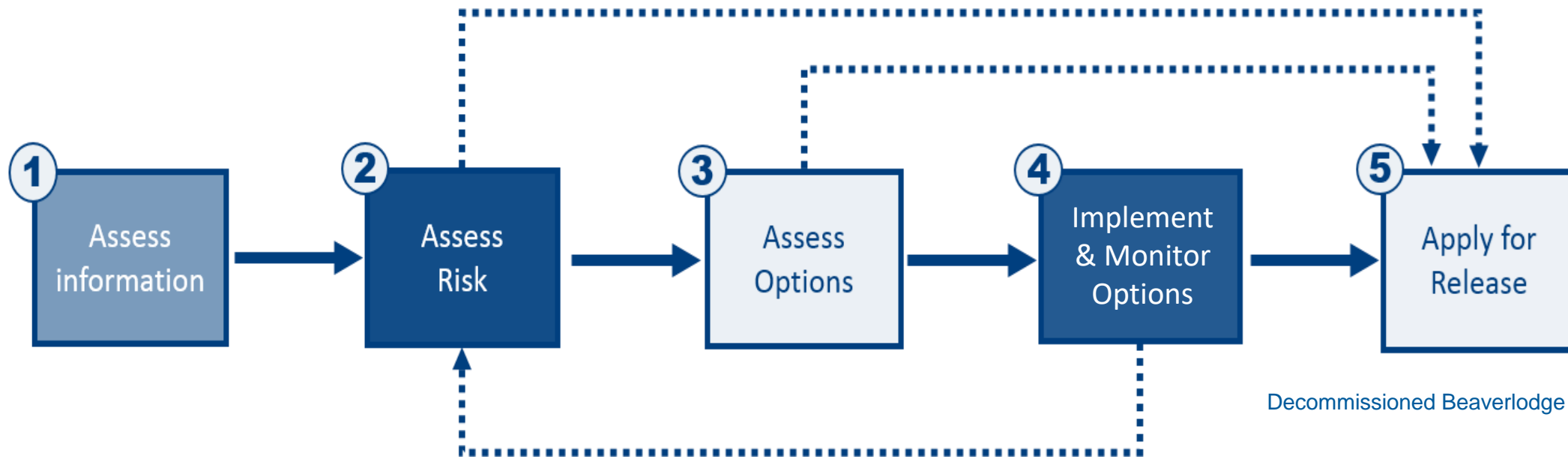
To Institutional Control

- 2007 implemented provincial IC program
- Beaverlodge Management Framework
- The Path Forward Plan
- Site remediation and stakeholder engagement
- 5 properties transferred in 2009; 19 properties transferred in 2020

Beaverlodge Management Framework



- Developed by Cameco with input from regulatory agencies and local and regional interested groups
- **Step by step process** for how the decommissioned properties would be assessed and the final remedial options would be **selected, monitored and evaluated**
- Ensures residual risks are systematically evaluated
- Facilitate transfer to Institutional Control



Quantitative Site Model (QSM)

1. Assess residual risks and natural recovery rates
2. Assess remedial options
3. Establish the performance criteria



Remedial Options Workshops

- Held in 2009 and 2012 with local and regional interested groups
- Presented various remedial options and their outcomes using the **QSM**
- Uranium City residents, elected leadership, Métis Nation-Saskatchewan Regional and Local 50 President, Northern Saskatchewan Environmental Quality Committee, Athabasca Working Group, regulators, and Cameco

Beaverlodge Management Framework



Path Forward Report

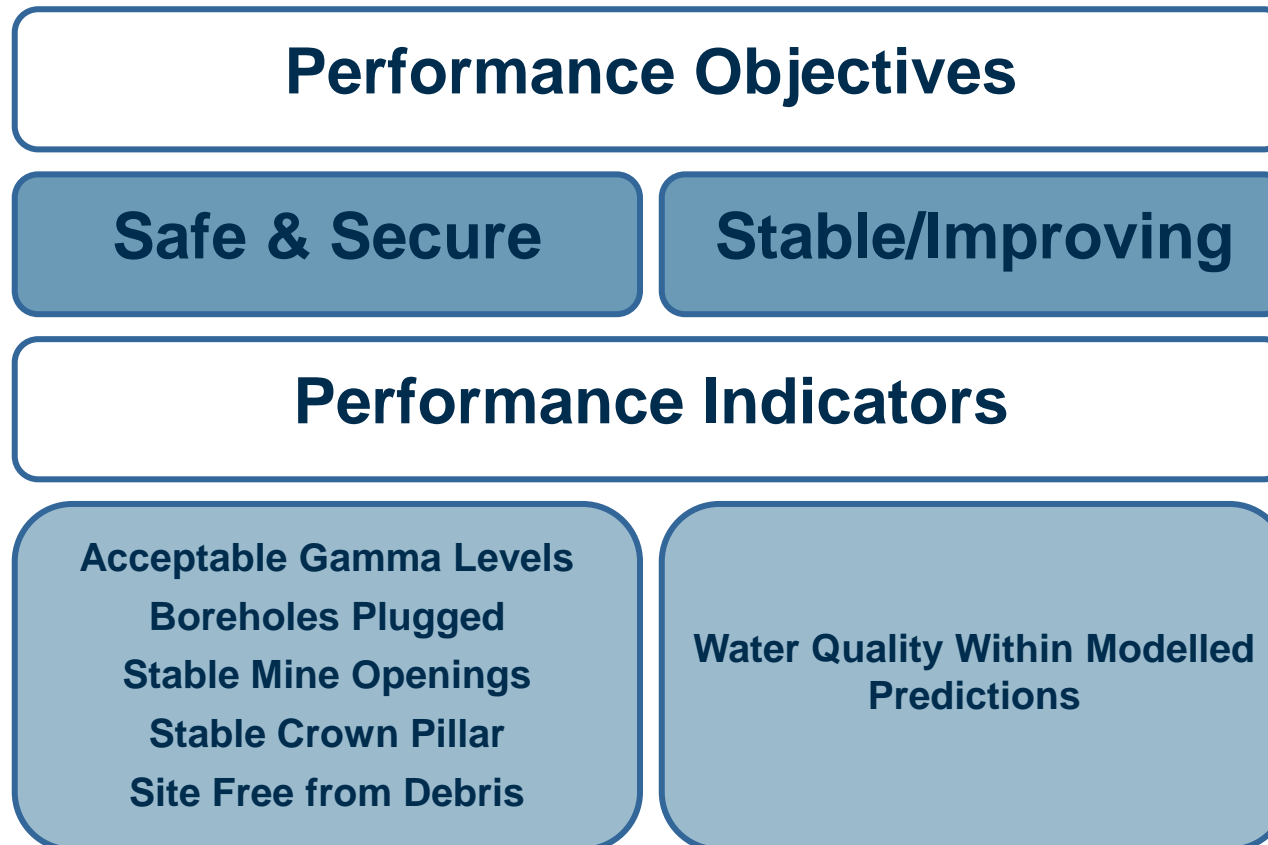
- Based on Management Framework, QSM, and remedial options workshops
- In 2013, the Commission accepted the Path Forward and granted Cameco a 10-year licence to implement the selected remedial options
 - Ensure the continued protection of people and environment
 - Prepare properties for transfer into Institutional Control program



Beaverlodge Management Framework



- Included **Performance Criteria (objectives and indicators)** to evaluate success of remediation prior to transfer of the properties into Institutional Control



Beaverlodge Management Framework



- 5 properties transferred to IC program
- Small properties with minimal disturbance



- CNSC hearing Oct. 2019 regarding release from CNSC licence
- 19 properties transferred to IC program; 1 property free-released



- 18 properties proposed for release from CNSC licensing
- Received letter of intent from SkMOE and SkMER



- Remaining 27 properties planned for release from CNSC licensing and transfer to IC program by 2025

Indigenous & Community Engagement



- **The following groups are the focus of engagement activities:**
 - Northern Settlement of Uranium City
 - MN-S Local #50 President and the Ya'thi Néné Community Land Technician
 - Athabasca Joint Engagement and Environmental Subcommittee (AJES)
 - Fond du Lac, Black Lake, and Hatchet Lake Denesuline First Nations
 - Northern Settlements of Camsell Portage and Wollaston Lake
 - Northern Hamlet of Stony Rapids
 - Ya'thi Néné Land and Resource Office
 - Northern Saskatchewan Environment Quality Committee (NSEQC)



Indigenous & Community Engagement



- **While rights-bearing First Nation and Métis communities of the Athabasca Basin are the primary audiences, other audiences include:**
 - Métis Nation of Saskatchewan
 - General public of the Northern Administrative District and the province of Saskatchewan
 - Non-government organizations
 - Other groups that may express interest (e.g., Athabasca Chipewyan First Nation)

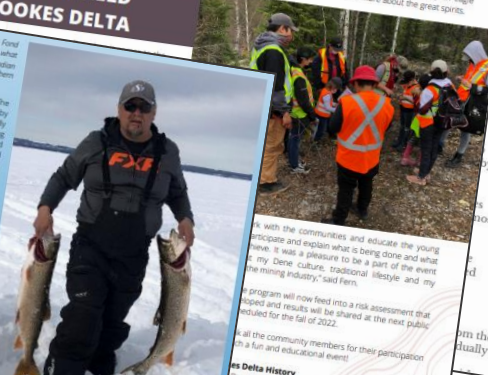
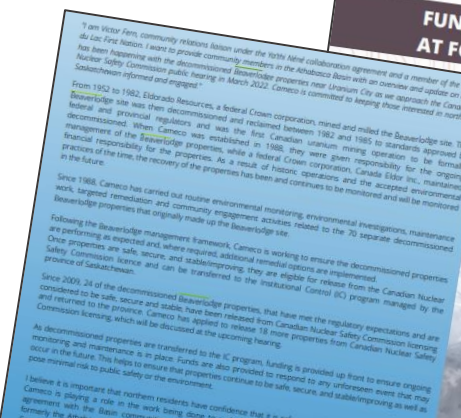


Indigenous & Community Engagement



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- Cameco keeps target audiences in communities informed by:
 - Maintaining two-way communication channels
 - Community based meetings, workshops and activities
 - Presenting to AJES and NSEQC meetings
 - Building capacity and understanding
- Broadly distributing relevant information
 - Fact-sheet and ERA Summary
 - Magazines and newsletter articles
 - Community library
 - Website (includes Dene translation)



Indigenous & Community Engagement



- Recent events were virtual for the most part due to the COVID-19 pandemic
 - Virtual public meetings
 - Community Liaison led Leadership Meeting in Fond du Lac presented in Dene
 - Community Driven Vegetation and Moose Program
 - 2021 Site Tour
 - Local residents, the MN-S Local #50 President and the local representative of the Ya' thi Néné Land and Resource Office



Virtual Site Tour



<https://youtu.be/-RkYzikaiDg>

- Virtual site tours were recorded to help facilitate a reconnection to the land for land users
- The 2021 virtual tour included community member interviews
- Full length videos available on the Beaverlodge website

Uranium City Country Foods Study

- Local residents surveyed and sent in food samples
- Study conducted by third party First Nations owned company
- Country foods consumed by Uranium City residents pose no health risks
 - Supported by CNSC and regional health authority



Indigenous & Community Engagement



Eastern Athabasca Regional Monitoring Program

- Annual community-based monitoring in Athabasca Basin
- Supports Uranium City Country Foods Study by demonstrating it is safe to eat country foods

Community Based Environmental Monitoring Program

- Continuation of former AWG program (18 years of data)
- Continues to demonstrate that it's safe to eat country foods



Risk Assessments



Environmental Risk Assessment

- **Recently updated by third party expert**
 - Completed in accordance with CSA N288.6-12
 - Informed by almost 40 years of monitoring
 - Performance indicators (e.g., water quality predictions) updated accordingly
- **Conclusions**
 - Immediate and downstream environments will continue to recover naturally
 - No risks to humans accessing or residing near the sites
 - Consuming country foods will continue to be safe, while respecting the water and fish advisories



Risk Assessments

- **Hab Assessment**

- Building off the 2020 ERA to evaluate time spent in the Hab area
- Results were consistent with the 2020 ERA
 - Living a traditional lifestyle and consuming country foods can continue to be done safely

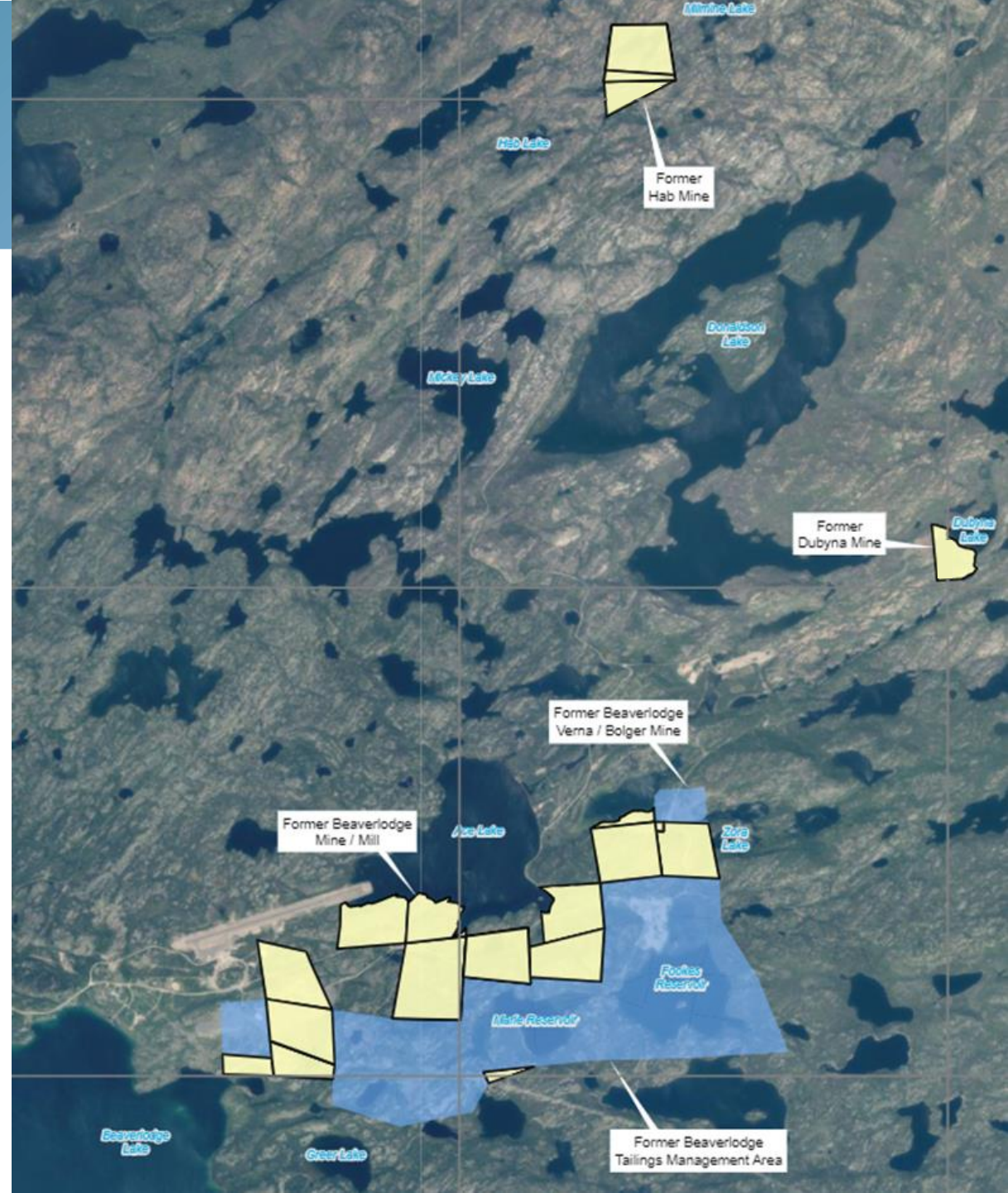
- **Up and Watson Lakes Assessments**

- Small, isolated and not associated with water quality performance indicators
- Concluded that consumption of drinking water is unlikely to pose a risk



Application Summary

- Release 18 decommissioned properties from CNSC licensing and amend waste facility operating licence
- Release from decommissioning and reclamation
- Acceptance into Saskatchewan Institutional Control Program
- Properties are safe, secure, and stable/improving



Performance Indicators & Evaluation

- Properties were decommissioned at the end of operations
- Safe, secure and stable condition
- To demonstrate that release of these properties have met the **performance objectives of safe, secure and stable/improving** have been met, a review of the performance indicators was conducted for each property.



Performance Indicators & Evaluation



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	Acceptable Gamma Levels	Boreholes Plugged	Stable Mine Openings	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 IC.	Water quality data is stable/improving.
ACE MC	✓	✓	✓	✓	✓	N/A
URA FR	✓	✓	N/A	✓	✓	✓
URA 4	✓	✓	✓	✓	✓	N/A
ACE 7	✓	N/A	✓	✓	✓	N/A
ACE 8	✓	✓	✓	✓	✓	N/A
ACE 1	✓	✓	✓	✓	✓	N/A
ACE 3	✓	✓	✓	✓	✓	N/A
ACE 9	✓	✓	N/A	✓	✓	N/A
EXC URA 7	✓	N/A	N/A	✓	✓	✓
GC 2	✓	N/A	N/A	N/A	✓	N/A
NW 3 Ext	✓	N/A	✓	✓	✓	N/A
NW 3	✓	✓	✓	✓	✓	N/A
ACE 14	✓	N/A	N/A	✓	✓	N/A
EXC ACE 15	✓	N/A	N/A	N/A	✓	N/A
EMAR 1	✓	✓	N/A	✓	✓	✓
HAB 1	✓	✓	✓	✓	✓	✓
EXC 1	✓	✓	✓	✓	✓	✓
HAB 2	✓	✓	✓	✓	✓	✓

Acceptable Gamma Levels

- Gamma surveys were completed
- *SK Guidelines for Northern Mine Decommissioning and Reclamation*
 - 14 properties were either undisturbed or met the guideline.
- **Regulatory approved risk-based assessment for remaining 4 properties**
 - Informed by local community member interviews about current and future land use activities
 - Represents a broader range of land users
- **The estimated dose to individuals visiting the decommissioned properties was well below the public dose criterion of 1 mSv/yr**



Boreholes Plugged

- 101 boreholes were remediated following regulatory approved methods



Performance Indicators & Evaluation



Site Free From Debris

- Properties disturbed by mining or milling activities were inspected to locate historic debris
- Where safe and feasible, debris was removed and disposed of, in accordance with regulatory approval



Performance Indicators & Evaluation

Stable Mine Openings

- 11 of the 18 properties have mine openings
- All have been sealed via regulatory approved methods



Stable Crown Pillar

- Assessed the long term stability of crown pillars and potential safety risks
- Residual risk is low
- Geotechnical inspections completed since 2016
- No observable changes to the landform and no concerns identified
- Monitoring will continue in IC



Performance Indicators & Evaluation

Water Quality within Modelled Predictions

- Applicable to 6 of the 18 properties
- Water quality is stable/improving and is within modelled predictions
- Continues to gradually recover



- 18 decommissioned properties proposed for release from CNSC licensing meet the **performance objectives of safe, secure and stable/improving**
 - Suitable for unrestricted casual access for traditional activities
- Eligible for transfer into the IC program or free-released once released from CNSC licensing
- Funding design for the IC program is **robust**
 - Provided up front
 - Ensures monitoring and maintenance activities occur in the future





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