Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochtones et Affaires du Nord Canada

Rayrock (Kwetıı̨ʔaà) Remediation Project

Water Licence W2020L8-0003 Amendment

Technical Session – October 29th, 2024

Contaminants and Remediation Division (CARD)

Kwetıı̀ǫàà (Rayrock) Remediation Project

Presentation Overview:

- Project Description
- Project Status
- Project Schedule
- Water Licence Amendment Overview

Kwetıı̀ʔaà before Rayrock

The Tłı̨chǫ have used the lands and waters around Kwetıı̀ʔaà since time immemorial:

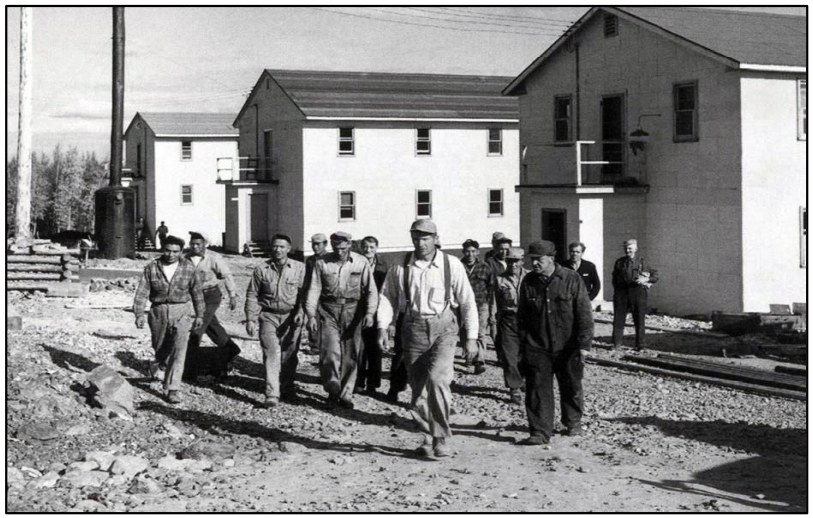
- **Hunting** (moose, caribou, rabbit, grouse)
- **Trapping** (beaver, muskrat, wolverine)
- **Fishing** (whitefish, walleye, inconnu)
- **Berry collection**
- **Gathering place**

Rayrock Mine History

Mine operations: 1957-1959

→ 207,754 kg yellowcake

→ 70,903 tonnes tailings



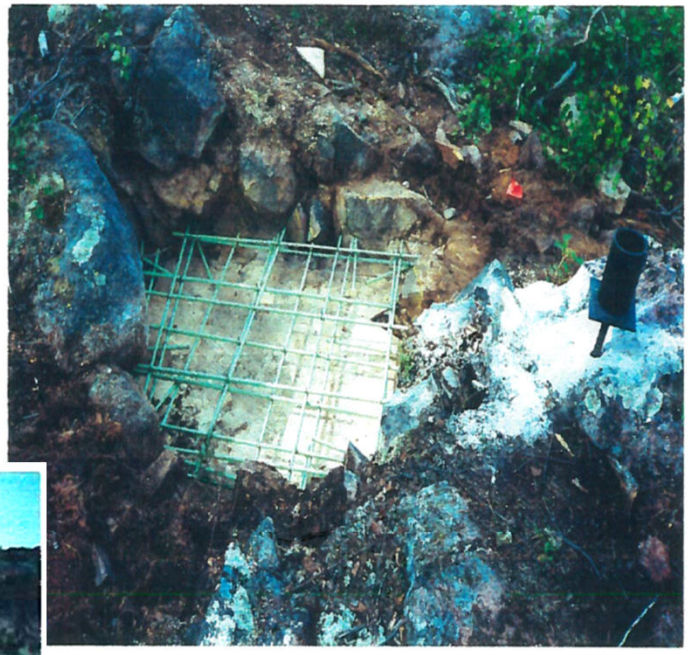
George Hunter Collection
(NWT Mining Heritage Society 2015)

Rayrock Site Remediation

1996-1997 Remediation

(Arctic Environmental Strategy)

- Tailings capped in North & South TCAs
- Mine openings sealed
- Haz mats buried



Rayrock Engagement History

1996-1997 Remediation:

ZERO engagement with the Tłı̨chǫ

Resulted in the TK Report: "The Trees All Changed to Wood"

"THE TREES ALL CHANGED TO WOOD"
(Several Dogrib Elders, 1996)

Report Prepared
by
Dogrib Renewable Resources Committee
Dogrib Treaty 11 Council
for the
Arctic Environmental Strategy
Department of Indian Affairs and Northern Development

March, 1997

Kwetıı̀ǫaà (Rayrock) Remediation Project

NEW Project Partnership

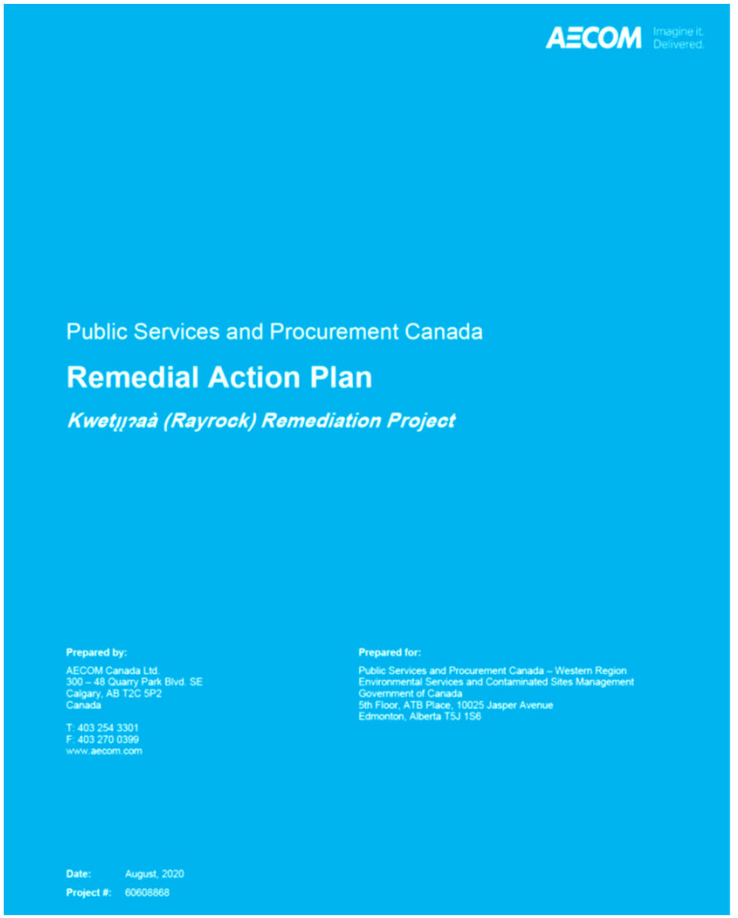
Kwetıı̀ǫaà Elders Committee (est. 2010)

Remedial Action Plan ("The Plan")

- Developed with TG (2018-2020)
- Finalized using:
  - Engineering best practices
  - Local land, water and animal TK
  - Tłı̨chǫ worker experience

RAP 2.1 (includes Closure Objectives)

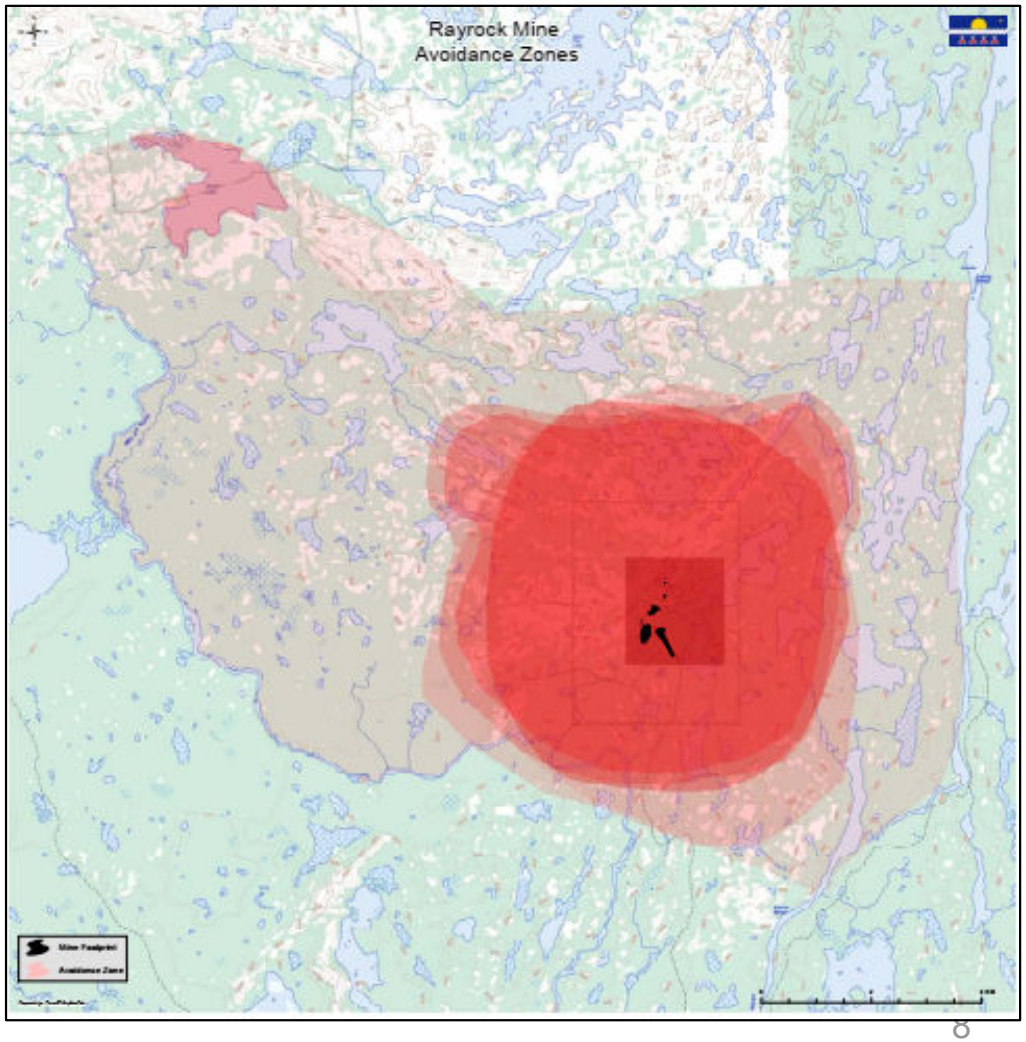
- Before the Board



CIRNAC-Tłı̨cho

Shared Vision

- Carry out remediation of the Rayrock project sites
- Shrink the "Zone of Avoidance" around the Rayrock site
- Make Tłı̨cho feel comfortable returning to traditional land use practices in the area



Kwetıı̀ǫàà (Rayrock) Remediation Project

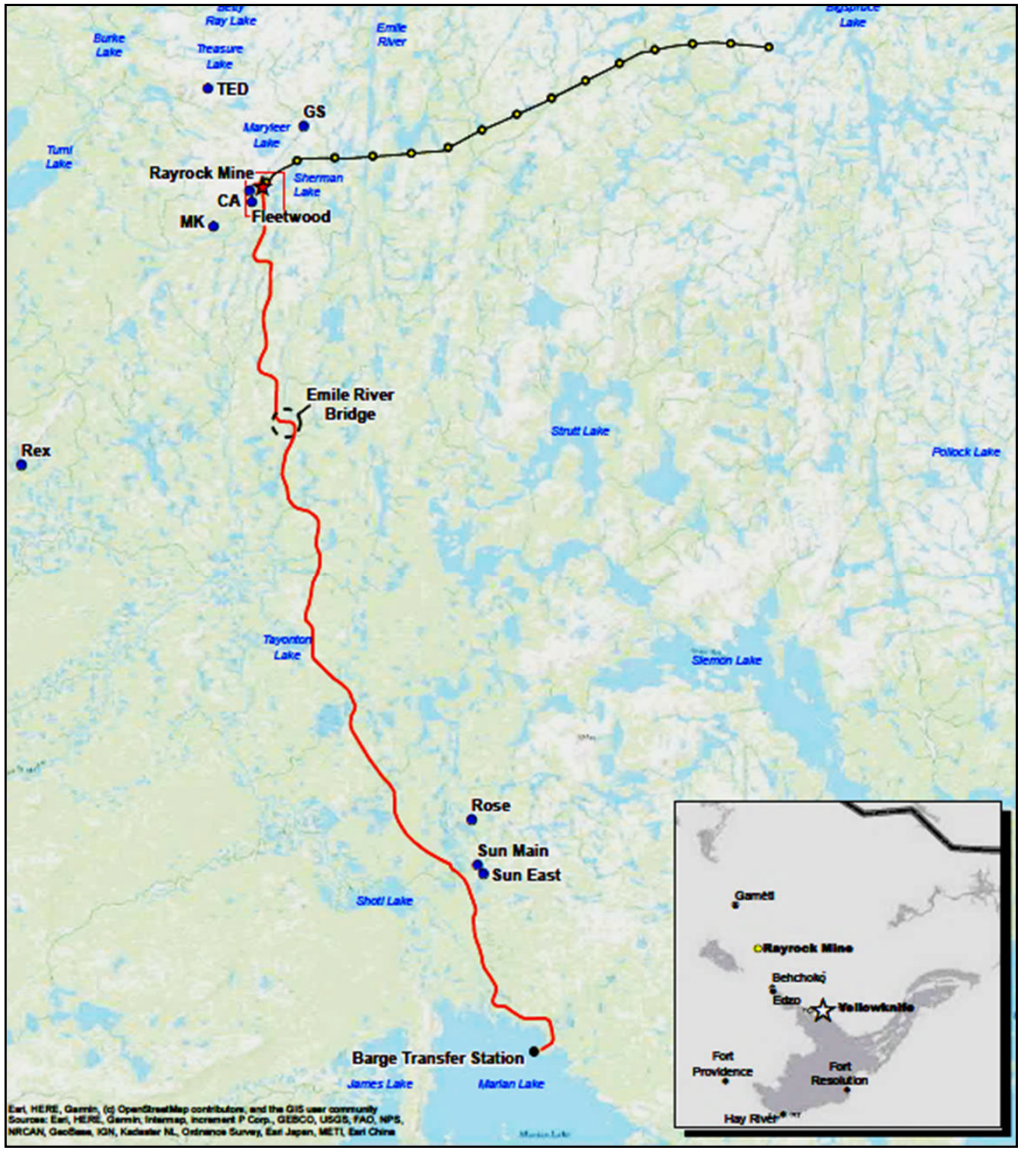
Tłı̨cho̜-Specific Remedial Objectives

1. Make the site safe and shrink the Avoidance Zone.
2. Broad Tłı̨cho̜ involvement, including youth.
3. Our governments need to keep our communities informed.
4. Ongoing communication and learning from both TK and science.
5. Teach youth TK while remediation is occurring.
6. Importance of site visits every year.

Rayrock (Kwetıı̀ǫaà) Project Definition

Project includes:

- Rayrock mine site
- Sun Rose advanced exploration sites
- Six satellite exploration sites
- Barge landing
- Power line



Project Governance Agreement

- **CIRNAC-TG** worked hard between 2021 and 2023 to finalized the PGA (signed by our Leadership in July 2023)
- The PGA sets out a **government-to-government relationship**, provides a **co-management framework** and establishes two Committees made up of representatives from both governments to oversee project completion
- Formalizes CIRNAC **commitments** made during Public Hearings
- Acknowledges Tłı̨chǫ **Self Governance** and Final Agreement

Kwetıı̀aà (Rayrock) Regulatory Environment

Wek'eezhii Land and Water Board

- Water Licence W2020L8-0003
- Land Use Permit W2020X0005

Canadian Nuclear Safety Commission

- Waste Nuclear Substance Licence
- Licence Condition Handbook

CIRNAC Lands Office

- Quarry Permit #2023QP0001

-> CIRNAC-TG Regulatory Working Group

Streamline regulatory process: Regulatory Road Map, submissions/reviews, technical issues

Project Status

- Site mobilization and pre-remediation work in 2023/24
- Re-supply on 2024 winter road
- **For 2024:**
  - **Aggregate production, PWWTP commissioning, Mill Lake de-watering (target lake level and EQCs met)**
  - **CDF construction 75% complete (planned resumption in Q1 2025/26)**
  - **3 geotubes of sediment have been filled**
  - **Sanexen has de-mob'd from site**

CDF and Mill Cove Area

- September 2024

Project Schedule

2023-24
Mobilization, Fall/Winter Program

2024-25
Remediation Year 1 (adjusted)

2025-26
Remediation Year 2

2026-27
Remediation Year 3

2027
→
Post-Closure

Water Licence Amendment Overview

1. Wastewater Containment Facility (CIRNAC)

- Unforeseen issue with camp wastewater treatment system
- Appropriate response from Remediation Contractor
- No contingency within approved Waste Management Plan

2. Total Suspended Solids EQC (15 mg/l -> 25 mg/L)

- MAC and Max Grab confusion coming out of 2021 Public Hearing
- Based on volume of water to be discharged (total = 125,000-200,000m^3) over a two (2) open water seasons SME has determined that risk to receiving environment from discharging TSS at 25 mg/L is very low
- Under FCSAP, site custodians receive funding where actionable risk to the environment can be scientifically established

3. Water Withdrawal

- Established location – adding winter road as use – no other change

Rayrock Wastewater (Secondary) Containment Structure

- Constructed in May 2024 due to issues with treatment in the Wastewater Treatment System.
- Storage of non-compliant but treated water in tanks reached available capacity, so Contractor constructed the Containment Structure to permit Rayrock remediation to continue.
- CIRNAC Inspectors were notified of the Construction in late May and issued a Notice – Inspector's Order requiring cessation of discharge, daily monitoring, submission of a treatment plan and bi-weekly reporting on the structure.
- The Wastewater Treatment System operated at full capacity for the summer after compliance was achieved for wastewater discharge.
- Inspectors were kept informed through the summer of the status of the Wastewater Containment Structure.
- To improve the containment of the non-compliant wastewater, the Inspectors approved installation of a bladder tank in early July 2024.

Rayrock Wastewater (Secondary) Containment Structure

- Attempts to introduce the non-compliant wastewater from the structure were met with limited success; non-compliant wastewater upset the balance of the Wastewater Treatment System leading to discharge non-compliance.
- Due to the treatment challenges, limited water from the wastewater containment cell was treated through the Wastewater Treatment System.
- By September 2024, the Rayrock Project Team recognized that treatment of the non-compliant water would not be possible this year.
- A revised path forward was proposed to the Inspectors that included containment of all non-compliant wastewater in two bladder tanks.
- With all non-compliant water stored in primary containment (the bladder tanks), the Containment Structure would remain as secondary containment to prevent release to the environment in the case of primary containment failure.

Rayrock Wastewater Secondary Containment Structure

- Non-compliant wastewater contained within the primary bladder tanks will remain in place over-winter; the bladder tanks are flexible and are not at capacity to allow for expansion during freezing.
- A new larger Wastewater Treatment System, of the same design but with larger components, will be brought to site in 2025.
- The larger capacity Wastewater Treatment System will permit concurrent treatment of the stored non-compliant wastewater with the camp wastewater produced in 2025.
- This Water Licence Amendment request includes maintenance of the bladder tanks and the secondary containment structure until the end of the remediation project.
- Water collecting in the secondary containment structure will be tested for EQC parameters; if compliant, it will be discharged directly to the drainage field (sump) but if is it not compliant it will be treated through the Wastewater Treatment System.

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