

Environmental Monitoring Advisory Board

Minutes – April 28th & 29th, 2016

9:00 am - 5:00 pm April 28th

EMAB Boardroom, Yellowknife, NT

Present:

Arnold Enge, <i>Chair</i>	North Slave Metis Alliance
Charlie Catholique, <i>Vice-Chair</i>	Lutsel K'e Dene First Nation
Julian Kanigan, <i>Secretary-Treasurer</i>	Government of the Northwest Territories
Sean Richardson, <i>Director</i>	Tlicho Government
Napoleon Mackenzie, <i>Director</i>	Yellowknives Dene First Nation
Jack Kaniak, <i>Director</i>	Kitikmeot Inuit Association
David Wells, <i>Director Alternate</i>	Diavik Diamond Mines
Gord Macdonald, <i>Director</i>	Diavik Diamond Mines (by phone, Day 1 only)

Staff:

John McCullum, <i>Executive Director</i> (also minutes)	Environmental Monitoring Advisory Board
Allison Rodvang, <i>Environmental Specialist</i> (also minutes)	Environmental Monitoring Advisory Board

Guests:

Karin Clark, Bruno Croft and Dean Cluff, ENR Wildlife Division (Day 1 only)
Tracy Covey, Inspector, Diavik Mine (Day 2 only)
Nathen Richea and Paul Green, ENR Waters (Day 2 only)
Patty Ewaschuk, WLWB (by phone)
Golder – Dan Colton (Day 1 only)
MSES - Abbie Stewart and Petr Komers (by phone, Day 1 only)
Arcadis – Shelagh Montgomery (phone Day 1, in person Day 2), Randy Knapp and Jennifer Kirk (by phone)

1) Call to Order

The Chair called the meeting to order at 9:15 am.
Chair asked for a minute for silent reflection/prayer for members.

2) Approval of Agenda

The Chair opened the floor for amendments to the agenda.

The Executive Director brought up a TK Panel Meeting Invitation at Diavik on May 16. The Chair expressed that since it was the first time the TK Panel is engaging with EMAB that he would attend. The Environmental Specialist will go as well.

Motion: *To approve the April 28 & 29, 2016 agenda.*

Moved by: Sean Richardson

Seconded by: Napoleon Mackenzie.

Motion carried.

3) Conflict of Interest

No conflicts were declared.

Julian Kanigan will be leaving at 11:00 am April 28 and 29, but will be back after lunch.

4) Approval of Minutes

The Board reviewed the minutes of February 4th & 5th, 2016. Noted there was one addition from David Wells.

The Action Items list was reviewed from the kit (see item 4).

Sean is working on a day for several presentations, including EMAB. He and Julian discussed coordinating with presentation of CIMP results in Behchokq; suggested Sean be on planning committee. Jessica Hum is Land Use Planner with Tlicho and contact person on this.

Invite TK Panel to next EMAB Meeting.

Motion: *To approve the Conference Call Minutes for March 31st, 2016 as presented.*

Moved by: Charlie Catholique

Seconded by: Napoleon Mackenzie

Motion carried.

Motion: *To approve the minutes for February 4th & 5th, 2016 as presented.*

Moved by: Julian Kanigan

Seconded by: Sean Richardson

Motion carried.

Postpone Motion to move Conference Call minutes for April 11th; wait until Jack Kaniak is present.

Email motions read into minutes.

Action: Executive Director to check if Chair can vote.

5) Financial Report

Treasurer presented item from kit. Noted the surplus from 2015-16 is about \$60K larger than predicted. Add to budget and consider re-allocating.

Discussion

- Noted some of the surplus is from reports that were budgeted to be reviewed in 2015-16 but were not circulated for review until this year.
- There are a few reports under the closure line that are for approval but were not budgeted for (Site-Specific Risk-Based Closure Criteria and the North Country Rock Pile Final Closure Plan). Suggestion to add \$27K to closure review budget and \$12K to other reviews.
- EMAB could consider hosting a closure workshop for board and community members.
- Noted WLWB may host a SSRBCC workshop.
- EMAB should put more money towards Oversight and Monitoring as that is where the communities expect it to be spent.
- Room to spend more in Communications. Suggested EMAB add a project for a more easily searched database for the website
- Board Member Consultation Honorarium was underspent last year.

Chair suggested the Board wait to approve the budget until after Item 9 since additional reviews may result from that discussion.

6) WMP Review

Diavik Presentation

Discussion

Caribou

- Q: When will the decision be made to reinstate caribou aerial surveys?
- A: Zone of Influence (ZOI) Task Group is looking at the aerial survey program. They are developing criteria for when aerial surveys should be reinstated. Draft Guidelines are expected this year.
 - Noted Diavik is providing funds for geofence collars as a substitute
- Noted 38 ground-based caribou behaviour observations, all more than 30 km from site
 - When community members come in to assist Diavik finds closest caribou
- CIMP project noted – winter range habitat selection models: science and TK were consistent (science data back to 1995)
 - Bathurst caribou appear to prefer areas north of treeline
- Habitat units size? Square kilometers
- ZOI Task Group – Boulanger showed not enough caribou to provide sufficient statistical power to assess ZOI
- Q: when will the task group meet again to propose criteria?
- A: criteria are in the works; possibly during the next year
- Q: Could lack of caribou show mine effect is increasing?
- A: Geofence collars may help assess this
- Be cautious about connecting caribou movements to recent heavy fire seasons or other events. Could be related to herd size. Not necessarily a mine effect.

- Noted that 19 collars were recently deployed bringing total to 50

Grizzly

- No hair snagging since 2013; might start again in 2017
- 77 observations last year
- 12km x 12km is standard grid size for grizzly bear hair snagging program.
- Density is 9-12 grizzly bears per 1000km (2013).
- Q: Why haven't the grizzly bear hair snagging surveys happened every year?
- A: Program's intent is to detect long-term changes; there is a cost-benefit. They are looking for larger effects sizes/changes; around 20%.
- What is a normal fluctuation for grizzly population?
- Bears can be tracked wherever they leave a hair sample; data have been compiled in 2014 Rescan report
- Regional workshop for carnivores will likely be held in the fall this year. Next hair snagging will be discussed then. Andrea Patenaude is the lead.

Wolverine

- Track surveys were done last year; no hair snagging
- 118 incidental observations
- Relocated wolverines are marked with paint to distinguish individuals.
- Next comprehensive analysis will be 2017; wolverine snagging data is reported by ENR

Raptors

- Surveys are continuing – every five years; next is 2020
- Pit walls were surveyed this year

Waste Management

- 2015 – 136 inspections; WTA – 43% saw sign; 14.7% had observations
 - Landfill – 25% saw sign; 7% had observations
- 2014 – 113 inspections; WTA – 50 saw sign (44%); 39 had observations (35%)
 - Land fill – 19 saw sign (17%); 8 had observations (7%)

Discussion with MSES

Caribou

- ZOI is larger than predicted
- Migration is slightly different
- Would like to know how WMP results affect Diavik management & regional management
- Actual effect on caribou is greater than predicted but there is no clear management response

Action Item: EMAB to pull together notes/reports of ZOI Task Group and Regional Wildlife Workshops and provide to MSES

- Noted that discussions at regional workshops largely focus on regional studies
- Noted that ground-based behavioural studies were supposed to provide management insight; not really getting any strong data
- Any plans to test specific ZOI mechanisms: dust, smell, sight of mine, noise
- Lack of caribou at Diavik makes it difficult to test
 - Had been plans for Diavik to observations far from the mine and Ekati doing observations closer; Ekati used cameras but that didn't work very well.

- Comment MSES: Diavik should reference external reports that affect methods or timing of monitoring programs.

Action Item: EMAB to provide 2014 Rescan grizzly report to MSES

LUNCH

6) WMP Review Cont.

Jack arrives and Julian returns

Board reviewed recommendations from MSES Review of 2015 WMP Report.

Discussion

Many of MSES comments were dated and/or confusing.

Actions:

- 1) Reports to MSES as noted in previous actions: MSES to update their comments and recommendations based on new information and Rescan study. Review revised report.
- 2) Send revised MSES report to Diavik and ENR for comment; request recommendations on 2015 WMP from ENR, also request timing of next ZOI Task Group (for criteria), and Regional Wildlife Working Group meeting (for bear study timing).
- 3) Keep MSES updated on workshops to keep informed of current and developing issues.
- 4) Invite ENR to attend EMAB and discuss regional wildlife monitoring results

Note: Diavik offers that MSES can contact Golder with WMP questions rather than include them in review.

7) AQMP Workshop Follow-up

Item presented from kit.

Noted that CIMP is sponsoring a study to combine TK & science by following Bathurst caribou for 2 weeks this summer.

Action: EMAB request presentation on results of Tlicho caribou study. Petr Jacobson is contact person.

Action: EMAB to respond to report recommendations as possible. Where EMAB needs more information or cannot answer, forward recommendations from workshop to Diavik requesting information or a response. Note that the recommendations were from workshop participants and EMAB is aware some are not directly within mandate of EA.

Action: Ask Diavik and DOT if they have regulations or rules for having tanker trucks cleaned before travelling on ice road. If not, make recommendation to Department of Transportation.

Action: Share report with Andrea Patenaude and Karin Clark of ENR, Wildlife Division on concerns from workshop about caribou. They can then address what joint studies are being done now.

Noted that any new rules regarding equipment to protect air quality or cleaning of trucks should apply equally to other operators throughout the NWT.
Forward recommendation to test small animals for contamination/disease to Diavik

10) A21 Response Plan

David Wells presented Diavik's A21 Response Plan

Board decided not to review or respond to A21 Construction Environmental Management Plan

11) Diavik Letter to Minister regarding Inspector's TSS Directive

Item presented from kit.

Discussed that the letter only impacts the Inspector's direction. Diavik still has to operate within the Water Licence.

Presently, no action required.

BREAK

8) Closure Presentation

Gord Macdonald presented by phone.

Arcadis: Randy Knapp (phone), Jennifer Kirk (phone) and Shelagh Montgomery (phone)

WLWB: Patty Ewaschuk (phone)

ENR Lands: Tracey Covey

Gord presents PowerPoint provided to board.

Q: why are "for approval" reports included in ICRP Progress Reports

A: this was intended; allows progress between new versions of ICRP

Gord notes key sections of NCRP – see slides

Notes RECLAIM amount decreases; larges due to decrease in unit cost for rock cover

Q: location of waste rock pile for A21

A: just concepts right now. Note A21 is all Type 1 rock, so no PAG issues.

Q: why does there seem to be a rush to approve the final plan for NCRP with a completely revised plan coming in October 2016

A: Diavik want to start on NCRP by Jan 2017 – likely ICRP version 4 will not be approved by then

Q: Why are there no costs for revegetation in the RECLAIM model when studies on revegetation have been going on since 2004? Where does Diavik propose to revegetate

A: Roads and laydown will be revegetated; the question is what method will be used. Some nominal costs in RECLAIM

TK Panel recommended caribou trails with till cover. Construction drawings of the NCRP do not show till placement on the trails or ramps.

Diavik not planning to place till on ramps; the sloping is designed to make caribou passage easiest on the trails.

Q: noted that Diavik plans for 7 years of monitoring and maintenance during the closure period. Who is responsible for long term care after this period?

Noted that Diavik's closure plan is not a walk-away solution – particularly the PKC. You can't leave an active spillway and ditches that could glaciare without funds for long-term monitoring, and care and maintenance.

A: Diavik expects sign off on closure by 2030. They don't expect the dams and spillways will need further maintenance.

Noted that somebody will have to monitor, and possibly maintain any site with active tailings and a spillway.

Q: the closure plan calls for 1.5 m of till and 3 m of waste rock over Type 3 rock, which includes PKC North Dam. The PKC cover is not visible on the design drawings and is not in the RECLAIM estimate.

A: the cover will extend over the PKC North Dam and is included in the NCRP component in RECLAIM

Q: Has Diavik responded to TK Panel request to consider use of coarse PK on caribou trails?

A: No, Diavik has not responded to this request from the TK Panel.

Adjourned for the day

Meeting reconvened at 9 am on April 29th, 2016

Present: Arnold, Charlie, Julian, Napoleon, Jack, Sean, David

Arcadis: Randy Knapp (phone), Jennifer Kirk (phone) and Shelagh Montgomery

WLWB: Patty Ewaschuk (phone)

ENR Water: Nathen Richea and Paul Green

ENR Lands: Tracey Covey

9) Closure Review Discussion

Chair passes floor to Shelagh from Arcadis

Randy Knapp presented review of the Waste Rock Management Plan, 2015 ICRP Progress Report
WRMP

- EMAB should request that Diavik explain why they used Type III rock in A21 buttress, and a statement that it won't have an impact.
- The WRMP does not explain where the rest of the Type 3 rock will be placed
- Randy was concerned that cost of cover for Type III rock in PKC North Dam was not included in RECLAIM model. Gord assured Thursday, April 28th that it is in model under NCRP.

- Noted that with the proposed cover Diavik's model shows the till layer will stay frozen for 100 years.

Action Item: request confirmation in writing from Diavik about the cover for the PKC North Dam

ICRP Progress Report

Randy noted that the ICRP is a very impressive closure document; work done is beyond almost any other closure document for any mine in the world. However it does leave a few questions.

- Doesn't provide a 3D view of property post-closure; this would be very helpful.
- Diavik has not fully addressed its plan for the PKC; a bowl of fine PK with a water cover
 - Noted the material is not very toxic
- The original PKC closure design was a dome covering – this would have been a walk-away solution. Current plan is not a walk-away solution.
 - The spillway could plug – this happened at Nanisivik and caused a catastrophic failure
 - It needs to be checked annually or bi-annually, ideally at freshet
 - There are many remote methods for checking
 - Noted that if there was a blockage, equipment would be needed to clear it
 - This is a concern
- Disappointed that Diavik has made minimal commitment to revegetation
 - More money spent on revegetation research than budgeted to do it
 - Discussions with TK Panel show many revegetation ideas
 - Noted that the Panel does not want to attract animals to the site
 - Seem to be mixed messages; Panel would like site to be as similar as possible to pre-development
 - The current closure design for the NCRP would not allow revegetation
- If the TK Panel wishes fine material be placed on the NCRP to protect caribou hooves, EMAB should address this issue.
 - Diavik has not responded to this request from the TK Panel, but have not said they will not consider it.
- Q: is there an issue using PK as a reclamation material?
- A: Coarse PK beaches at Ekati will be revegetated; likely not a significant issue
- Q: what about use of PK outside the containment area
- A: this would have to be assessed

Randy noted issues on long-term monitoring were raised on Thursday

Conclusion

- This is a good closure plan; several things need to be clarified
- EMAB will have to push in order for any changes to be made

Discussion

- Q: How can we be sure the cover on Type 3 will prevent acid run-off
- A: Diavik model shows thawing to about 7 m with no cover; this would result in elevated metals in runoff
 - With 1.5 m of till and 3 m of waste rock, till would remain frozen
- Q: Did Diavik model with an unfrozen pile?

- A: no. This could be done. If till was thawed, water would likely penetrate and get into the Type 3 rock
- Noted that CIMP will run a project to extend northern climate scenarios out to 300 years
- Much of the till will come from A21.

Review of NCRP Closure Plan

- For rock and till aesthetics, criteria are to build as per design; criteria doesn't match objective
- Same with topography and vegetation aesthetics
- Water quality criteria rely heavily on the SSRBCC criteria

SSRBCC Review

Jennifer Kirk had not started on review, but asked if there were preliminary questions about site-specific risk-based closure criteria (SSRBCC).

Q: In a more sensitive environment like Lac de Gras, would SSRBCC be more stringent than generic environmental quality guidelines?

A: At this point, it is too early to say.

Randy noted that in general SSRBCC are developed to loosen standards, not tighten

Board Discussion

- EMAB should review TK Panel recommendations to see which they would like to endorse for ICRP Version 4.
- EMAB provide comment that 1 inch till be placed on caribou ramps on NCRP.
- EMAB ensure costs for cover of North Dam of PKC be included in RECLAIM model.
- Board expressed mixed views from communities about re-vegetation at Diavik. Reasons not to re-vegetate include: site should be left to naturally re-establish, and no native seeds available meaning there is a higher risk for introduced species. If Diavik re-vegetates the site, it should be done in a way that matches the natural landscape (south facing vegetation).
- Ramps should be built so caribou can't hurt themselves

Action Item: check specs for size of rock on caribou trails

12) Inspector's Report

GNWT Lands Inspector Tracey Covey presented.

- Described the equipment that will be used for A21 turbidity barrier.
- As snow melts, spills from winter are starting to show; Diavik has records of all spill locations for spring clean-up.

9) ICRP Closure Discussion cont.

- Re-vegetation should not cover everything.
- Executive Director presented idea of having a second review of Diavik's Closure Objectives and Criteria. General agreement from Board to proceed with a second review.
- Issue brought up by TK Panel regarding A418 cliff was not of concern.

Action: Email motion to approve Scope of Work from Slater Environmental to review Diavik Closure Objectives and Closure Criteria.

Action: Request GNWT Waters give presentation on RECLAIM model to EMAB.

5) Cont'd

Action: revise budget as per discussions and circulate for approval by email motion:

- **Report reviews**
- **Closure workshop**
- **Closure criteria review**
- **Website database improvement**

13) Board Member Updates and Community Concerns

Napoleon Mackenzie – YKDFN

- Has a Chief and Council meeting once a month
- Community hunts of caribou stopped until 2019

Sean Richardson – Tlicho Government

- Acknowledged Jack's concerns that care and maintenance go beyond seven years.
- Community is concerned with breaching the pit dikes at closure.

Jack Kaniak – KIA

- David Wells to follow up on getting Jack agreement between Diavik and KIA.
- Participated in EMAB conference calls and email motions.
- In the process of arranging Community Update with EMAB staff for May 4th.

Charlie Catholique – LKDFN

- Community is concerned that they are unable to hunt for caribou.
- Wildlife manager office moved; number 867.370.7012

Arnold – NSMA

- No news specific to Diavik.
- Metis now have equal rights under the federal government.

David Wells – Diavik

- Environmental staff are beginning sampling at outlet of LdG.
- Completed snow core survey and wolverine track surveys. Community assistant for wolverine track surveys.
- Getting ready to start at A21; less ice than usual

Allison Rodvang – EMAB Staff

- Website updates
- Reviewing closure documents
- 2014-2015 Annual Report printed
- Working on draft text for 2015-2016 Annual Report

John McCullum – EMAB Staff

Action: ED to discuss budget with Secretary-Treasurer. Email motion to approve budget.

Adjournment 12:20.

Next Meeting: June 23-24