

YELLOWKNIVES DENE FIRST NATION

MVEIRB Issues Scoping Session

EA0809-001 Giant Mine

Remediation





Chief Emile
 Drygeese Territory
 July 1900, Treaty 8

Chief Joseph
 Drygeese, July
 1920, Treaty 8

*"As long as the sun
 rises, the grass
 grows, and the
 river's flow"*



OUTLINE

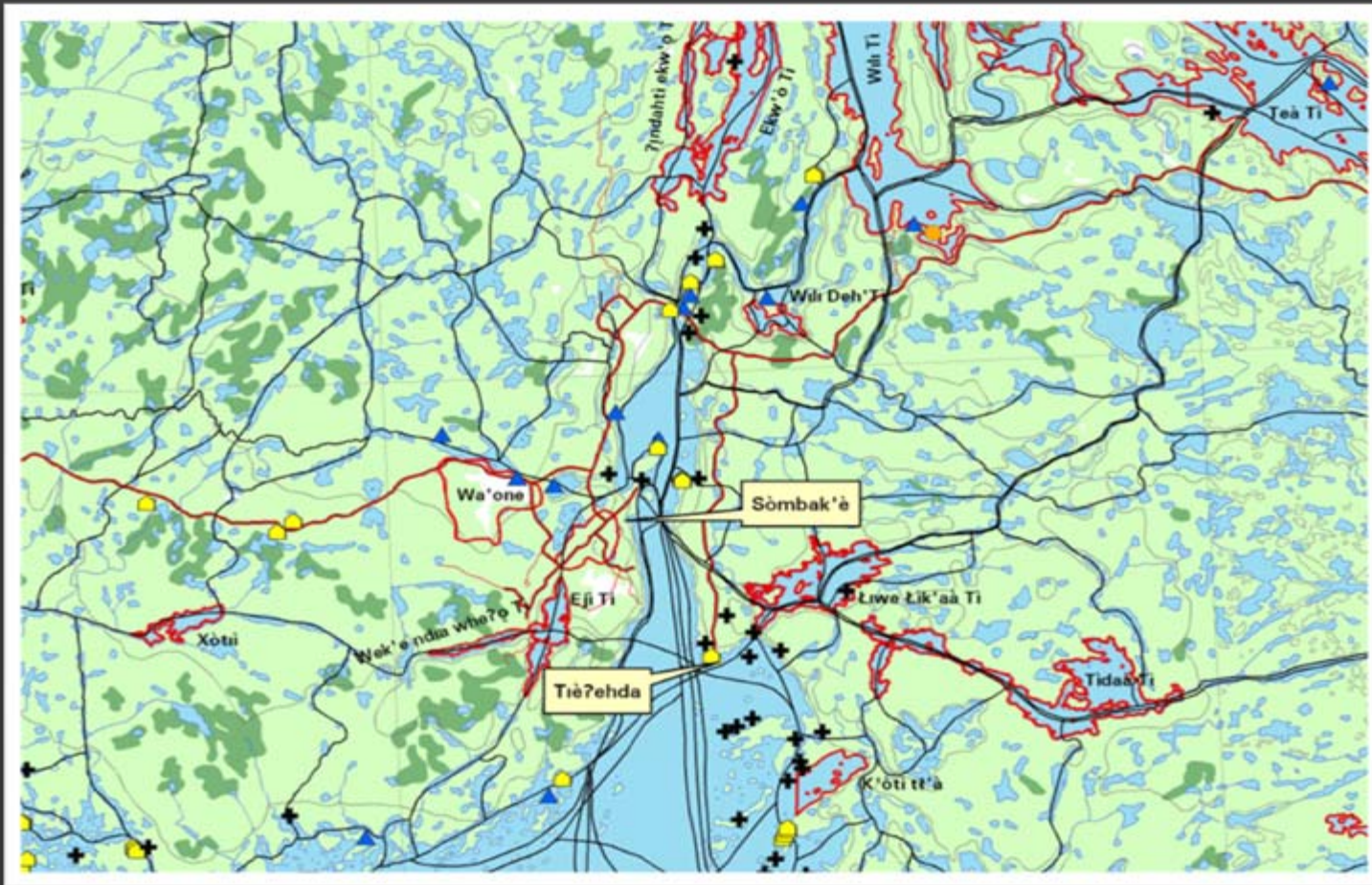
1. Before Giant Mine
2. Environmental History
3. Impacts of Giant Mine
4. Environmental Assessment Approach
5. Key Issues
6. Scope of Development Issues
7. Scope of Assessment Issues
8. Recommendations



BEFORE GIANT MINE

Yellowknives Dene Giant Mine area Social and Cultural Context

BEFORE GIANT MINE



Yellowknives Dene Traditional Land Use and Occupancy Mapping Project. Select area provided in agreement with the Yellowknives Dene First Nation office of the Prince of Wales Northern Heritage Centre.

BEFORE GIANT MINE

| | | |
|--------------------------------|------|---|
| Nomadic & Treaty Making | 1800 | Hudson's Bay Company Trading Company |
| | 1823 | Treaty making at Mesa Lake by Chief Akaitcho with the Tlicho (Dogrib) |
| | 1900 | <ul style="list-style-type: none"> • Original Treaty 'B' signed & Yellowknives Dene 'B' Band included in Fort Resolution • Treaty rights promised that we could hunt, fish, and trap on our land • Indian Agent called our Chiefs & Headmen Councillors • Travel between Ft. Resolution and YK made by boat only • Roman Catholics were influential • Métis people as translators |
| Broken Promises & Restrictions | 1920 | Treaty in Ft. Resolution was boycotted for three years |
| | 1921 | Treaty 11 was made and the 'Commissioner' gave them YK Dene land |

BEFORE GIANT MINE

| | | |
|--|---------|---|
| Holocaust, Epidemic, Disease, Mourning & Reaffirmati on of the Treaty | 1922-23 | <ul style="list-style-type: none">• A game reserve was established. No idea what it was• YK Dene Mrs. Crookedhand found gold |
| | 1928 | Influenza epidemic killed the YK Dene |
| | 1933 | <ul style="list-style-type: none">• Gold found• Yellowknife established |
| | 1934 | <ul style="list-style-type: none">• Mineral exploration on Dene Lands• Gold strike at the YK Giant Mine |
| | 1935 | Gold Mine was Built |
| | 1936 | Gold extraction started Traditional Chief Willie Crapeau recognized |

BEFORE GIANT MINE

- Mrs. Liza Crookedhand



BEFORE GIANT MINE

- Area where Giant mine is was
 - Good berry land and was near prime fisheries
 - Near high quality moose habitat
 - Temporarily used by many large families that moved elsewhere as the seasons changed

BEFORE GIANT MINE

- *“Women use to pick berries in the area where uptown Yellowknife is now and in the Giant Mine area. The men use to portage to Long Lake to hunt for Caribou. We would set up camps to make dry meat and look for berries for the upcoming winter.”* Mrs. Marie Adele Sangris (Born May 1913 – Old Fort Rae). Transcript of Elders Tape 1968/1972. Prepared by IBNWT, held in the Dene Nation Archive. Transcript by Lena Drygeese, December 1993.

BEFORE GIANT MINE

- *“Long before the mine was built in 1938, our traditional camps were located around the present mine site. Our people knew about the gold, in fact it was a Dene women that showed the prospectors where to locate it, but it was of no value to us. What was important was the water, fish, game (moose, beaver, and muskrat). We fished at the mouth of Baker Creek, and this area was a favourite berry picking and firewood gathering site. Our elders remember when the mine was built. We never were consulted and we did not give our consent to have this mine built on our land.”* Chief Fred Sangris January 29, 1998, NWT Water Board Hearing.



GIANT MINE ENVIRONMENTAL HISTORY

The Path to Today's Environmental Challenges

YKDFN PERSPECTIVE OF GIANT

- That was then. Now, the berries aren't edible, the moose aren't here any more, the caribou don't come, the fish can't be eaten. That is the standard of reclamation to which the success of this process should be judged.

ENVIRONMENTAL HISTORY

- 1948 – No environmental controls
- 1949 – Smokestack for dilution/dispersion
- 1951 – First inefficient industrial controls (w/ first arsenic trioxide production as a byproduct)
- 1959 – Baghouse built, much better efficiency in controlling the release. Major step forward in terms of emissions
- 1970 – Slight increase in efficiency
- 1978 (to present) – Relatively efficient industrial control

Every step forward in terms of emissions control resulted in more arsenic trioxide being produced

DAILY EMISSIONS

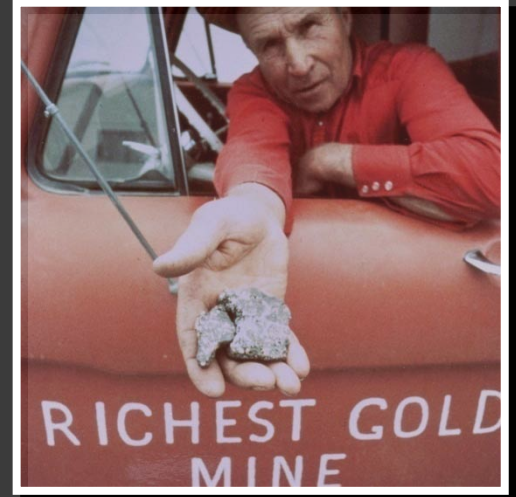
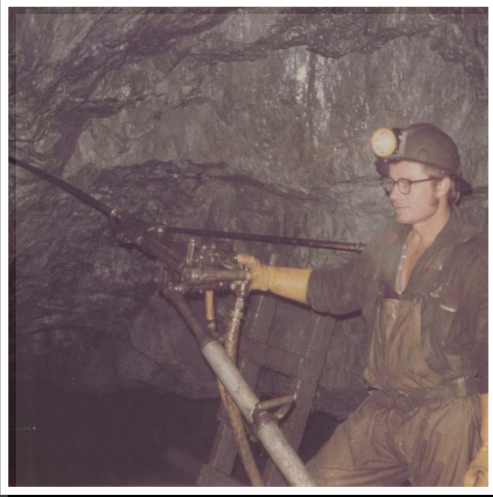
- Early 50's - ~7,300 kg/day of arsenic released into the air
- 1954 - 5,500kg/day of arsenic into the air.
- 1955-1957 ~3,300 kg/day of arsenic released
- 1958 - ~1,600 kg/day (or so) of arsenic released

- From 1959-1977 ~350-370 kg/day

- From 1978 onwards, ~30.5 kg/day

RAW EMISSIONS

| Start | End | Days | kg/day | kg Arsenic Released |
|--------------|-----------|-------|---------|---------------------|
| 01-Jan-48 | 31-Dec-53 | 2,160 | 7,300.0 | 15,768,000 |
| 01-Jan-54 | 31-Dec-54 | 360 | 5,500.0 | 1,980,000 |
| 01-Jan-55 | 31-Dec-57 | 1,080 | 3,300.0 | 3,564,000 |
| 01-Jan-58 | 31-Dec-58 | 360 | 1,600.0 | 576,000 |
| 01-Jan-59 | 31-Dec-70 | 4,320 | 370.0 | 1,598,400 |
| 01-Jan-71 | 31-Dec-77 | 2,520 | 350.0 | 882,000 |
| 01-Jan-78 | 31-Dec-95 | 6,480 | 30.5 | 197,640 |
| TOTAL | | | | 24,566,040 |



IMPACTS OF GIANT MINE

On the Yellowknives Dene First Nation

IMPACTS OF GIANT MINE

- *[Translation] Ever since it started, I have never heard one good thing about mining: it destroys the land. We survive by the animals: all our ancestors lived by the animals on the land, and the animals were healthy. If we don't take care of the animals, if the mining starts up and the animals get contaminated, the people will also. They [i.e., the mining companies] should be careful as to how they work with the Dene and how they should work to protect the environment. And my wife, she remembers when she used to go berry picking in the Giant Mine area; she used to go there with her grandmother... continued next slide*

IMPACTS OF GIANT MINE

- *Right now, you can't put anything in your mouth from that area: everything is contaminated. It's as if they've killed everything around here. We need to make a statement that we don't want to destroy anything on this land.* **Weledeh Yellowknives Elder Joseph Charlo, Ndilo, YKDFN Taped Interview.**



IMPACTS OF GIANT MINE

- *The people were never warned about impacts and risks from living near mines. In late December of 1949, a massive emission from the Giant mine dispersed huge amounts of arsenic into the air, settling into the ice and snow. Melting snow in the spring of the following two years was so toxic that notices were printed in Yellowknife newspapers warning people not to drink or use the melt water. Few Yellowknives Dene could read the notices...continued on the next slide...*

IMPACTS OF GIANT MINE

- *Anyone who washed their hair with arsenic-laden melt water in the next two springs went bald. A dairy herd, horses, chickens, and dogs were among the domesticated animals that died from drinking melt water in spring 1950. But the greatest tragedy occurred in spring 1951: four children in family camps in Ndilo died. The mine owners gave their parents some money, as if it could compensate for the loss. Women stopped picking medicine plants and berries, which used to grow thickly in the area of the Giant mine. The people moved away, avoiding the mine area for some years, although it had once been so important to them. To this day, they refuse to use water from Welehdeh for soaking caribou hides or making dry fish.* 1995. "It's About Our Health: towards pollution prevention". Report of the House of Commons Standing Committee on Environment and Sustainable Development Review of the *Canadian Environmental Protection Act*. Presentations by Yellowknives Dene Elders on arsenic impacts are included in this report.

IMPACTS OF GIANT MINE

- *“Before the Yellowknives Dene understood what arsenic was, they were aware of changes that made them wary of the water, fish, berries, and plants near the mine sites. When land users took their sled dogs through the tailings ponds that crossed their traditional trails, the dogs would lose the fur on their paws within a day or two. The Elders can recall people falling off their sled into the tailings ponds, which stayed open year-round, and becoming ill, losing their hair soon after. After many of their sled dogs died without obvious cause, dog owners stopped feeding them fish from Weledeh. People, too, started dying from cancer at a rate previously unknown to Yellowknives Dene.” Rachel Ann Crapeau, November 13, 1998, YDKFN Taped interview.*

IMPACTS OF GIANT MINE



Ndilo soil sampling shows high (above industrial) levels of arsenic

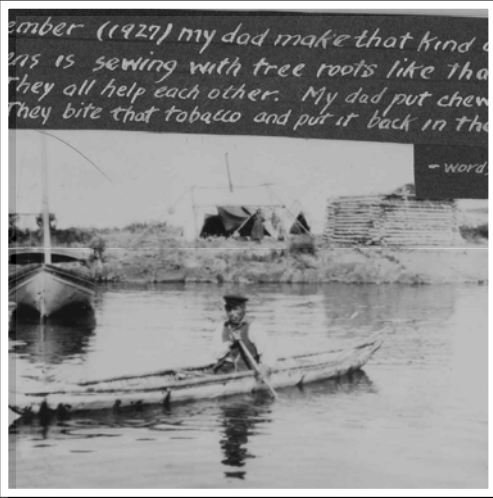


ENVIRONMENTAL ASSESSMENT APPROACH



This is a unique environmental assessment (EA) in that the MVEIRB not evaluating the potential adverse impacts of a proposed development. Rather, the MVEIR is evaluating to what extent the proposed development's impacts on the environment are likely significantly positive.

This EA is a mirror of a "normal" EA in that MVEIRB is testing the proposed development to determine its significant positive impacts; and where it falls short, providing the Minister recommendations for achieving significant positive outcomes.



KEY OUTSTANDING ISSUES WITH THE GIANT MINE REMEDIATION PLAN

KEY ISSUES

- Future Possible Use of the Giant Mine Site
 - Standard of Reclamation and Measurement Criteria – Currently Industrial-Recommend Residential
- Legacy Issues
 - Recognition of Past Injustices to the YKDFN
 - Recognition and Respect for YKDFN Culture and History



SCOPE OF DEVELOPMENT ISSUES

SCOPE OF DEVELOPMENT ISSUES

- Justification for choosing the ‘frozen block’ method for entombing the arsenic.
- Inclusion of the Ingram Trail relocation as it applies to the proposed development.
- Include in the scope of development “Surface reclamation as it applies to all impacts on the environment caused over the life of the mine deemed necessary of rehabilitation.”

SCOPE OF DEVELOPMENT ISSUES

- Because the proposed development will exist in perpetuity, follow-up programs are vitally important, as are the specific requirements of such programs.



SCOPE OF ASSESSMENT ISSUES

SCOPE OF ASSESSMENT ISSUES

- The YKDFN recommends including in the scope of the EA
 1. The currently proposed extents from the proponent – essentially reclamation of the mine lease block
 2. The remediation of any environmental impacts on the surrounding region originating from the 60 years of mine operation

SCOPE OF ASSESSMENT ISSUES

- The type and extent of reclamation will determine the quantity and quality of renewable resources available for future generations. The proposed industrial reclamation standards forsake future generations from the benefits they might otherwise have. Therefore, a more careful examination of trade-offs that could increase the benefit to future generations is warranted.



RECOMMENDATIONS

RECOMMENDATIONS

- Environmental
 - Need to develop a better understanding of the Airborne Dispersion and seasonal deposition, especially with respect to snowmelt and the freshet
 - The creation of a clearinghouse where contaminant related data is collated, organized and stored

RECOMMENDATIONS

- Environmental
 - Consideration of a regional sampling program, with a focus on the YKDFN communities to ensure that contamination is within limits
 - Focus on the impacts of ~24,566,040 kg of arsenic released into the environment
 - Especially relating to Human Health
 - Re-assess ecological status

RECOMMENDATIONS

- The EA approach
 - MVEIRB usually looks for significant impacts and then recommends ways to reduce those impacts to below significance thresholds
 - In this case, MVEIRB should look for lack of significant positive impacts and recommend ways to increase project impacts to above significance thresholds

RECOMMENDATIONS

- Scope of Development
 - Transparent Justification for the proposed development
 - Demonstrate clear S.35 consideration of YKDFN input into the proposed Development
 - Include the Ingraham Trail Redevelopment

RECOMMENDATIONS

- Scope of Development
 - Include full geographic extent of impacts on the environment by the mine over its lifetime
 - Have the Proponent submit proposed follow-up programs and the proposed requirements of such programs

RECOMMENDATIONS

- Scope of Development
 - Proponent should Report on mechanisms considered and adopted for the Monitoring and reporting of site stability and environmental quality.

RECOMMENDATIONS

- Scope of Development
 - Proponent to discuss the merits of implementing an expert panel similar to Independent Environmental Monitoring Agency to review the evolving environmental setting and technology
 - Proponent to present engineering methods that can be employed now to facilitate disposal in the future?

RECOMMENDATIONS

- Scope of Assessment
 - Assess what was actually impacted by over the lifetime of the mine, not just the mine claim block area.
 - Assess the impact of a catastrophic failure of the arsenic entombment as per accidents and malfunctions or impacts of the environment on the project.
 - Assess ancillary infrastructure development such as partial Ingraham Trail relocation

RECOMMENDATIONS

- Scope of Assessment
 - Reporting of opportunity costs to future generations of alternative developments not selected

On behalf of the
Yellowknives Dene
First Nation,
thank you.

