

Environmental Monitoring Advisory Board

DRAFT Minutes – March 26-27, 2019

EMAB Boardroom, Yellowknife, NT

Present:

Napoleon Mackenzie, *Chair*
Charlie Catholique, *Director*
Jack Kaniak, *Director*
Sean Richardson, *Director*
Arnold Enge, *Director*

Yellowknives Dene First Nation
Lutsel K'e Dene First Nation
Kitikmeot Inuit Association
Tlicho Government
North Slave Metis Alliance

Absent:

Julian Kanigan, *Director*

Government of the Northwest Territories

Staff:

John McCullum, *Executive Director*
(minutes)
Allison Rodvang, *Environmental Specialist*
(minutes)

Environmental Monitoring Advisory Board
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Guests:

Violet Camsell-Blondin
Gord Macdonald (day 2)
Winter Bailey (day 2)

Tlicho Government
Diavik Diamond Mine
Diavik Diamond Mine

Tuesday, March 26, 2019 EMAB Review of ICRP Version 4.0 Engagement Items	
Call to Order	<p>Meeting called to order at 9:12 am by the Chair. Chair gave an opening prayer.</p> <p>Sean explained to the Board that Violet was attending the meeting as an observer. EMAB is going to be receiving a letter to appoint Violet or Jolene Husky as the Board Member. New Regulations department in Tlicho Government is covering Environmental Agreements. Sean will be working with Protection Dept.</p>
Discussion	<p>ED gave background from last meeting and outlined topics that the WLWB had directed Diavik to engage with EMAB and other Parties to the proceedings on.</p> <p><u>Revegetation of WRSA</u></p> <ul style="list-style-type: none">• Use old photos to show where vegetation was prior to development• Coverage was 65-70 percent according to Diavik's baseline report

- Reference TK Panel statements – noted that TK Panel recommended some vegetation on WRSA and in PKC, in addition to areas shown on TK Panel map

Agreed that Diavik should target revegetating WRSA and East Island to same proportions as prior to development of the mine i.e. 65-70% of the island was vegetated. Reference TK Panel statements on revegetation

Q: Is Diavik using rye and other crop species for re-vegetation? A: Diavik has been using native species. Ekati was using seeds from plants that would die after each season and use to help promote growth of native species by making environment more hospitable.

North Inlet

- North Inlet sediment has been contaminated with hydrocarbons
- Don't want to open it back to the lake
- Could turn it into a marsh. This is asking more of Diavik beyond what objectives require.
- North Inlet is a small percentage of the lake, keep it closed

Agreed that the North Inlet should not be reconnected with Lac de Gras unless sediment is safe for aquatic life.

Contaminated Soil

- We don't know how much soil there is, or how badly contaminated.
- Currently in WTA in a lined area
- Waiting for Diavik to propose criteria to be approved by ECCC and then landfarm the contaminated soil
- Communities recommended nothing be buried on site at the beginning of the project. This is unrealistic. Inert materials are in landfill because it is reasonable, and they don't react. EMAB needs to make reasonable recommendations.
- Soil should be treated to strictest criteria and if it doesn't meet criteria, ship it off-site
- There is already contaminated soil in the Type 3 portion of the rock pile
- EMAB could check to find the document that approved putting the contaminated soil in the WRSA.
- Follow land farm standards and if it doesn't meet those it should be shipped out
- With enough time it should meet the criteria

Agreed that any contaminated soil should be treated to the strictest criteria (CCME Agricultural). If it doesn't meet that standard it should be shipped off site.

Closure Objective SW1

Discussion

- Currently aquatic life criteria do not apply on East Island
- Seepage should be safe for aquatic life on the island in those ponds
- Applying aquatic life criteria on-land is too strict; it has to be met in Lac de Gras. **If EMAB is too strict its comments become irrelevant**
- Why is it a problem to meet the aquatic criteria on the island? Why shouldn't we support GNWT recommendations?

Agreed to support GNWT's recommendation to add protection of aquatic health to Closure Objective SW1.

15 minute break

Chair reminded Board Members to conduct conversations with respect and to have a good meeting.

Closure Criteria for SW1 and SW2

Discussion

- If we use the same methodology as in the previous topic, then use the most stringent unless otherwise stated and let the WLWB decide what the numbers ought to be for the various parameters
- Noted that EMAB does not want to seem unreasonable
- Define what the mixing zone is
- What is the level of uranium at Diavik?
- Rayrock Mine is not choosing the strictest criteria in relation to water quality and fish. Right now, the water is flowing to Rae and the same things will happen with Kugluktuk and the Coppermine River if the strictest enforcement isn't applied.
- Uranium is there naturally, it can bioaccumulate

Agreed that the strictest criteria among criteria SW1 and SW2 should apply.

SSRBCC

- EMAB SSRBCC consultant will review information in a separate process.
- Diavik will have a conformance table that shows changes to reports ready by April 8, 2019
- EMAB will be getting in touch with consultant so we can have a meeting with Diavik consultants to go over outstanding issues.

Agreed to follow proposed approach.

The Board reviewed decisions made on each topic:

1. Revegetation

Agreed that Diavik should target revegetating WRSA and East Island to same proportions as prior to development of the mine i.e. 65-70% of the island was vegetated. Reference TK Panel statements on revegetation

2. North Inlet

Agreed that the North Inlet should not be reconnected with Lac de Gras unless sediment is safe for aquatic life.

3. Contaminated Soils

Agreed that any contaminated soil should be treated to the strictest criteria (CCME Agricultural). If it doesn't meet that standard it should be shipped off site.

4. Closure Objective (SW1)

Agreed to support GNWT's recommendation to add protection of aquatic health to Closure Objective SW1.

5. Closure Criteria SW1 vs SW2

Agreed that the strictest criteria among criteria SW1 and SW2 should apply.

6. SSRBCC

Follow proposed approach of having EMAB's consultants review revised SSRBCC report once it's ready (expected April 8).

Approve new proposal for new EMAB auditor

- EPR provided a cheaper proposal. ED is recommending EMAB accept EPR's proposal to be EMAB's auditor for 2018-2019.
- ED to check that Secretary-Treasurer is comfortable with choice

Motion: *to approve EPR as EMAB auditor for 2018-2019.*

Moved: Arnold Enge

Seconded: Charlie Catholique

Motion carried.

Some discussion on performance review for Executive Director.

Adjourned at 10:45 am.

Wednesday, March 27, 2019
EMAB meeting with Diavik on WLWB Topics for Engagement

Gord Macdonald and Winter Bailey joined the meeting

Chair called meeting to order at 9:05 am

Will follow a free form discussion; go topic by topic.

Discussion

Gord introduced what Diavik is hoping to accomplish from this process.

- Get clarity on what various party positions are
- Diavik might have more meetings if everything is not finalized today

Q: Is Diavik holding meetings in communities? A: Yes, met with GNWT on March 6 (first meeting, didn't line up second), next meeting is in Lutsel K'e on April 2, and have one scheduled with YKDFN for April 23. Winter is setting up meetings with other three communities.

Q: Did Diavik consider holding a workshop with all parties? A: Not with this process. It is hard with scheduling so many groups. Have found it is better to do one on one meetings with each community.

Comment: Would be helpful if EMAB members could attend, identify EMAB in the community in case they don't know who representative is.

Charlie could let Doris Enzoe know about the meeting in Lutsel K'e. He will be at work on that date.

Q: Would it be beneficial for Chair or ED to attend meetings? A: Open to EMAB members, and public. Diavik will let EMAB know what dates are.

Targeted Re-vegetation

- Should it include the WRSA? This means where Diavik would actively prepare soils and seed for re-vegetation. Different pace compared to natural revegetation.
- Diavik is currently planning to do all the flat places, roads, laydowns and not do PKC and WRSA. Held a full TK Panel session on this. There were some areas that the Panel did not want revegetated, in particular areas where hydrocarbons had been stored.
- Actively revegetating might result in drawing wildlife towards that area; principle was that site should be neutral for wildlife.
- Revegetation methods are still being developed; coming in future ICRPs
- EMAB's discussed yesterday that going back to initial EA, site should be returned to how it was, achieve pre-development percent of natural cover. General principle is to bring site back as close as possible to original state, but did not get into specifics of where, and how that 60-70 percent should be divided amongst the different areas.
- Noted that the TK Panel made recommendations on revegetation that included some vegetation on the rock pile and PKC
- TK Panel views change, difference of views between members, presented the map as a conclusion but may not represent all recommendations. Some recommendations are conflicting.
- **EMAB and Diavik have different opinion for re-vegetation of the WRSA**

Q: Does Diavik plan to revegetate all areas at the same time or start with rockpile. A: rockpile is the first available surface. WLWB's direction was based on EMAB's comments about revegetating the rockpile.

Q: Does Diavik think the caribou will come back? A: Yes, caribou seek high places so once activity at Diavik and on Ekati's Misery road stops, caribou will likely return

- East Island was part of main migratory route, 60-70 percent covered, animals will go where they want to. Should target 60-70% vegetation cover.

Q: How much time for clean-up, taking all the buildings down? A: Three to five years. Diavik needs to find a balance between the buildings they can take down and what they will need to accommodate workers while they do the closure work.

Q: After that there will be monitoring? A: yes. First performance monitoring, then long-term monitoring.

Q: will equipment be left at the mine? A: yes, until it is no longer needed.

Diavik asked if the 60-70% revegetation was for active revegetation by the company, or natural revegetation over time.

Q: Timeline for re-vegetation? Is the goal to have it look the way it did before in 100 years or after the closure activities are done? A: Diavik is thinking they will have 100 years to prove they've met vegetation standards. They expect they can demonstrate that a certain planting rate will result in a certain percentage of cover.

- Board sees the site being revegetated to 60-70% throughout the island, including the WRSA.

Q: What if people want the WRSA to be planted with trees and be covered in vegetation? A: Diavik would probably disagree, but it would be up to the regulator to decide.

- Socio-economic agreements still stand in closure; Diavik will be trying to hire Northern Indigenous people to do the re-vegetation work rather than doing it themselves. Could be business opportunities as well.
- Giant Mine and other old mines left YKDFN people with clean-up. Don't want to see this repeated. Need a solid promise.
- Diavik noted that Rio Tinto also wants a success story.
- Diavik should pay close attention to recommendations from Indigenous communities and people.

North Inlet

- Diavik provides background on North Inlet situation. Issue is hydrocarbons in sediments.
- Water Treatment Plant (WTP) will be one of the last things taken down. Want bottom sediment to be safe for fish. Diavik is not required to return the North Inlet to productive fish habitat. If the opportunity is there, they will take it, but not required by DFO. They would like the North Inlet to be re-connected with Lac de Gras.
- Hydrocarbons (HCs) are the issue, spills occur in open pit and underground, water is pumped to North Inlet and accumulates in sediments. There could also be HCs in water going into treatment plant.
- Diavik considered some options for closure: (1) remove all HCs and put them somewhere else; (2) bury them with a cover to prevent fish contact (material is very fluffy so rock cover wouldn't work); (3) bio remediate in right environment (current proposal). Diavik is looking into how long it will take to bioremediate based on recommendation from EMAB. They don't want to dredge sediments; this would make a mess wherever they put them.
- Generally speaking, EMAB prefers the idea of it being isolated from Lac de Gras; a boulder barrier might be too much depending on the water quality.
- Diavik doesn't want a dam; having a dam would mean they would have to actively manage water levels. **Request that Diavik review other methods to passively manage water levels, such as a form of fish ladder.**
- WTP returns sludge, with HC, to NI. How much of the volume goes back to the NI in the sludge? Diavik guesses about 5%. HC management has improved so less going into NI.
- Let top layer exchange with LDG?
- Diavik would like to get water quality to CCME criteria, but would we want to risk connecting with Lac de Gras? The water quality while it would meet CCME criteria, it wouldn't be the same as water in Lac de Gras.

Q: when will Diavik know how natural bioremediation is working? A: will sample next month for bugs that break down HC, to see if they are present. They will report back in September. They will also sample HC in sediment to see if/how levels have changed since last sampling. Literature review shows HC break down as long as temperature is above -12 degrees C. NI sediment is always above this temp.

Q: could Diavik fence the pond to keep caribou away? A: Diavik has focused on fish. Fences can cause problems: wolves use them to hunt caribou and sometimes animals get caught in them.

Q: Potential contaminated runoff from WRSA into NI? A: Diavik will sample. If runoff is contaminated the WTP will stay. Not expecting volume of runoff will have much effect on water levels in NI. Noted that HC's do not affect water quality in the NI, they are only in the sediment.

Hydrocarbon Contaminated Soil

Diavik provides background on hydrocarbon contaminated soil and sets out options proposed. Noted there is no free product in soil. If there is a small volume of soil then it could be practical to remove it from site. Expected cost would be several million dollars.

Q: Is Diavik landfarming? A: not yet and it is not in the current plan. Without knowing the amount of contaminated soil it is difficult to estimate the area and time required to landfarm it. Diavik is open to landfarming.

Q: how would it be buried? A: in the Type 3 rock dump, then covered as for rest of WRSA. Idea is it would be frozen in. Permafrost makes the best liner, it never degrades.

Q: how deep is permafrost? A: about 300 feet.

EMAB is following the general principle of minimum impact. Treat soil as much as possible before burying.

Noted that consensus from yesterday's meeting was that contaminated soil be treated to meet Agricultural standard. If it doesn't meet that it should be shipped offsite.

Diavik noted that it would not be possible to meet the Agricultural standard so Diavik would just ship the contaminated soil offsite.

Disagreement with stated consensus of Board from previous meeting.

Diavik indicated it should start landfarming now so it can demonstrate the levels they will be able to achieve.

Noted that if Diavik doesn't bioremediate then soil should be taken offsite.

BREAK

Closure Objective SW1

- This is a change to the original objective. Proposed by GNWT.
- Diavik provides background. Parameters can exceed AEMP benchmarks in mixing zone. If Diavik has to meet benchmarks in East Island streams it is like there is no mixing zone, so there wouldn't be a mixing zone in Lac de Gras.
- Diavik should demonstrate smallest mixing zone, and have it be protective of environment. Not sure if it is practical or feasible to not have a mixing zone.
- Meeting AEMP benchmarks in streams and lakes will be a problem for Diavik
- Meeting with GNWT clarified their position. Might have been a miscommunication with the WLWB. GNWT would like Diavik to demonstrate that water quality is not acutely toxic to aquatic life in the streams and ponds. However, this needs to be clarified and Diavik does not wish to speak on behalf of GNWT.
- Diavik didn't think they'd meet AEMP benchmarks or be safe for aquatic life in East Island streams dating back to the CSR.

Closure Criteria for SW1 and SW2

- Diavik stated that it has to meet all the objectives, so will have to meet the most stringent criteria regardless.

- Agreed that where criteria in SW1 and SW2 are different, the strictest one would apply.

SSRBCC

- WLWB has not agreed to using SSRBCC yet. Diavik and reviewers have spent a lot of time on them. If they have trouble meeting an AEMP Benchmark, the idea would be they could turn to SSRBCC, but they would have to demonstrate this is needed.
- Diavik would like to get the SSRBCC to a finalized state and address outstanding issues. Less of a time urgency on this.
- Agreed the next step is for EMAB consultant to review revised SSRBCC – likely starting April 8.

Final comments

- Diavik has asked for an extension on the ICRP to December. Original submission deadline was for June. WLWB has not approved this yet.
- Closure is still planned for 2025
- Diavik is hiring more staff for closure

Q: Which people/organizations is Diavik seeing in the communities? A: It is up to the community. Diavik is asking each community to identify who the best group(s) of people to attend would be.

Q: What is happening with the information Diavik collects during this process? A: Diavik will prepare notes that will be compiled in Version 4.1 of the Interim CRP so that people can comment. Would be good to agree on set of notes for this meeting.

Jack moved to adjourn meeting at 11:30 am.

