DIAVIK DIAMOND MINE SITE VISIT – DEBRIEFING MEETING

YELLOWKNIFE INN, AUGUST 21, 2012

PARTICIPANTS

Diavik Diamond Mine Inc.	Colleen English
SENES Consultants Ltd	Deborah Simmons
North Slave Métis Alliance	Mel Enge, Wayne Langenhan, Ed Jones
Łutsel K'e Dene First Nation	George Marlowe
Kitikmeot Inuit Association	Bobby Algona, John Ivarluk
Tłı̨chǫ First Nation	Pierre Beaverho, Louis Zoe, Peter Husky (interpreter)

CLOSURE OBJECTIVES

- Physically stable slopes to limit risk of failure that would impact the safety of people or wildlife
- Rock and till pile features (shape and appearance) that match the look of the surrounding natural area, as much as possible

DIAVIK REQUIREMENTS

- Capping to contain contaminants within the pile
- Maintain the temperature of the rockpile

HOW DIAVIK WILL USE TK PANEL RECOMMENDATIONS?

- 3 year window before next submission of closure plan – 2016.
- Diavik wants community input.
- There will be conflicting views, but some of the best ideas that work with technical considerations will be used.
- Diavik will report back on what input was used.
- The rockpile is just under 200m (about 190m or 700 ft)
- The more ideas, the better.

HERITAGE (RENEWING HISTORY)

- Hunting and fishing
- Campsite
- Berries

Goal

Future generations will want to visit!

TEST ROCK PILE

SHAPING THE LANDSCAPE

- Simulate an esker
- Slope the top edges so they're rounded
- Slope the sides so less steep, like the test pile
- Remove big boulders
- Rock from piles back into the pit
- Flatten the top to that there are no berms and caribou can easily walk – there are fewer places for predators to hide.

SHAPING THE ROCKPILE

- Less than 8 miles NE of Diavik that might be good to look at as an example – it's sandy.
- In winter NE or NW (prevailing) wind will shape the snow, so that it's smoothed over and cuts straight down at the lee side – people from Kugluktuk know this. People who travel on the land with skidoo know that you have to watch this when you get to an esker.
- There are a lot of sandflies in August, so the caribou will want to go up on the slope to catch the wind, sleep, and get away from the flies. There needs to be something for them to eat up there.
- Caribou ramp? The caribou will come across from the northwest side to the east side, and swim across the lake – that's what they used to do before. And coming back, from southwest again.
- Use waste rock to slope the pile.

REVEGETATION

- Options: Use soil from tundra; cover with rock and till from pit A21
- Natural revegetation
- Plant shrubs near bottom in the soil being placed there (dwarf birch and willow)
- Visit old archaeological sites to view regrowth
- Place soil near the bottom
- On the tundra, there's black soil – if they create an esker and put that soil, there might be more regrowth. Eskers are usually just rocky and sand, so they need soil added for regrowth.

REVEGETATION ISSUES

- Soil nutrients
- Erosion from water and/or wind
- Disturbing another area by moving materials

WATER CHANNELS

- Water can be diverted onto the tundra, or go directly into the water.
- Water will find its natural channels as well.
- Channel to a pond contained geotextile, deep enough so water will seep into ponds in four different areas
- Let nature take its course

Issue

Contaminants are or are not a concern.

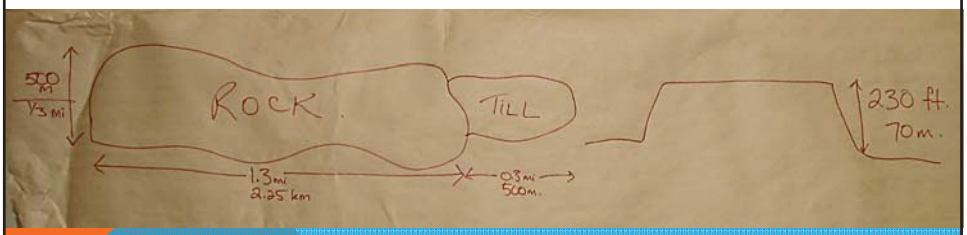
ROCKPILE DIMENSIONS

1/3 mile or 500m wide

1.3 miles or 2.24 km long

Till pile 500m or 0.3 miles

Height 230 feet or 70 metres.



SIMULATED ESKER

- Caribou will have easier access to the hill when the hill is reshaped, from all different directions.
- There's a lot of seepage from the bottom of esker.
- Esker material compared with gravel from rockpile.
- Gravel holds nutrients in the ground that makes the baby birch grow easy.
- Under the topsoil is natural till from long ago.
- A little bit of gravel from an esker or even crushed rock will hold more nutrients for plant life.

PROCESSED KIMBERLITE POND

- What we do with one part of the pile, we don't necessarily need to do with the whole pile.
- Could shape the landscape to prevent caribou from accessing a certain area like the PKC area.
- Option to cover the PKC area – the material isn't as solid, so there might be more movement, and could become unstable.
- There may need to be an open water area for catching water from the rock pile.

ISSUES IN SHAPING PILE

- Caribou travel (but caribou travel anywhere! Can be injured with steep slope; safety is a key consideration)
- Channeling water to ensure contaminants don't reach Lac de Gras
- Snow drifting

WATER/CONTAMINANTS

- Don't bury metals in the pile
- Use geotextile in drainage areas d/s of pile and revegetate these areas.
- There may be seepage from PKC pond. They drain that pond back from water plant, cleaning the water in that way?
- Use esker materials nearby as cover materials
- There is a dump for inert materials in the pile, including metals, rubber, styrofoam, machine parts (but not vehicles).
- Can metal be backhauled? But there's a short window on winter road, it's costly, and there's no storage space. Don't want to bury things on our ancestors' island. Our ancestors used to clean up after themselves when they left that island.

PKC POND

- The PKC pond will be drained but there's a mud, and water will come out of the mud as it gets compacted. There may need to be a pond for the water to escape. Any contaminants may be more concentrated after closure and draining the pond.
- What will the water quality be? It will be tested for a lot of years. Currently tested monthly.

OPTIONS FOR PKC

- Should caribou be kept away from PKC pond until it's certain that the water is safe?
- Options for keeping caribou away could be:
  - steep sides to rockpile to keep caribou away
  - Options for keeping caribou away from the other side of the pond?
- Option B could be to shape rockpile for safe caribou access all around and let nature take its course. The landscape will definitely change and won't be the same as it once was. Work with what we have.

INFRASTRUCTURE

- Current plan to reclaim airstrip; suggestion to keep airstrip as an emergency landing site (Wayne) – but this would not be maintained. Needed for long term monitoring of the site (Pierre). It won't go back to a pristine state anyway.
- Keep some small buildings for hunting/fishing parties – but someone would have to own/lease the building and the land
- Debate about whether people would want to use that place – but there are cabins elsewhere on the lake.
- If Diavik leaves materials behind, all the other mines will do the same thing.

PLANTS THAT ARE GOOD FOR REVEGETATION?

- What's a good way to speed up the revegetation process?
- Look at an esker that's lined up the same way as the rock pile to see what grows there naturally in different areas (shade, leeward, side, top).
- Take materials from the natural eskers and spread it on the rockpile to revegetate.
- We have the opportunity to have our plan ready so that the closure of the pile can start when the A21 pit is being dug.

A21

- This pit was always part of Diavik's mine plan – and was approved during the initial Environmental Assessment.
- The rock from this pit will be used to close the rockpile etc.
- If there's any left over waste rock, it will be down near the pit.

LOOKING BACK

- Comprehensive Study Report – brought together all the studies (1998-1999) – completed by the government.
- Problem that we're asking some of the same questions over and over, because different people are involved.
- Need to include youth more.

PREFERRED "LOOK" WITH CONTOURS FOR WATER FLOW

TEST PILE AT DIAVIK