Index for Attachments to the Information Request-ORS Comments for DDMI's Depositing Processed Kimberlite in Pits and Underground (EA1819-01) (Part 2 of 3)

Table of Contents

PR#85

Appendix G

Response to Session #7 Recommendations Presentation

Diavik Diamond Mines

Diavik Response to TK Panel Session 7 Recommendations
TK/IQ Panel – December 2015

Response to Session 7 – Plants & Re-vegetation

Supported

- Further discussion on caribou deterrent methods & tools for animals approach East Island (7.3, 7.8)
- Caribou/wildlife ramp across the rock pile with smooth boulders at the bottom (7.5)
- Protecting natural vegetation left on the mine site, except where beneficial for wildlife safety (7.1)
- Study vegetation north and east of the island (7.2)
- Test plants for toxicity (7.4)
- Slopes on side of the road similar to test pile (7.9)
- Use natures quote to guide plant selection (7.11)
- Vegetation map produced by Panel to be used for further discussions with communities and Panel (7.15)
- Use old maps of migration routes to determine best travel corridors (7.16)
- Rock pile slopes similar to test piles (7.9)
- Literature review on TK of plants for LDG region (7.13)
- TK Panel informally share results with elders in their community (7.19)
- 1 female and 1 male on Panel; youth participation (7.20, 7.21)
- Sharing results of the Panel with government and other industries (7.22)

Response to Session 7 – Plants & Re-vegetation

Modify

- Fine crush rock, similar to the airstrip, on passage and road ways (7.6, 7.9)
  - Positive feedback from Panel on rock on the side of the test pile; suggest this is the appropriate material to use
- Create a barrier between the (NC) rock pile and the PKC (7.7)
  - Natural rock dump may not be good enough to prevent caribou movement between the two areas; need to investigate options how best to do this
- Womens session on vegetation (7.17)
  - Preference is to incorporate women into every program/meeting, along with men and youth, and using break out sessions to share information, rather than holding women-specific programs
- TK Panel to meet 2 times per year (7.18)
  - Committed to the Panel; number not as important as having the right information to share and the right topics/timing to apply to the closure plan

Response to Session 7 – Plants & Re-vegetation

Unsupported

- Use tundra mats to re-vegetate areas (7.10)
  - Requires access to an area planned to be disturbed (to take "tundra mats") while at the same time having areas available that require re-vegetation.

- Not using treated human sewage as fertilizer (7.12)
  - Diavik is interested in using treated human sewage waste as fertilizer for the first couple of years of reclamation, given that it is available on site and considered safe to use from a health perspective.

Appendix H

TK Panel Water Quality Presentation

Diavik Diamond Mines

Post-Closure Water Management and Quality Monitoring
TK Panel Discussion – December 2015

Post-closure Water Management and Quality Monitoring

Content

What does Diavik do now to monitor water quality?

- AEMP & SNP Overview

What will the different areas of site look like at closure?

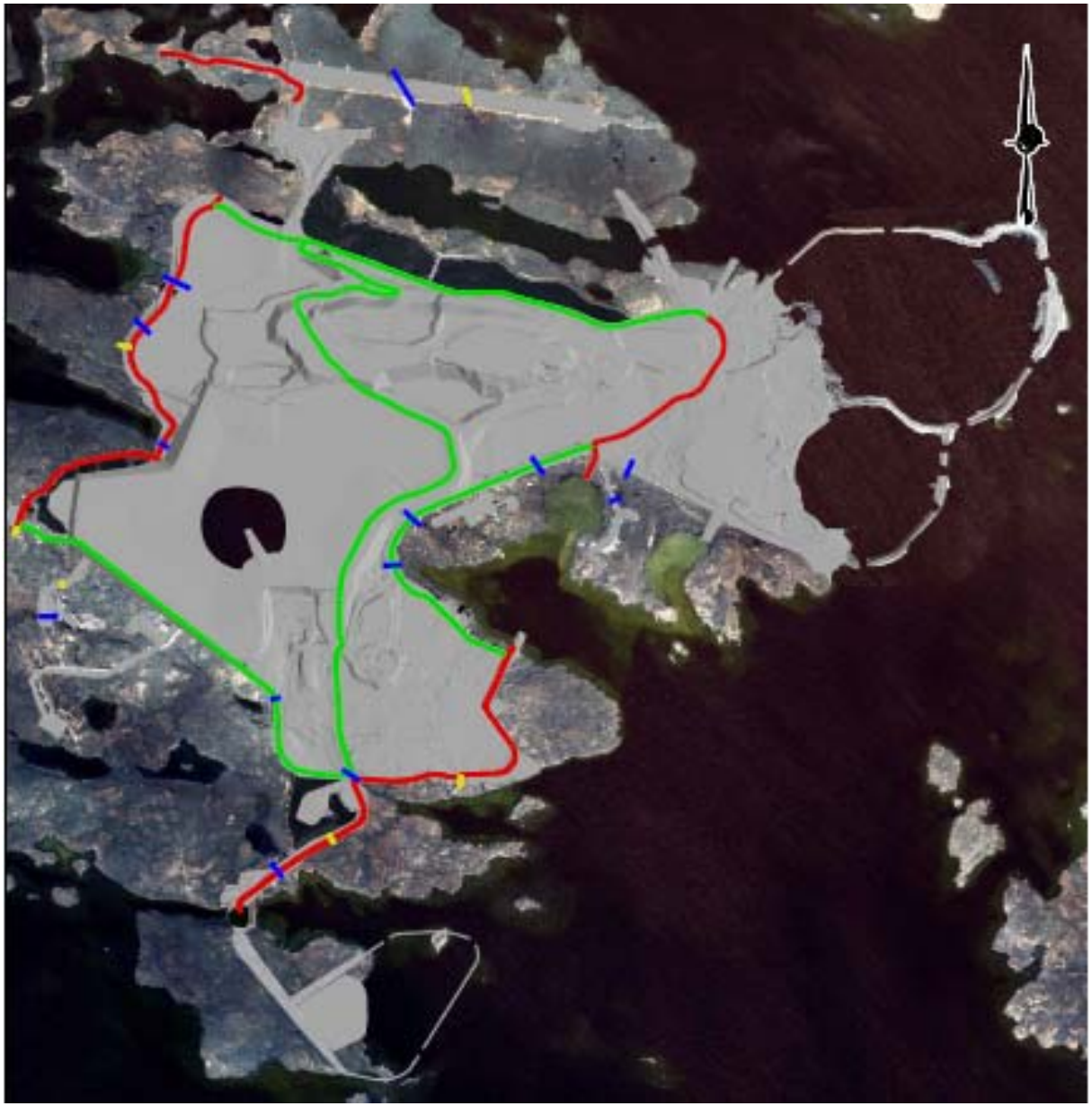
- Drainage patterns and holding areas
- What does Diavik plan to monitor?

Key Questions for the Panel

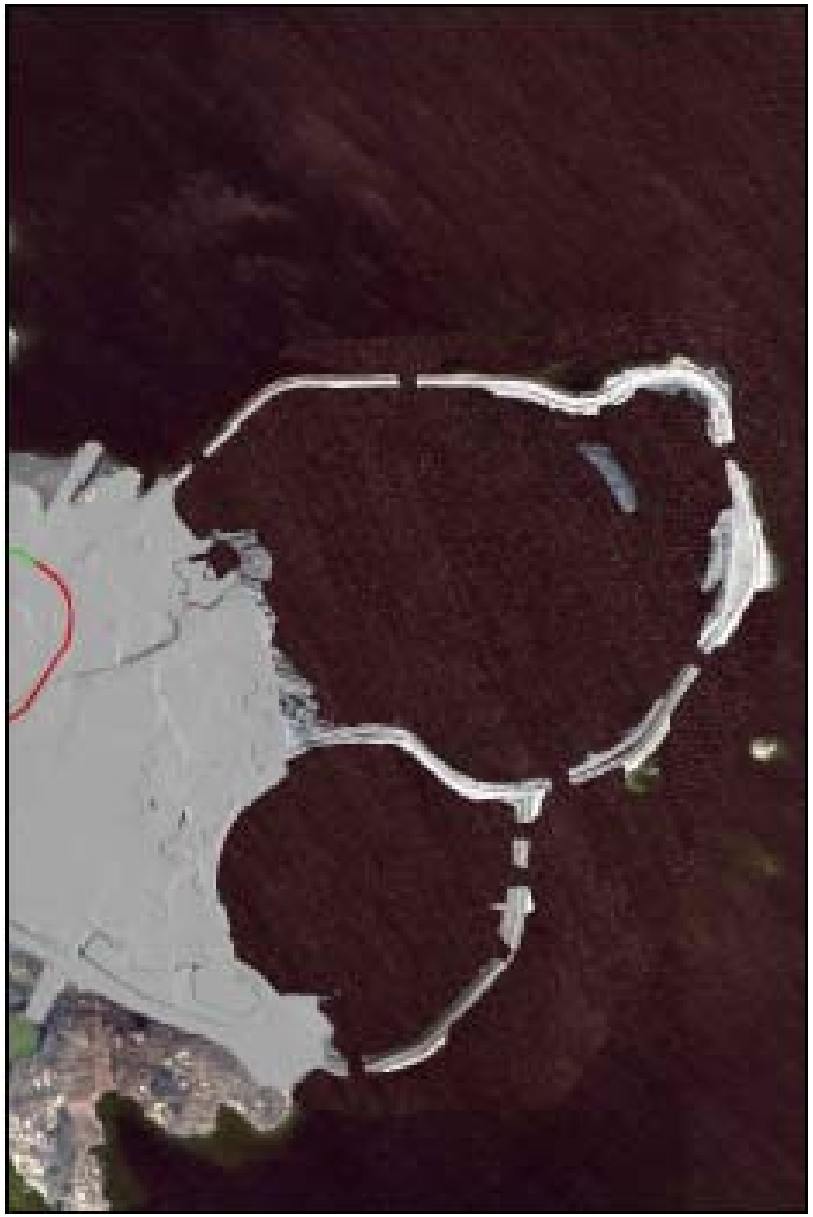
What do we do now? AEMP

What do we do now? SNP

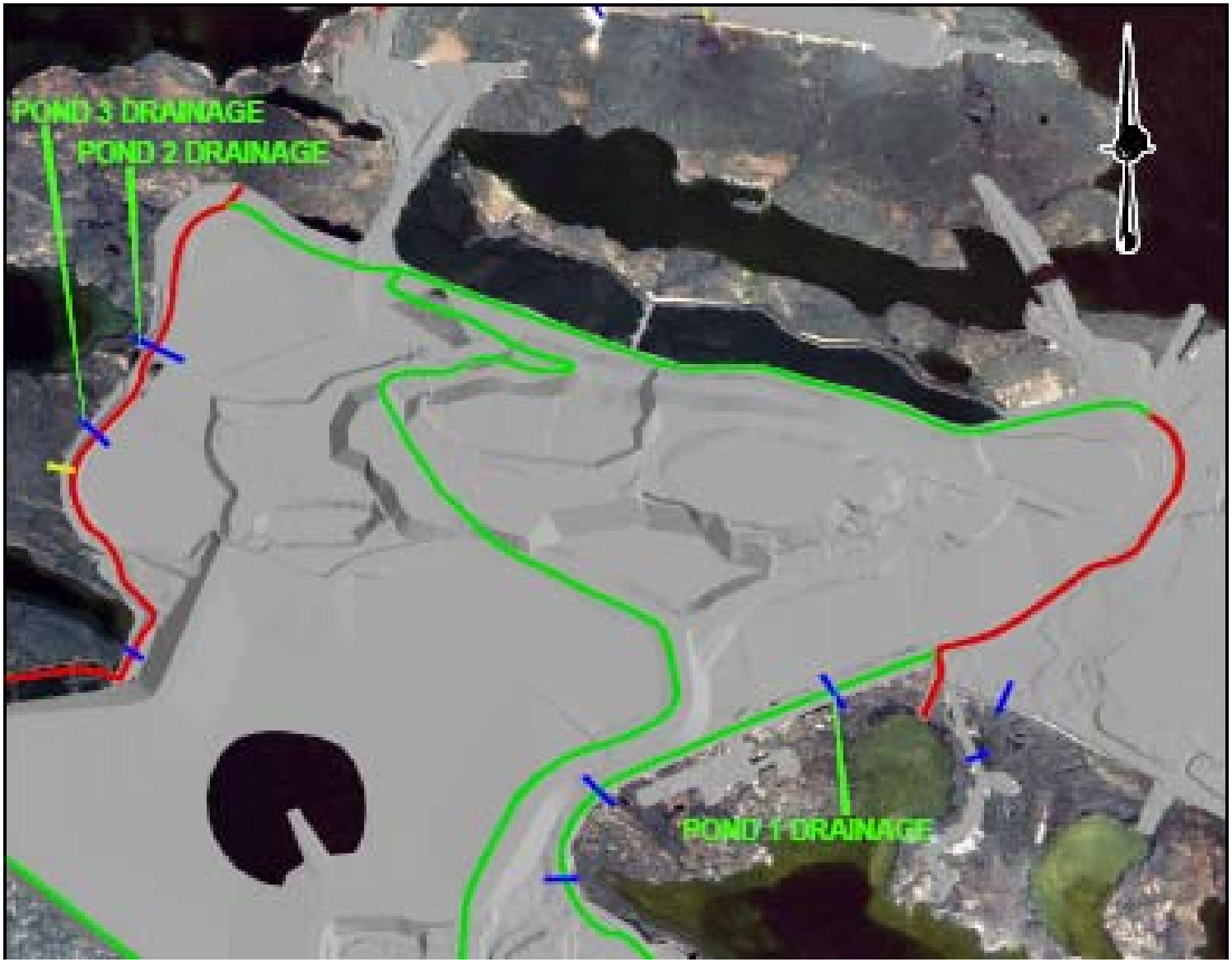
What will it look like at closure? Mine Site



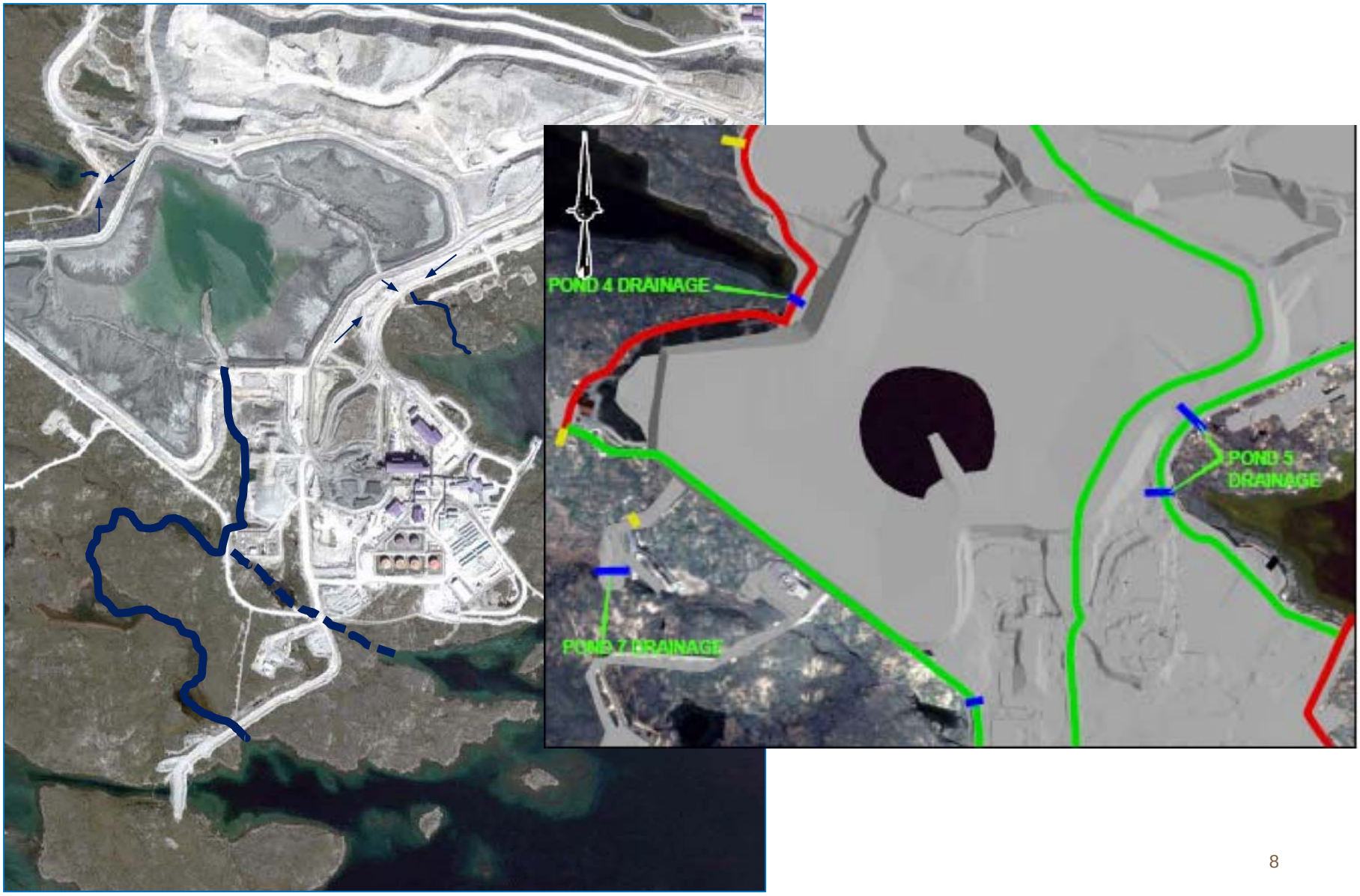
What will it look like at closure?



What will it look like at closure? NCRP



What will it look like at closure? PKC



What will it look like at closure? North Inlet

Closure WQ – Requested Input from TK Panel

1. What areas would you want to sample, and why? (e.g. migration routes, caribou crossings, ponds, etc.)
2. Would you want to do any type of TK monitoring of WQ on the island?
3. Are there features that would help clean/heal water draining from the land?

Appendix I

TK Panel Fish Habitat Presentation

Diavik Diamond Mines

Open Pit Closure - Fish Habitat & Shoreline Construction
TK Panel Discussion – December 2015

Open Pit Closure and Fish Habitat Construction

Content

What do the open pits look like now?

- A154 & A418

What did the open pits look like before?

  - A154 & A418

What will the open pits look like at closure?

Reef Building – what does it look like so far?

Key Questions for the Panel

A154 & A418 – What do they look like now?

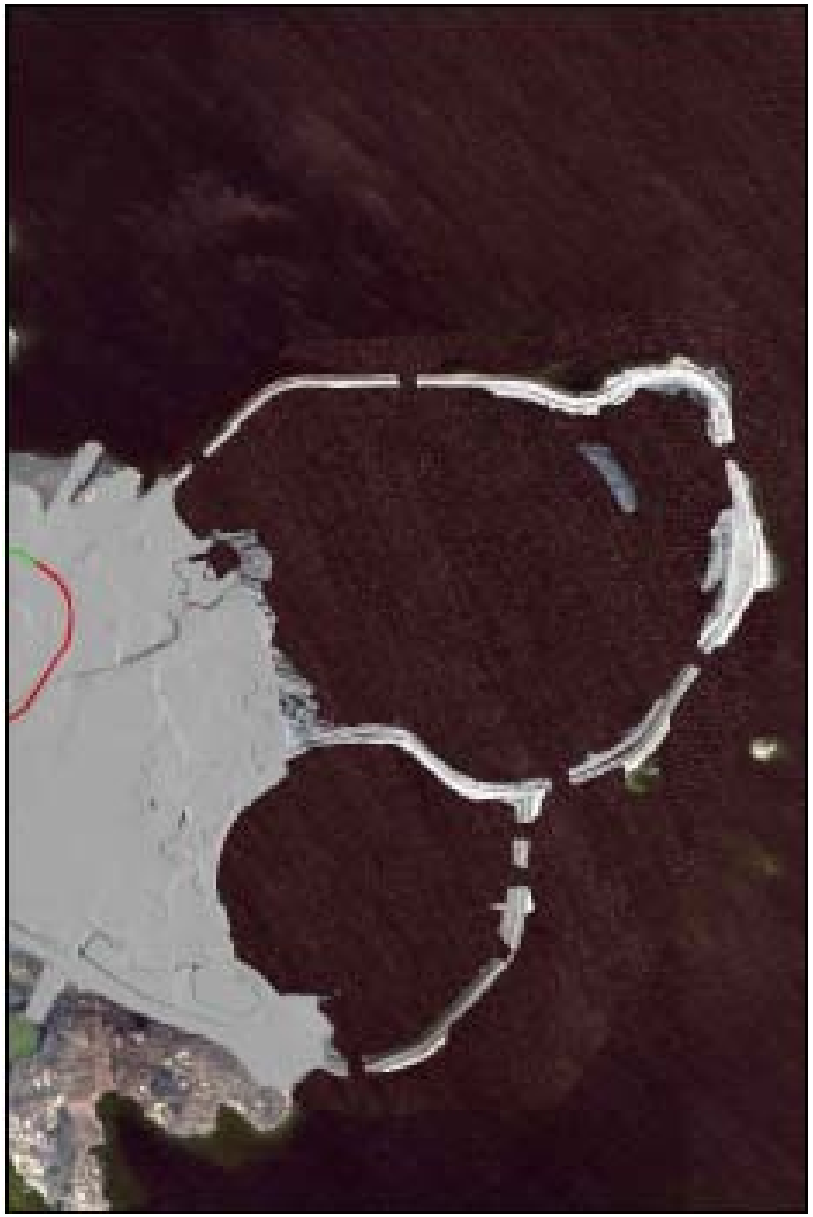
A154 & A418 – What did they used to look like?

A154 & A418 – What did they used to look like?

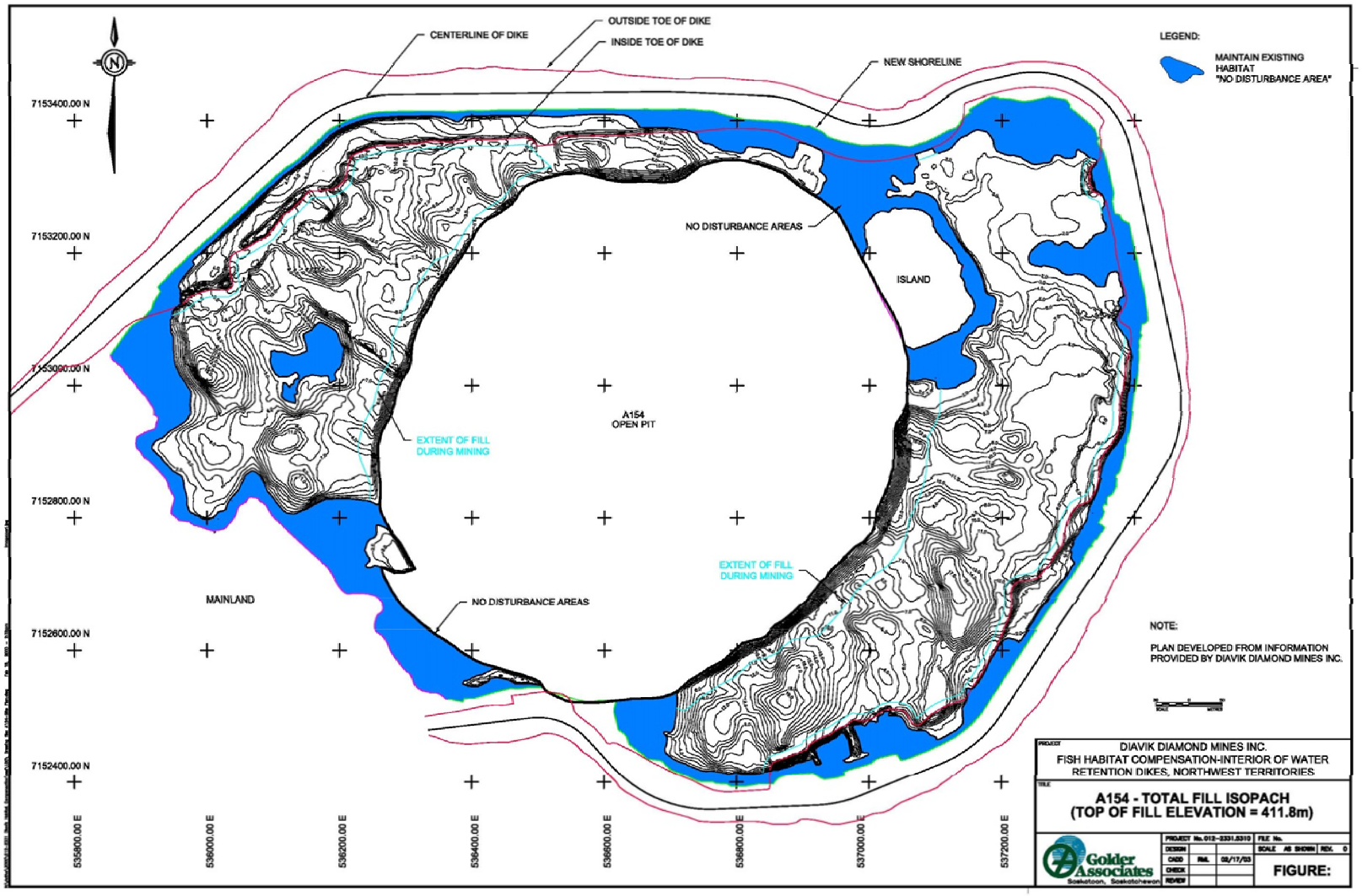
A154 & A418 – What did they used to look like?

A154 & A418 – What did they used to look like?

What will the open pits look like at closure?



A154 Design


CENTERLINE OF DIKE
OUTSIDE TOE OF DIKE
INSIDE TOE OF DIKE
NEW SHORELINE
LEGEND:
MAINTAIN EXISTING HABITAT "NO DISTURBANCE AREA"
NO DISTURBANCE AREAS
ISLAND
A154 OPEN PIT
EXTENT OF FILL DURING MINING
EXTENT OF FILL DURING MINING
MAINLAND
NO DISTURBANCE AREAS
NOTE:
PLAN DEVELOPED FROM INFORMATION PROVIDED BY DIAVIK DIAMOND MINES INC.
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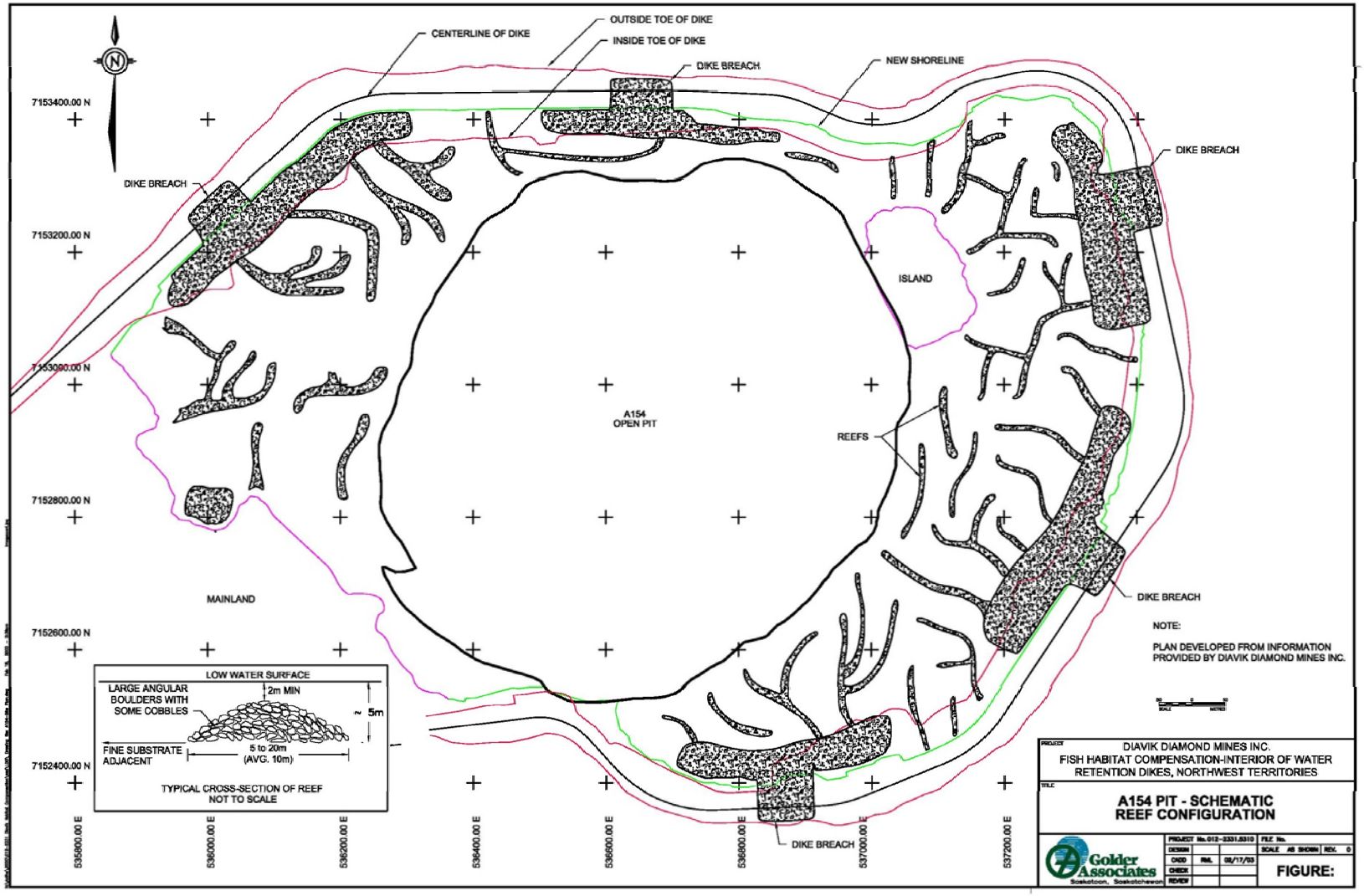
DIAVIK DIAMOND MINES INC.
FISH HABITAT COMPENSATION-INTERIOR OF WATER RETENTION DIKES, NORTHWEST TERRITORIES
A154 - TOTAL FILL ISOPACH
(TOP OF FILL ELEVATION = 411.8m)
Golder Associates
Saskatoon, Saskatchewan
FIGURE:

A154 Design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DIKE BREACH
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ISLAND
A154
OPEN PIT
REEFS
MAINLAND
DIKE BREACH
NOTE:
PLAN DEVELOPED FROM INFORMATION
PROVIDED BY DIAVIK DIAMOND MINES INC.
LOW WATER SURFACE
LARGE ANGULAR
BOULDERS WITH
SOME COBBLES
2m MIN
~ 5m
FINE SUBSTRATE
ADJACENT
5 to 20m
(AVG. 10m)
TYPICAL CROSS-SECTION OF REEF
NOT TO SCALE
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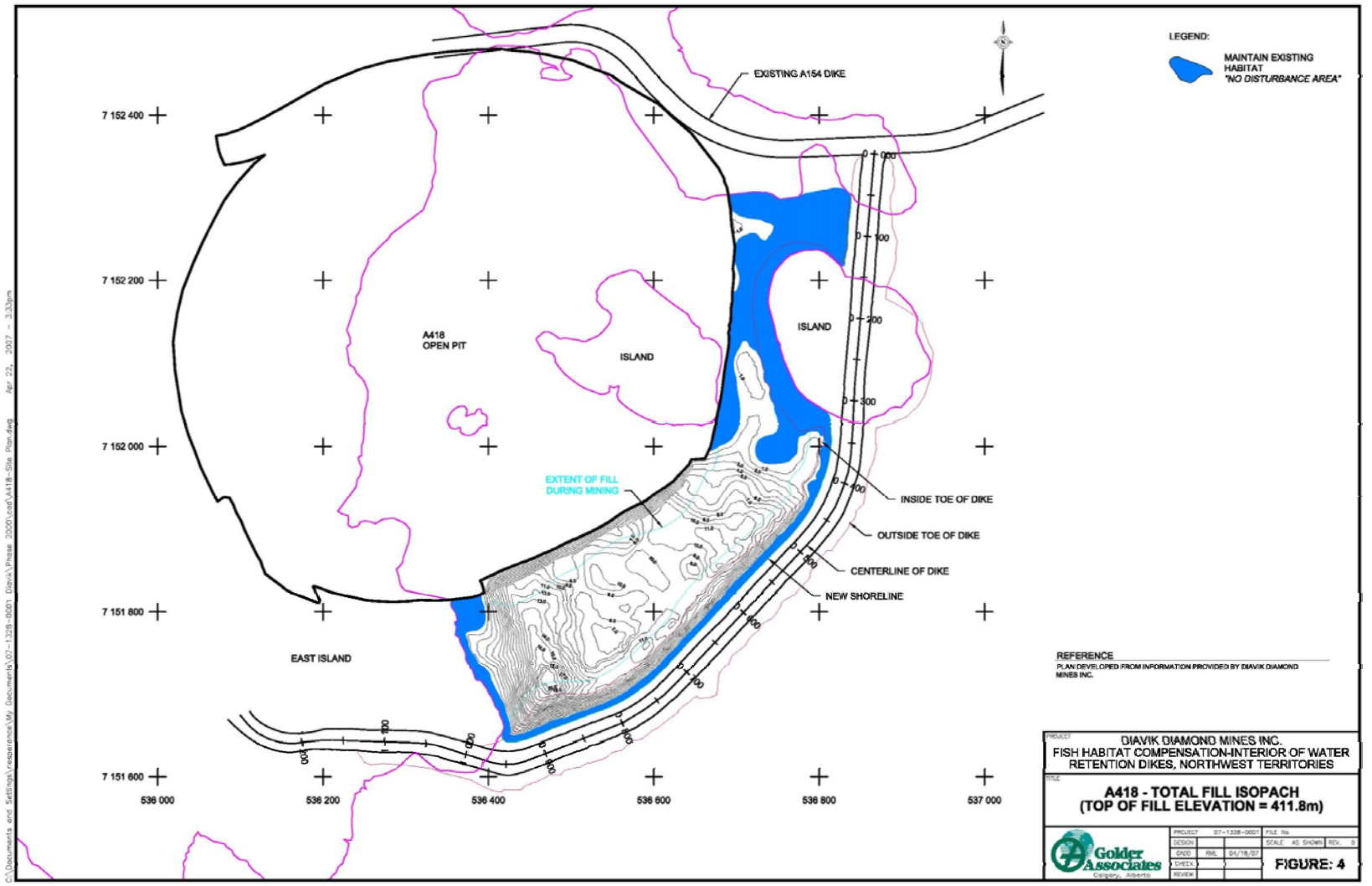
DIKE BREACH
DIAVIK DIAMOND MINES INC.
FISH HABITAT COMPENSATION-INTERIOR OF WATER
RETENTION DIKES, NORTHWEST TERRITORIES
A154 PIT - SCHEMATIC
REEF CONFIGURATION
Golder Associates
Saskatoon, Saskatchewan
FIGURE:

A418 Design


LEGEND:
MAINTAIN EXISTING HABITAT
"NO DISTURBANCE AREA"
EXISTING A154 DIKE
A418 OPEN PIT
ISLAND
ISLAND
EAST ISLAND
EXTENT OF FILL DURING MINING
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OUTSIDE TOE OF DIKE
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NEW SHORELINE
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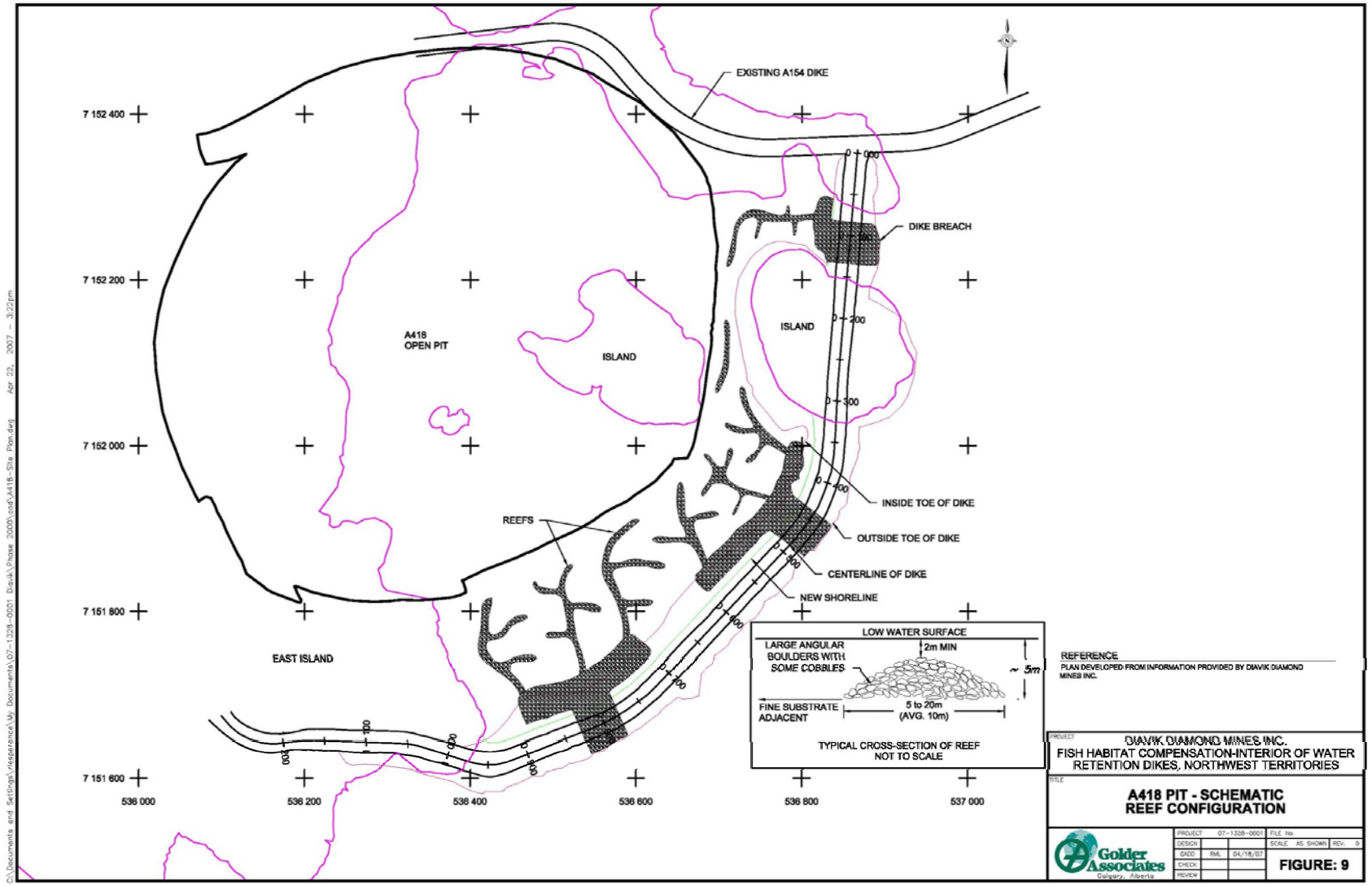
REFERENCE
PLAN DEVELOPED FROM INFORMATION PROVIDED BY DIAVIK DIAMOND MINES INC.
DIAVIK DIAMOND MINES INC.
FISH HABITAT COMPENSATION-INTERIOR OF WATER RETENTION DIKES, NORTHWEST TERRITORIES
A418 - TOTAL FILL ISOPACH
(TOP OF FILL ELEVATION = 411.8m)
Golder Associates
Calgary, Alberta
FIGURE: 4

A418 Design


EXISTING A154 DIKE
DIKE BREACH
A418
OPEN PIT
ISLAND
ISLAND
EAST ISLAND
REEFS
INSIDE TOE OF DIKE
OUTSIDE TOE OF DIKE
CENTERLINE OF DIKE
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7 151 600
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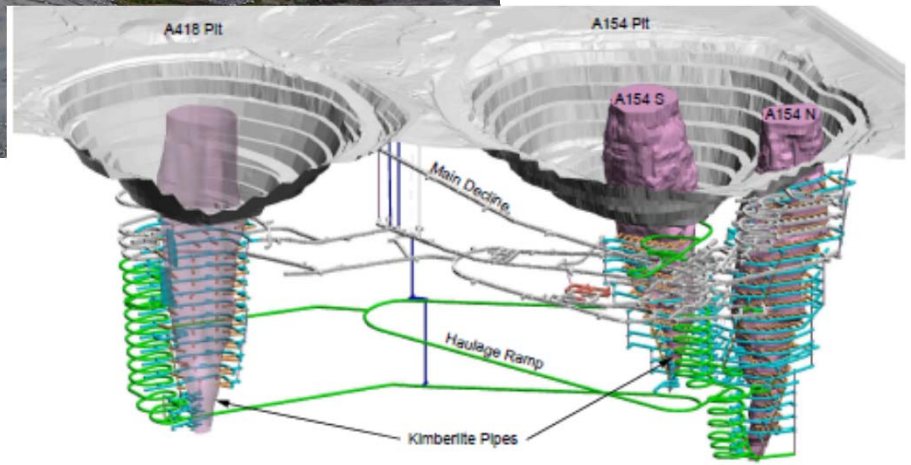
536 200
536 400
536 600
536 800
537 000
LOW WATER SURFACE
LARGE ANGULAR BOULDERS WITH SOME COBBLES
2m MIN
~ 5m
FINE SUBSTRATE ADJACENT
5 to 20m (AVG. 10m)
TYPICAL CROSS-SECTION OF REEF
NOT TO SCALE
REFERENCE
PLAN DEVELOPED FROM INFORMATION PROVIDED BY DIAVIK DIAMOND MINES INC.
DIAVIK DIAMOND MINES INC.
FISH HABITAT COMPENSATION-INTERIOR OF WATER RETENTION DIKES, NORTHWEST TERRITORIES
A418 PIT - SCHEMATIC REEF CONFIGURATION
Golder Associates
Calgary, Alberta
FIGURE: 9

What will be underneath the water?



Pit Wall Washing

Results suggest that for all scenarios, Lac de Gras water quality dominates the overall pit water quality

Dry (pre-rinse)

Wet (post-rinse)

Where?

Building a reef base

Questions for the Panel

Reefs:

– What are the best shapes for shoals?

– How close/far from land are they ideally located?

– What size of rocks are they made of?

– How big are they?

– Are/how are reefs connected?

– How deep should they be?

Shoreline:

- What should it look like?

- Safe access for wildlife?

Appendix J

Fisheries and Oceans Canada Presentation

Artificial Reefs as Offsetting in the North

Julie Marentette

Fisheries and Oceans Canada

TK Panel Meeting, December 3, 2015

Image credit J. Fitzsimons

Outline

- DFO – Fisheries Protection Program
  - Mandate, legislation, policy
- Offsetting Measures
- Artificial Reefs
  - Use in the South and North
  - Characteristics
  - Monitoring
- Examples from the North
- Questions at the end

DFO's Fisheries Protection Program - Mandate

The **mandate** of the Fisheries Protection Program is to maintain the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries.

Legislation and Policy

- ***Fisheries Act***
  - Section 35
    - Prohibits *serious harm to fish*
    - Allows for Authorization of impacts with conditions, including *offsetting*
- ***Species at Risk Act***
- **Fisheries Protection Policy Statement** (2013)
  - Guidance on implementing the fisheries protection provisions of *Fisheries Act*
- **Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting** (2013)
  - Guidance on measures to offset *serious harm to fish*

Offsetting Measures

- Projects designed to counterbalance unavoidable *serious harm to fish*
- Goal: maintain or improve the productivity of the commercial, recreational and Aboriginal fishery.
- Can take a variety of forms.
- An enforceable condition of Authorization.

Artificial Reefs

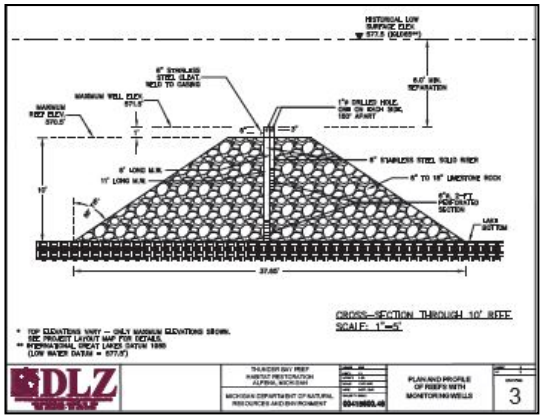
Built-up areas of coarse substrate

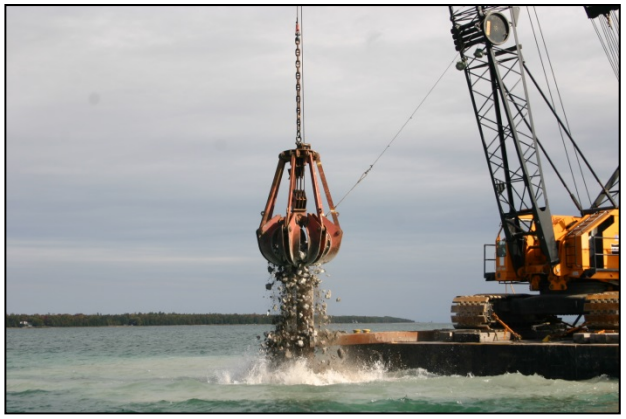
Oak Creek Power Plant (Lake Michigan) – image credit Chris Houghton

Artificial Reefs in the South

Used in Laurentian Great Lakes since 1980's

Lake Trout, Whitefish (spawning habitat is limited)

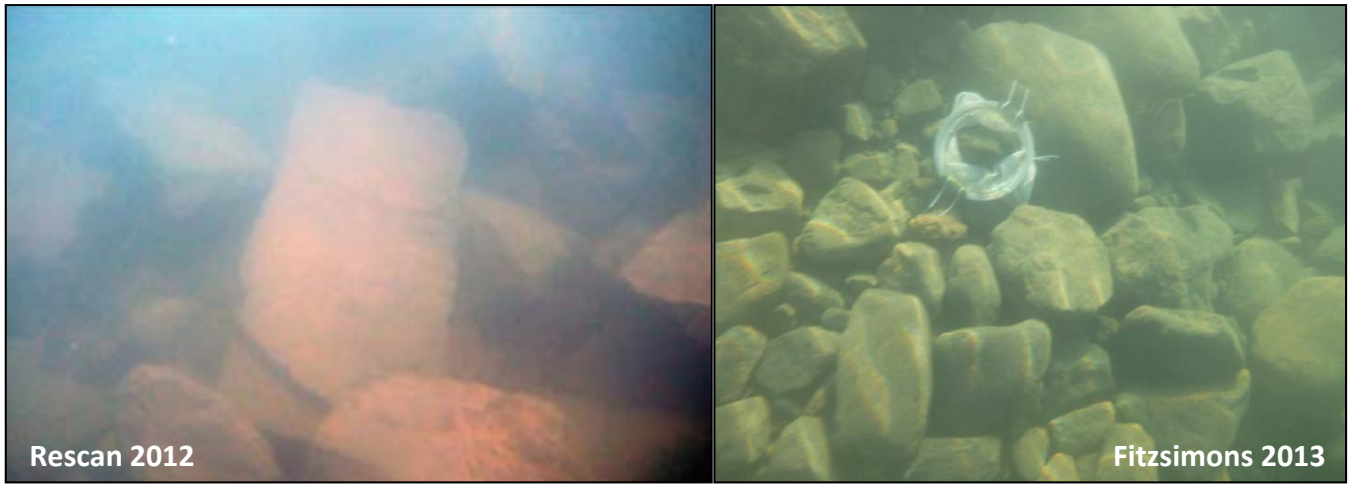




Thunder Bay, Michigan, USA (Lake Huron)
http://www.uvm.edu/rsenr/thunderbay/index.html

Artificial Reef Use in the North

Reefs have been used for offsetting for impacts to fish habitat in freshwater lakes and the marine environment.

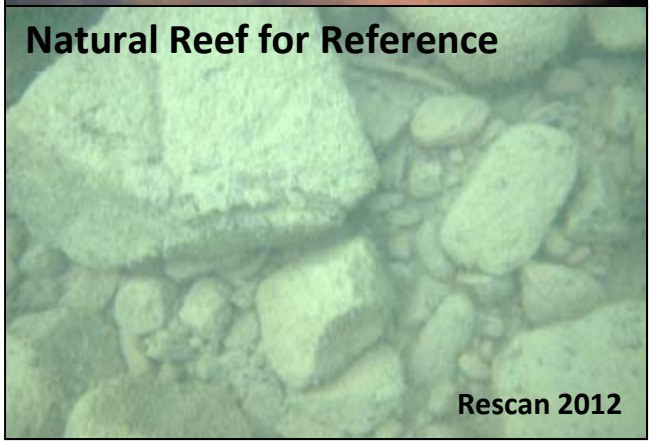


Snap Lake, Jericho, Doris North: Reefs range in size from 100 m^2 to >1000 m^2

Also approved for Diavik, Gahcho Kué and Meadowbank (post-closure)

Desireable Characteristics of Reefs

- Clean, non acid-generating rock
  - Rocks tend to be more similar in size than natural reefs
- Stable, no slumping
- Lots of gaps
  - Shelter for eggs and young fish



Characteristics of Spawning Reefs

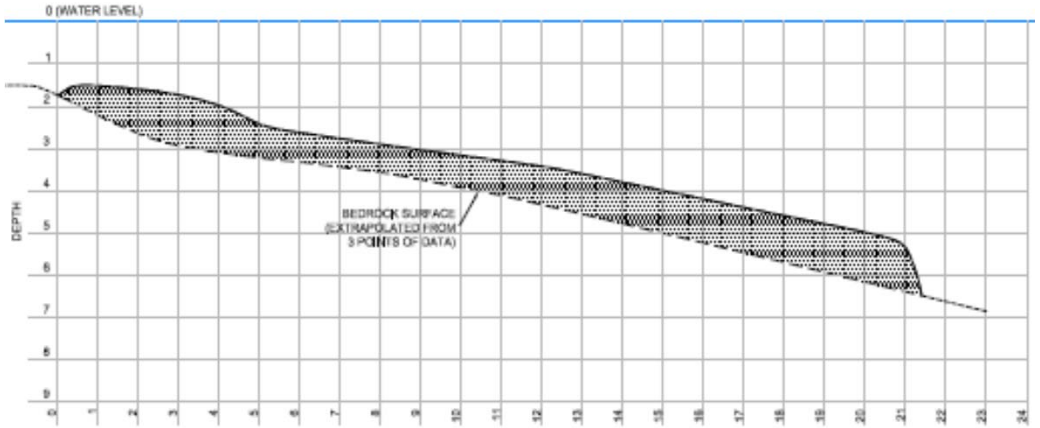
- Deeper than ice (generally >2 m)
  - Fall spawners
- Cobbles and boulders, no fine substrate
  - Lake Trout
  - Whitefish/Cisco can also use smaller gravel/sand
- Some wind-wave action
  - slope

Fitzsimons 1996

Monitoring Reefs

- Verify it is stable
- Compare it to natural reference areas
  - Substrate, depth profile, size, arrangement?

Engineering Plan for Artificial Reef (profile)



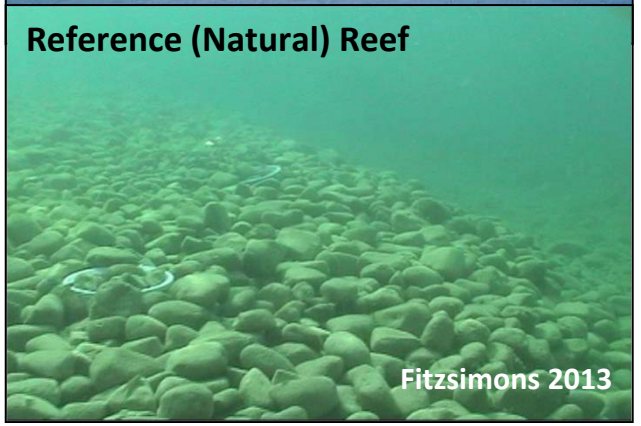
When Monitoring for Fish Use

- SPAWNING
  - Spawning Adults
    - But are they just passing by?
  - Egg abundance
  - Water temp/ice depth
- REARING
  - Juvenile abundance
  - Other fish
  - Benthic invertebrates
- Compare to reference areas

Smokorowski et al. 2015

Example 1

- Snap Lake, 2001
- 100 m^2
- Goal: Lake Trout/Whitefish spawning
- DFO Science (Fitzsimons et. al 2012)
  - 30% of reef used by Lake Trout
  - >100 eggs/m^2
  - No eggs on reference reefs
  - 2 and 6 years post-construction

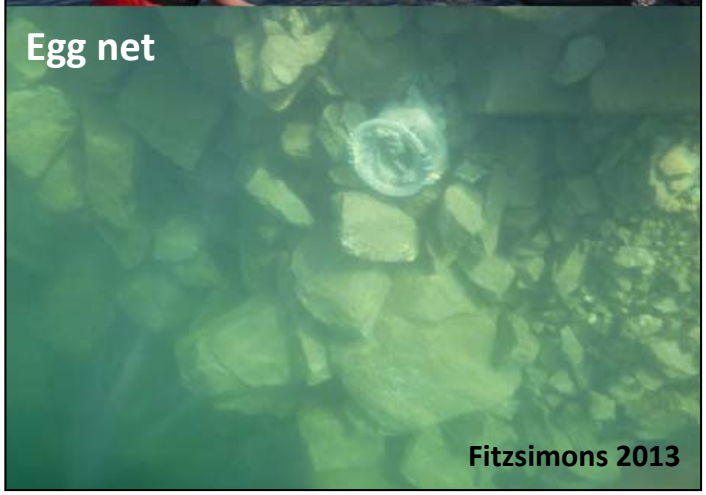


Example 2

- Windy Lake, 2011
- Six Shoals (621—1040 m^2)
- Goal: Lake Trout rearing/ foraging
- Years 1 2, 3, 5 post-construction
- Physically stable, but few fish observed nearby
  - Including natural reference shoals
- Similar # of invertebrates to reference shoals by year 2

Example 3

- Lac de Gras
- Dike exteriors
- DFO Science (Fitzsimons 2013)
  - No eggs retrieved from dikes or nearby reference habitat
  - Loss of 'artificial eggs' from egg nets → very strong currents



Summary

- Artificial reefs can be successful offsetting measures (depends on the project)
- Goal of the reef (spawning, rearing, foraging) determines how it is built and monitored
- Need to consider what natural reefs/shoals are like in the area (and where fish like to go)

Thank you!

Questions and comments?

Image credit J. Fitzsimons

Appendix K

TK Panel #8 Recommendations Presented to DDMI

Traditional Knowledge Panel

Session 8

DRAFT Presentation to DDMI

December 4, 2015

Observations and Comments: Fish

- Fish can hear and feel what you are doing on the ice (e.g. skidoos, walking on ice)
- Fish need shorelines that provide a source of oxygen
- Pressure ridges and open water attract fish during the winter; making holes on ice can mimic pressure ridges (as an oxygen source); consider this when constructing the reef

Observations and Comments: Water

- Bugs in the water are an indicator of health
- Important to monitor water continually even after closure
- Moon cycles affect water flow and currents
- If animals won't drink from the pits after they are filled, this is an indicator of a problem
- You can use a fish line as an indicator of current and watch how it changes; it is important to understand currents in LdG and LdS

Observations and Comments: AEMP

- Use Diavik and TK Panel as a model for TK / WS collaboration in monitoring
- Explore model of “Watchers of the Land” from LKDFN for future monitoring and learning opportunities from Aurora College, ENR – GC initiative, BEAHR, etc.
- Youth need to be trained in monitoring starting today.

Observations and Comments: Reefs or Shoals

- Minnows prefer gravel over fine, sandy material and they won't go into deep areas
- Currents are a key determining factor in spawning site selection and successful spawning
- Fish lay eggs in shallow areas
- We need to be clear on what makes a good habitat for spawning, rearing, resting and feeding
- Currents can shift around reefs
- Snow and ice will accumulate on top of reefs; ice is not as thick as in middle of lake (due to insulation)

Observations and Comments: Shorelines

- Cliffs on shoreline in Pit A418 are a concern for caribou and other animals, especially when being chased
- Shoreline around Pit A154 looks okay with the current vegetation
- Shifting ice can alter shorelines

Observations and Comments: General

- Mice, ground squirrels, and ermine help to clean land and water
- Water quality *and* quantity are both important issues
- Visiting disturbed sites (e.g. camp at Pellatt Lake) would be a good way to see natural regeneration
- Dust is a concern and should be monitored in the land, water and air

Observations and Comments: General

- Water is more precious than diamonds
- Warmer winters lead to more pressure ridges
- Practice energy efficiency today (*Note: Added after review of workshop notes, January, 2015*)

AEMP TK Study Recommendations

1. Maintain current camp site until at least 2018
2. Consider options to donate camp facilities to people traveling to LdG after the mine closes
3. In future programs, document why certain fish are rejected by elders
4. Water testing should be done by tasting fresh water and by boiling the water, letting it set overnight and drinking it the following day (observe scum and clarity)

AEMP TK Study Recommendations

5. Set fish nets on both sides of the island
6. Ensure two elders and two youth from each group attend future camps and meetings
7. Sample fish and water from the Narrows (In both LdG and LdS)
8. Consider additional water sampling locations from different areas

On Island Recommendations

9. Do not breach dikes until the TK Panel is satisfied with the water quality through visual inspection and reviewing results from scientific analysis
10. Focus water quality monitoring on the NCRP
11. Monitor and filter two streams from the east and west sides of the PKC by Mother Nature through mosses, bogs; moss should be placed throughout channel. In the short term, install industry filtering system. Monitor this water quality.
12. Monitor fish spawning areas closely, especially in the SE part of island (i.e. area just south of the pits)
13. Monitor and test water in pits and around East Island regularly

On Island Recommendations

14. Regularly stock on-island pond water with bugs to improve water quality
15. Test water scientifically and not by tasting
16. Regularly measure heavy metals all around island
17. Monitor water in late May and early June as these are critical times (i.e. melt)
18. Regularly measure water quality in all bays, drainage and run-off
19. Annually check for algae growth around shorelines as too much can be an indicator that there is less oxygen for the fish

On Island Recommendations

20. Leave the land between the pits and the dikes as it is for natural regrowth when flooding
21. Leave dikes as they are (i.e. do not modify the slope or current construction)

Reefs Recommendations

22. Vary depths of built reefs
23. Don’t build or minimize building reefs on previous lake bottom areas inside dike area (i.e. protect undisturbed and naturally vegetated areas)
24. Ensure good fish habitat for rearing, feeding and resting on reefs inside dike
25. Stock water in open pits with bugs to improve water quality

Shoreline Recommendations

26. Provide opportunity for the TK Panel to view the present shoreline when snow-free to consider further recommendations (in spring)
27. Break-up the 1 km cliff on pit A418 with slopes (to make it safe for caribou)
28. Leave current roads into the pits (e.g. A154)

General Recommendations

29. Explore long term monitoring options including how to coordinate and administer an ongoing post-2030 program that continues to integrate TK and science, involves both elders and youth trained in science (consider funding, and if some of the bond can be used)
30. Ensure long term scientific monitoring of NCRP to determine if it remains frozen and stable
31. Continue to provide TK Panel with teaching and communication ‘tools’ (i.e. videos, books, photos), to share progress and findings on closure planning with communities

General Recommendations

32. Plan for climate change hundreds of years into the future
33. Re-seed land and use dirt and *safe* sewage to facilitate re-growth

Questions for Diavik

- What if contaminated water flows downstream to Kugluktuk? – DDMI has to have controls and monitoring on the Island; too late if it were to get to Kugluktuk
- What will be left behind from operations underground or in the pits? – DDMI presently making an inventory of what has to come out versus what we can leave behind; starting planning and discussions with regulators
- How many streams and rivers flow into LDG? – DDMI will report this back to the TK Panel

Questions addressed by Diavik

- What do you mean by “bad” water? – Ground water is saltier than lake water
- Will the pit walls be washed? – No, tests have shown that it won’t make a difference
- How long will it take to fill pits? - Approx. 6 mos.
- Will filling the pits change the water level of LdG? - By 1 to 2 cm
- How deep and wide will dike breaches be? – Approx. 30 m wide and 2-3 m below low water depth

Questions addressed by Diavik

- What are the chemicals in the sewage? - DDMI will report this back to the TK Panel

Appendix L

TK Panel Process Presentation

Diavik Diamond Mines

TK Panel Session #8 – next steps

December 2015

TK Panel Topics & Schedule Suggestions

Session	Original Plan (2013)	Completed & Revised Plan
6	PKC	PKC
7	Re-vegetation	Re-vegetation
8	Review of Closure Landscape	Fish Habitat Design & Water Quality
9	Post-closure monitoring: Wildlife & Water	**Post-closure Wildlife Monitoring (Apr/May 2016 - site)**
10	Fish Habitat Design Reviews	**Closure Plan Update & Landscape Overview (Aug 2016 - Yk)**

The next update for Diavik's closure plan is due at the end of 2016

Appendix M

TK Panel Session #8 Evaluation Summary

2015 Diavik TK Panel, Session 8: Evalution Form Summary

Question	Very Good	Good	Neither Good nor Poor	Poor	Very Poor	Total Responses	Comments
How would you rate the session for working and communicating together?	11	3	0	0	0	**14**	
How would you rate the session for mutual respect among participants?	11	3	0	0	0	**14**	
How would you rate the recording of TK during the session?	10	2	1	0	1	**14**	Translations
How would you rate the facilitation of the session?	10	2	1	0	0	**13**	1 unanswered
How would you rate the outcomes and findings of the session?	10	4	0	0	0	**14**	
How would you rate the venue and food for the session?	10	1	2	0	0	**13**	1 missed
How would you rate the logistics for the session (e.g. hotel, travel, honoraria)	10	2	1	0	0	**13**	1 missed
Overall, how would you rate the session?	11	2	0	0	0	**13**	1 missed

Question	Too long/ many	Enough	Too short/few	Total Responses	Comments
How would you rate the opportunities for you to share your knowledge and experiences?	3	11	0	**14**	
How would you rate the amount of time to discuss the topics during the session?	1	9	3	**13**	1 missed

What were the strengths of the session? What did you enjoy most about the session?

- The feedback
- All the feedback and understandable info
- Everything good
- Very informative
- Everything was clear and not rushed; happy with the outcome
- Listening to the Elders; some of them had pretty awesome stories
- Enjoyed the group discussions, interacting with youth/Elders opinions; Elders hold stories from the past, youth bring with them modern information
- Meeting good friends from all over the North
- Being positive and making connections with other people from different communities
- Coming to solutions for problems
- Traditional Knowledge
- You all do a fine job
- Always repeating questions and giving time to go over issues until we were clear on our answers

How could the session be improved?

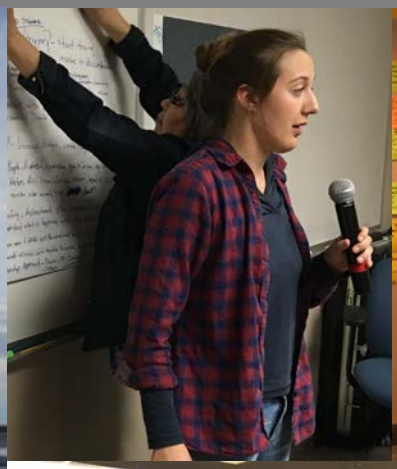
- More youth representation and involvement
- Having more youth participants
- On site next time
- Have more of these types of sessions on TK
- Providing more information to the mines
- More space for meeting
- More meetings with Diavik
- Lunch at the meeting

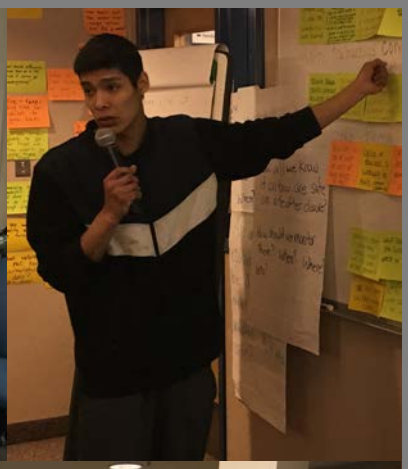
DDMI Traditional Knowledge Panel Session #9

FOCUS ON CARIBOU

Diavik Diamond Mine, NT

May 13–16, 2016





Thorpe Consulting Services

George was known for his love of life. He and his beautiful wife Celine raised a large family ensuring that they could live in both the traditional and modern worlds. He provided leadership in the community formally and informally. He contributed to the publishing of a dictionary in his dialect while playing an important role in the development of a “watchmen” program that builds on traditional stewardship of traditional territories to ensure the environment is protected. Indeed George spent some of his last days reviewing the work of the TK Panel, ensuring that it was well represented by reports. George loved to laugh and make people feel good, he didn't hesitate to tease in a loving way. He will be missed throughout his community and the whole north.

> When George was still okay he had a lot of recommendations [for the TK Panel] so wrote everything down in October . . . At the end he was laughing and then he says "I hope the two mines can get together and make me a head stone out of all those rock piles."
>
> Shared by Celine Marlowe

Diavik Diamond Mines (2012) Inc.
Traditional Knowledge Panel Report

Session #9: *Focus on Caribou*

Diavik Diamond Mine, NT
May 13–16, 2016

Facilitation

Joanne Barnaby, Joanne Barnaby Consulting
Natasha Thorpe, Thorpe Consulting Services (TCS)

Participants

Kitikmeot Inuit Association	Bobby Algona, Nancy Kadlun, Doyle Algona (youth)
Łutsel K'e Dene First Nation	August Enzoe, Celine Marlowe, Denecho Catholique (youth)
North Slave Métis Alliance	Kathy Arden, Wayne Langenhan, Chloe Dragon Smith (youth)
Tłı̨chǫ Government	Dora Migwi, Louie Zoe, Janelle Nitsiza (youth), Peter Huskey (interpreter)
Yellowknives Dene First Nation	Grace Martin, Rose Betsina, Berna Martin (interpreter)

Observers/Presenters/Visitors

Government of the NWT	Karin Clark (presenter)
Environmental Monitoring Advisory Board	Arnold Enge, Allison Rodvang (observers)
Tłı̨chǫ Government Lands Department	Joline Huskey (observer)
Diavik Diamond Mines Inc.	Gord Macdonald
C&E Consulting	Colleen English
Thorpe Consulting Services	Janet Murray (transcriber)

Interpreting equipment provided by Pido Productions.

As a group here, we all come together to try to express our feelings, to give back to Diavik our traditional knowledge. -- Bobby Algona

We are gathered here having this discussion on the caribou we are representing. -- Dora Migwi

Background

The TK Panel is mandated to assist Diavik Diamond Mines (2012) Inc. (Diavik) and work with local communities in facilitating appropriate and meaningful accommodation of Traditional Knowledge (TK). The TK Panel provides guidance in environmental management and monitoring as well as in closure planning at the Diavik Diamond Mine. From 2011 through early 2013, TK Panels were assembled by the Environmental Monitoring Advisory Board (EMAB) to discuss select concerns related to the Diavik Diamond Mine. The most recent session was held at the Diavik Diamond Mine (Figure 1) from May 13–16, 2016 and was the fifth in a series of TK Panel sessions now administered under Diavik rather than EMAB, and the ninth in the total number of TK Panel sessions.

Session Purpose

Caribou are at the forefront of many northerners' minds given recent declines in herd populations and, not surprisingly, discussions of caribou have been central to nearly all TK Panel sessions held to date. In response, this ninth session focused on caribou, particularly with respect to monitoring and managing caribou (and other wildlife) as a part of Diavik's closure plan. A review of available TK related to caribou was presented, including maps of caribou-related TK produced by various Aboriginal organizations and available to the public. This session was particularly relevant given present concerns about population decline of the Bathurst caribou herd.

The TK Panel drew upon previous sessions related to caribou (TK Panel #4), observations made during previous site visits, a review of available TK presented as well as an overview of the current Bathurst Caribou Range Plan and regional wildlife research and management programs provided by the Government of the Northwest Territories (GNWT) Department of Environment and Natural Resources (ENR). Part of the session was also used to review the final closure plan for the North Country Rock Pile (NCRP) to allow the TK Panel to determine if they support the final design for the pile at closure. In keeping with the format of previous sessions, the TK Panel developed recommendations for review and consideration by Diavik and provided suggestions for future TK Panel sessions.

Session Goals and Activities

The TK Panel reviews closure plans for various areas of the mine, shares their knowledge in relation to each topic and presents recommendations to Diavik at the end of each session. In this way, they are continually increasing their understanding of the mine site and its closure challenges, while also directly influencing Diavik's closure plans. The goals for Session 9 were to:

- provide a final opportunity for input and seek support / approval on the final closure plan for the North Country Rock Pile
- review a summary of existing TK of caribou that has been shared since the 1990s, prepared in response to a request from the TK Panel
- learn more about the current Bathurst Caribou Range Plan and the GNWT's wildlife research and monitoring programs
- provide guidance on ways to encourage safe movement of caribou and other wildlife on/around site and how best to monitor animals throughout closure

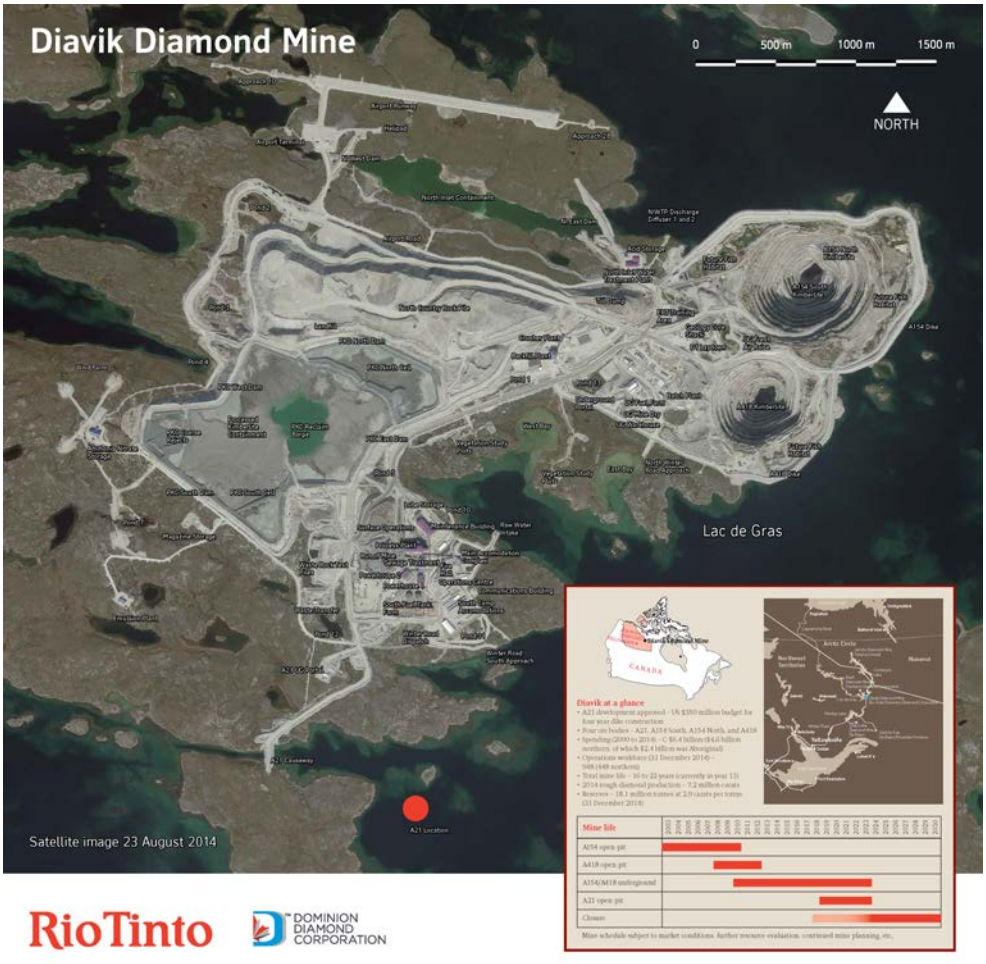


Figure 1 Diavik Diamond Mine 2015

The session agenda was structured around these key goals. At the outset of the session, the group reviewed and approved the proposed format and agenda. An evaluation process held at the end of the session helps to improve future sessions.

During the TK Panel session, approximately 10 individuals took a Process Plant tour, as per their request, to learn more about the Processed Kimberlite deposition trial. Participants received a surface tour of the mine upon arrival to re-familiarize themselves with the site, and a more focussed field trip on May 14 included stops requested by the Panel and discussions relating to the following locations: A154/418 open pits, North Country Rock Pile (NCRP) and till pile, processed kimberlite containment (PKC) area, test pile, natural reclamation areas near the shallow bays, and the North Inlet area.

Report Overview

This report first outlines key themes around caribou related to closure planning discussed during the session and closes with recommendations made by the TK Panel.

Appendix A includes photos from the session and field trip. Appendix B contains the session agenda while Appendix C provides a blank copy of the informed consent form that was signed by participants or observers new to the TK Panel. Session notes were reviewed and verified by the speakers and included in Appendix D including maps created by the men's break-out group of the TK Panel related to their recommendations around caribou monitoring. Appendix E contains maps of publicly available TK of caribou shared by groups while Appendix F presents a review of caribou recommendations made by the TK Panel to-date. Appendix G contains a presentation given to the TK Panel as an overview of documented TK of caribou starting from the 1990s.

Diavik provided a presentation on an overview of the closure plan, the focus for Session 9 and their response to TK Panel Session 8 recommendations on shoals, reefs and water monitoring. Diavik also presented the final closure plan for the NCRP as well as an update on processed kimberlite toxicology and the PK deposition trial (Appendix H). Finally, Diavik reported on caribou and wildlife monitoring on-site (Appendix I). The Government of the Northwest Territories gave an overview of the Bathurst Caribou Range Plan and the department's current research and management initiatives (Appendix J).

On the morning of the last day, the youth collaboratively presented the work of the TK Panel to Gord Macdonald through a presentation outlining key observations and comments as well as recommendations on caribou (Appendix K). A short presentation delivered on the next steps is included (Appendix L), followed by a summary of participant evaluations (Appendix M).

Proceedings: Key Questions and Themes

The TK Panel was tasked with exploring guiding questions during this session. The original questions proposed by the facilitators were modified with input from the TK Panel over the course of the session and were finalized as follows:

1. Do you accept the responses to your recommendations as to what can and cannot be accommodated in the NCRP final closure plan? Do you support the plan?
2. At and after closure, what can be done to support safe movement of wildlife on/around site?
3. Should certain areas be planned to attract or keep away caribou? If so, how and where?
4. How will we know if caribou are safe on site after closure? How should we monitor them? What should a monitoring program look like when: 1) Mine operations end (2023–2025)? 2. Post-closure (2025–2030)? How? Where? When? Why? Who? What?

Throughout discussions to consider these questions, the following key themes emerged throughout the session:

1. The current closure plan for the NCRP is supported, with the conditions identified in current session recommendations
2. Today and throughout closure, implementing traditional and other ways to direct caribou movement will help keep them safe.
3. Today and throughout closure, caribou must be monitored.
4. Caribou populations are suffering and need urgent help.
5. Ongoing stewardship must be encouraged through the development of a robust community-based monitoring program.

1. The TK Panel Supports the NCRP Closure Plan with Conditions

The final closure plan for the North Country Rock Pile was presented to the TK Panel for final approval (Appendix H). Details of where input and recommendations received from the TK Panel were integrated into the closure plan were provided. General discussion of the design and status of the NCRP followed with participants generally pleased with the final version, as indicated by their unanimous supporting vote (with two abstains from individuals absent from previous sessions).

The TK Panel was satisfied with the plan to use till and rock from A21 to cap the NCRP and discussed whether this would be stable enough to prevent seepage. For example, some delegates expressed concern about how climate change impacts to permafrost might impact the NCRP.

The suggestion was made to put large boulders on top of the NCRP. Boulders would add the benefits of shade and microhabitat but could come with the costs of snow and water accumulation, which may then cause increased melt water and seepage. In the end, the TK Panel advised that a few (i.e., 2–3 large boulders) should be put on top of the NCRP and that snow accumulation patterns should then be monitored.

Next, the group discussed the proposed caribou "ramps" on the NCRP to enable safe caribou passage. Monitoring snowdrift and accumulation patterns on the ramps was considered to be important. As discussed extensively in previous TK Panel sessions, it will also be very important that the ramps are made of materials that encourage easy walking for caribou. The TK Panel has supported material similar to that on the slopes of the test pile, and feel it is important to ensure that large boulders near the bottom of the pile were covered or removed.

The TK Panel also discussed whether to re-vegetate at the base of the NCRP. Some participants didn't think this was necessary, but the majority thought this would be helpful, most notably in the areas where the collection ponds are located.

The TK Panel discussed and confirmed their ongoing support for the 3:1 slope proposed for the sides of the NCRP.

In summary, the TK Panel supported the revised closure plan for the NCRP with the condition that the related recommendations were supported:

9.1 Re-vegetate the base of the NCRP around the collection ponds.
9.2 A limited number of boulders (e.g., 3–4) should be placed on top of the NCRP to provide some shade for caribou, create habitat for small mammals and encourage natural re-vegetation.
9.3 Study the wind and snow accumulation on caribou ramps/trails as well as the top of the NCRP.
9.4 Ensure a gradual slope on the top of the NCRP so that there is a slight dome down the centre.

2. Directing Caribou Movement Will Keep Them Safe

The third key theme that emerged from the session is that today and throughout closure, implementing traditional and other ways to direct caribou movement away from hazards and towards easier walking routes will help keep caribou safe. Aboriginal peoples have long used their knowledge of caribou to guide their migrations and movements using strategically placed spruce trees or inuksuit so that caribou would funnel towards waiting hunters.

Panelists discussed how this knowledge could be applied to direct caribou away from hazardous areas such as cliffs or tailings ponds. Ways to direct caribou considered:

- Boulders (e.g., around PKC)
- Boulder fences
- Traditional fences (e.g., trees, inuksuit, boulders)
- Controlled burn
- Decoys
    - Noise (high pitch, wolf, bells)
    - Physical shapes (e.g., owl, wolf)

During the session, the women and men broke into two separate groups to consider Q2, Q3 and Q4 (refer to Agenda in Appendix B).

The women's group discussed general movement of caribou through the reclaimed mine-site and specified that they would like caribou deflected from the PKC area. They considered the construction of berms as a possible impediment to movement. The men's group identified on the map where they would like boulders placed to deflect caribou away from areas that may be unsafe (Appendix D). This included the shoreline of the North Inlet and the edge of the NCRP near the PKC. An innovative solution to use decoys or sounds to deflect caribou was considered by the men's group.

Even though traditional methods were used to deflect caribou, panelists weighed their concerns about potential residual contamination after closure with the challenges of using fences, boulders, berms or walls to keep caribou away from certain areas of concern.

Regardless of whether methods to influence caribou movement and migrations are implemented, making the site safe again was forefront on the minds of panelists. For example, ways in which natural filtering systems (e.g., moss) could be used to improve water quality on-site during closure were considered.

Across the landscape, both groups discussed whether they wanted to encourage caribou to return to the Lac de Gras area and support caribou in reclaiming their traditional routes after closure. Some people thought that the caribou should be deflected away form the area while others recognized that caribou will go where they like and so the site should be well prepared for returning caribou.

Panelists understand that while caribou movement can be directed sometimes, caribou have their own mind and ways that humans cannot always know how they will behave nor should they try to control the caribou.

3. Caribou Must be Monitored Throughout Closure

Details around caribou monitoring emerged as the fourth theme of the session. Following a review of caribou monitoring recommendations made by the TK Panel in previous sessions (Appendix E) and an overview of caribou monitoring presently ongoing on-site (Appendix I), the group considered existing and future monitoring of caribou. Panelists discussed current collaring data and the use of geofence collars which are smaller and enable better data collection. These collars could continue to alert monitors to caribou presence in the area throughout and post-closure, and this information would continue to be shared between adjacent mines such as Diavik and Ekati. Today, caribou sightings at one site should be reported to the other (or, at closure, to community monitors) and acted upon within a monitoring program. This suggestion came as part of a discussion advocating for the mines in this area to collaborate and combine monitoring resources. Finally, in keeping with community concerns about caribou health, panelists advised that the effects of collars on caribou need ongoing monitoring.

Since 2013, Diavik has used motion sensitive cameras for some aspects of wildlife monitoring throughout the site, which the Panel was curious about and suggested might be another good way to monitor caribou through closure. The men's group provided specific suggestions as to where motion-sensitive cameras could be installed in multiple locations at and near the mine-site as a tool to help with monitoring (Appendix D).

Panelists agreed that monitoring is very important throughout all stages of closure and provides capacity building for community members to be monitors both during closure (2023–2025) and post-closure (2025–2030).

The women's group devised the concept of a camp-based monitoring program grounded in both traditional knowledge and science, complete with a name: the Cumulative Effects Monitoring and Management Station (CEMMS). The idea would be to use the current TK camp as a base and link programs to the GNWT Daring Lake Research Station. Monitoring would build upon the current / ongoing monitoring presently conducted onsite, continue through "deconstruction" (i.e., reclamation and decommissioning) and post-closure. The program would be similar to that currently in place, but would have more community members or "land stewards" and northern Aboriginal peoples in leading roles. Training would begin well in advance of 2023 so that monitors are ready. The monitoring program would be built on partnerships between governments, industry (including Diavik), community members, colleges, universities and more with monitors coming from all of the communities across the range of the Bathurst herd.

Any caribou monitoring program should consider both caribou and their habitat. During the session, panelists spoke to fire and other threats to caribou habitat today and into the future. Likewise, a monitoring program must consider animals other than just caribou. Changes in the health of some animals can be an indicator of overall ecosystem health which may, in turn, be influencing caribou.

Monitoring throughout different seasons and across the range (i.e., beyond just the mine site) is also important. Ultimately, any monitoring program requires commitment from community members, industry, government and others if it is going to continue long after the mine closes.

Finally, while the session focused on caribou monitoring, members of the TK Panel again expressed concern about ongoing monitoring of the PKC, slimes, pits, NCRP and drainage (in and of themselves but also in relation to caribou). While this was a topic during the previous TK Panel session, the concern continues to emerge. Diavik assured the TK Panel that the site would be monitored until the final closure target date of 2030 and that Diavik would not be allowed to relinquish the mine if there were contamination issues.

4. Caribou Need Our Help Now

The TK Panel discussed the current caribou "crisis" and suggested that a combination of predation (especially from wolves), overharvesting and sport hunting, environmental conditions (e.g., climate change, forest fires), exploration and development and disrespectful behaviour have led to declines in populations.

Panelists shared how they had predicted that changes in caribou would come when caribou weren't respected and expressed their worry for future generations if the caribou do not return. Concern for caribou is particularly personal for the TK Panel members who told of the close relationship between people and caribou and how northerners have long depended on caribou for cultural, spiritual, and economic well-being as well as for subsistence purposes.

People agree that caribou are in need of assistance but have various suggestions as to why the decline is happening and what actions or interventions would be helpful. The TK Panel discussed various ways to help caribou through traditional practices, predator harvesting, education, and healing ceremonies/communicating with the caribou. While many of these issues fall outside of the scope of Diavik's responsibilities or practices, they provide context and a framework for what happens on-site today and how to plan for the future.

Ultimately, the TK Panel unanimously agreed that action must be taken to help caribou. Participants supported the need for a healing ceremony where people could ask for forgiveness from the caribou and offer their support in helping caribou return. They also advocated for people from various communities, agencies, and territories to work together.

5. A Robust Community-based Monitoring Program must be Developed and Transferred Upon Closure

While the TK Panel discussed the concept of a monitoring program, the last key theme that emerged was that the existing TK Camp should be transferred to the GNWT or another organization at closure and serve as the basecamp for community monitors after closure (i.e., 2025). Details around funding, liability, responsibility and more need to be fleshed out well in advance and while community members would like to develop and design the program (e.g., after the Haida Watchmen model), they would seek administration assistance from the GNWT. Other agencies could also use the station for cumulative effects monitoring and other initiatives. More details of the program could be discussed at a future TK Panel session.

6. Other

Additional themes discussed during the session included the profound changes that community members are facing today resulting from major caribou declines and the loss of a major food source, and to adapting to mineral exploration and development. Adapting to rapid change is difficult and people are struggling to maintain their traditions in very uncertain times. The concept of staggering development was suggested as a way to minimize impacts to caribou populations.

There were concerns raised about the sighting of pinkish-red snow thought to be associated with dust or development and questions about whether this algae might be toxic. This is known as "watermelon snow" and is a type of algae commonly found throughout the circumpolar Arctic. Diavik regularly tests snow cores and "watermelon snow" has been observed by site staff. If areas of algae were present where a snow core was to be taken, this snow would be included in the sample but the lab analysis would not be specific to the algae. Interestingly, a month after this session, Lutz et al. (2016) published a scientific paper describing how this algae (*Chlamydomonas nivalis)* can accelerate melt because it's darker colour absorbs light and thus may cause faster melting than white snow which reflects light.

Youth delegates participated in this session and were celebrated for their contributions, including presenting back to plenary on several occasions and leading an "energizer" event. The TK Panel is pleased that Diavik supports youth participation and emphasized throughout the session how important it is for youth to spend time with their elders and to continue to engage in community-based monitoring, community meetings and initiatives such as the TK Panel. Panelists commented on how they would like to continue taking a leadership role in community-based monitoring, planning for development and more.

Outcomes: Recommendations

The TK Panel collectively developed 25 unanimous recommendations related to caribou (Appendix K). These recommendations built upon discussions around caribou from previous TK Panel sessions, the presentation on the Bathurst Caribou Range Plan, and the summary of documented TK of caribou. The recommendations flowed from a common vision that caribou are in crisis and the relationship between people and caribou must be healed, not only at the mine-site, but also across the entire range.

The resulting recommendations centred around the following themes:

- NCRP—Four additional recommendations to support the final closure plan, as presented above.
- Helping caribou—Two recommendations specifying how communities can contribute their ideas on making caribou strong as well as prioritizing ceremony and healing the human-caribou relationship.
- Directing caribou movement—Two recommendations specifying where boulders should be placed on-site to keep caribou away from areas of concern.
- Monitoring caribou (general)—Two recommendations citing the need for collaboration and to understand both traditional knowledge and western science.
- Closure monitoring (2023–2025 and 2025–2030)—Eight recommendations detailing how planning and implementing a collaborative monitoring program should occur including details on training and capacity building, cumulative effects monitoring, ensuring community members are in high level / leadership roles, and suggestions for what indicators should be monitored.
- Caribou monitoring and cameras—Three recommendations detailing locations for using cameras. (e.g., caribou crossings).
- Supporting stewardship—One recommendation to consider long term monitoring related to re-vegetation, caribou and other wildlife and water quality in the Lac de Gras area.
- Supporting ceremonial traditions—One detailed recommendation on how to work with the TK Panel to plan spiritual gatherings now through closure and other ways to respect spiritual beliefs on-site.
- Other—Two recommendations related to other aspects of closure and community verification of reclamation.

Recommendations are numbered to reflect the TK Panel session identification (i.e., Session 9) and to subsequently identify each specific recommendation (i.e., 9.1–9.25). Diavik will consider these and add them to their Recommendations Tracking Table. Diavik's response will be presented back to the TK Panel at the next session.

TK Panel Next Steps

Following from planning carried out at previous sessions, the TK Panel has completed most of the focus session topics that have been suggested to-date (Appendix L). Thus, the facilitators asked participants to suggest future TK Panel topics and together the group developed the following possible list:

- A21 Open Pit and South Country Rock Pile
- North Inlet
- Underground mine
- Building deconstruction, metal disposal
- Monitoring Programs (more details of the proposed CEMMS)
- 2018 AEMP TK Study

These proposed topics were presented to Diavik and will be further discussed at the next TK Panel session related to a closure plan update and landscape overview.

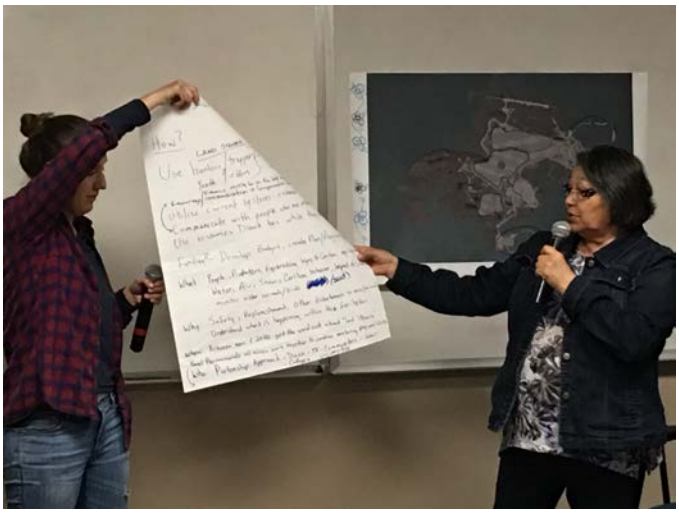
References

Stefanie Lutz, Alexandre M. Anesio, Rob Raiswell, Arwyn Edwards, Rob J. Newton, Fiona Gill and Liane G. Benning. 2016.The biogeography of red snow microbiomes and their role in melting arctic glaciers. Nature Communications 7, Article number: 11968. http://www.nature.com/ncomms/2016/160622/ncomms11968/full/ncomms11968.html.

Appendix A

TK Panel Session #9 Photos

Men's breakout session to discuss how best to monitor caribou post-closure



Chloe Dragon Smith and Kathy Arden (NSMA) present the results of the women's breakout session back to the group

Nancy and Doyle Kadlun (KIA) and Wayne Langenhan (NSMA) listening to presentations

Louie Zoe, Dora Migwi and Joline Huskey (Tłı̨chǫ) learning about the NCRP closure design

Having a laugh during a much needed "caribou tails" energy break lead by the youth (L-R, August Enzoe (LKDFN), Peter & Joline Huskey (Tłı̨chǫ), and Celine Marlowe (LKDFN)

YKDFN youth trying to keep up with the Elders during the game!

Nancy Kadlun (KIA) shares her perspective on caribou management at closure

Gord Macdonald (DDMI) responds to TK Panel recommendations with visitors from EMAB

Karin Clark (GNWT) presenting to the group on the Bathurst Caribou Management Plan and monitoring and research programs that the GNWT is leading

Looking towards the re-vegetation test plots near the shallow bays

Gord Macdonald (DDMI) explains open pit closure concepts at the A154 open pit

Celine Marlowe (LKDFN) pointing out a wolf travelling along the A154 dike

Grace Martin and Rose Betsina (YKDFN) inspecting the A418 pit edge

Interpreter Peter Huskey in the PKC area holding a sample of the PK slimes and explaining them to Louie Zoe (Tłı̨chǫ)

Community members considering how to create safe caribou access to the open pit lake areas after closure

Appendix B

TK Panel Session #9 Agenda

Agenda

Diavik Diamond Mines Inc.
Traditional Knowledge Panel
Session #9: Caribou
May 12-16, 2016

Thursday, May 12

3:00 pm	Arrive onsite - quick surface tour en route to camp (~1hr)
	Security, Orientation & camp tour (~1 hr)
	Rooms & Luggage assistance

Friday, May 13

8:30 am	Opening Prayer, Welcome, Round Table Introductions, Review Draft Agenda, Workshop Purpose Overview
9:00 am	Diavik Presentation – closure overview, response to previous session recommendations, session 9 focus topics
	Group Discussion
10:30 am	Diavik Update: North Country Rock Pile
	Question 1: Do you accept the responses to your recommendations as to what can and cannot be accommodated? Do you support the current plan?
11:30 am	Lunch
12:30 pm	Group Discussion
	Understanding Caribou: A 'caribou story' - Overview of Current status, issues according to Traditional Knowledge and Western Science (Facilitators)
	Group Discussion
4:30 pm	Close

Saturday, May 14

8:30 am	Opening
8:45 am	Review of Caribou Recommendations made by TK Panel to date (Facilitators)
9:00	Understanding Caribou at Diavik: Caribou and Wildlife Management On-site (Dianne Dul)
9:45	Break-Out Group Discussion: Men / Women
	Question 2: At and after closure, what can be done to support safe movement of wildlife on/around site?
	Report to Plenary
11:30 am	Lunch
12:30 pm	Diavik Update: Processed Kimberlite Toxicology & Deposition Plan update
	Group Discussion
2:00 pm	Afternoon break before an evening field trip
4:00 pm	Site Field Trip and debrief for visits to: A154/418 open pits, north country rock pile (NCRP) and till pile, processed kimberlite containment (PKC) area, test pile, natural reclamation areas near shallow bays, North Inlet area

Sunday, May 15

9:30 am	Opening
9:35 am	GNWT - ENR Presentation: Bathurst Caribou Range Plan Overview & Cumulative Effects Monitoring
11:30 am	Lunch
12:30	Break-Out Group Discussion: Men / Women
	Question 3: How will we know if caribou are safe on site after closure? How should we monitor them?
	Question 4: Should certain areas be planned to attract or keep away caribou? If so, how and where?

	Question 5: What should a monitoring program look like? How? What? When? Where? Why?
2:30	Group Discussion
4:15 pm	Introduction to Next Steps / Next Sessions
4:30 pm	Close
6:15 pm	Tour of Processing Plant

Monday, May 16

8:30 am	Opening
8:35 am	Facilitators present draft of TK Panel recommendations for discussion
	Group Discussion: Finalize recommendations
11:30 am	Lunch
12:30 pm	Next Steps / Next Sessions (cont'd) Group Discussion
1:00 pm	Presentation to Diavik: TK Panel recommendations re: caribou and NCRP
	Diavik Response and Group Discussion
2:00 pm	Closing Circle and Prayer
3:00 pm	Check out for return flight

Appendix C

Informed Consent Form

Diavik Diamond Mines Inc. Traditional Knowledge Panel

Informed Consent Form

I (name) _____ _____on _____, 2016 give permission for Diavik Diamond Mines Inc. and its contractors to take notes, photographs and / or audio and video recordings related to my participation in meetings, workshops and events related to the Traditional Knowledge Panel established for the Diavik Diamond Mine. I understand that my participation includes meetings and workshops held throughout each year either in communities in the NWT or NU or at the Diavik Diamond Mine.

Through my signature below, I understand that:

1. I consent to have my words, activities and responses regarding and related to my knowledge recorded on maps, in notes and photographs, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data);
2. I am free to choose not to respond to any questions asked or participate in any discussions without prejudice or penalty;
3. I can choose to be anonymous in my participation without penalty;
4. My representative Aboriginal Organization, DDMI and / or its contractors may use the information collected to contribute to operations and closure planning at the Diavik Diamond Mine;
5. DDMI and its contractors may share my information which I have verified and given permission to share in either reports and/or photographs and provide such information to my Aboriginal organization and other regulators:
6. I agree that my contributions may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the TK Panel and that my representative Aboriginal organization, DDMI and/or its contractors will make all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

7. I will receive financial compensation for my participation in accordance with DDMI policy;
8. I am free to request that any information I share is removed, erased or deleted and that I will have the opportunity to verify draft video-documentaries, reports and maps to make edits before I sign them off and that final copies will be provided to me;
9. I also understand that DDMI cannot ensure the protection of the Traditional Knowledge from public release once the reports are released (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites);
10. The Traditional Knowledge Data will be summarized and integrated with scientific data into a report, which will be publicly available.

Signed this_____ day of_____ 2016, in _____ Northwest Territories.

Signatures:

_____ _____

Participant Aboriginal Organization

_____ _____

Diavik Diamond Mines Inc. DDMI Contractor

Appendix D

Session Notes

May 13, 2016 DDMI TK Panel Session #9: Caribou

Louie Zoe: Opening prayer

Joanne Barnaby: Good morning everyone, we will start the day with introductions, please say your name and organization and your community.

Bobby Algona: From Kugluktuk, KIA

Kathy Arden: Yellowknife North Slave Métis Alliance

Nancy Kadlun: Kugluktuk, I work with the Heritage Center

Doyle Algona: Kugluktuk, KIA

Chloe Dragon Smith: Yellowknife North Slave Métis Alliance

Wayne Langenhan: Highway number 3 and I am with NSMA

Grace Martin: Dettah, Yellowknives Dene First Nation

Rose Betsina: Yellowknife in Ndilo

Denecho Catholique: LKFN, Łutsel K'e Dene First Nation

August Enzoe: Wildlife Management Board Łutsel K'e

Celine Marlowe: Łutsel K'e

Janelle Nitsiza: Whati

Louie Zoe: Gamèti

Dora Migwi: Behchokǫ̀

Joline Huskey: Behchokǫ̀, Tłı̨chǫ Government

Karin Clark: ENR, GNWT I am an invited guest to give a presentation tomorrow.

Colleen English: I contract back to Diavik, and just to let you know Gord Macdonald who many of you are familiar with and who leads Diavik's closure planning, he will be here, he is just getting here this morning.

Joanne Barnaby: Working with Natasha in facilitating the work of the panel, and I am losing my voice.

Natasha Thorpe: As most of you know, I have been co-facilitating the panel with Joanne. This is our ninth session.

Going through the agenda. We are here to talk about caribou. Colleen is going to provide an update on the closure plan and speak to the North Country Rock Pile.

Colleen English: **Diavik Presentation**—Closure Overview, responses to previous session recommendations, Session 9 focus topics

Bobby Algona: That question about putting bugs back in the lake, we were talking about washing the walls of all the pits before putting the water back in. Is that water going to be pumped out prior to putting water back in, because there is still going to be some ammonia in there?

Colleen English: If you remember, they did tests of the washing of the walls and it actually came back saying it didn't make a difference, so the plan is not to wash the walls. The plan is to fill the pits and then to monitor for a few years. This would be done prior to putting the bugs in, if that approach was supported.

Nancy Kadlun: When we did the last camp we had one bed still in our camp.

Colleen English: Yes there were a few people that didn't show up this last time so there were a few extra beds.

Continue presentation.

Wayne Langenhan: I am just wondering about if Diavik wants to walk away in 2030, I want to know what would happen if in 2030 if things still aren't cleaned up sufficiently. Would they stay a longer period of time 5-10 years until it was to the point where they could walk away or would they just say 'that's it we are going'?

Colleen English: It is a good question. Diavik would have to be able to prove that things are in good order to walk away. I think even Karin would know that certainly the government doesn't want to be sitting with another Giant Mine scenario or Con Mine scenario and I think a lot of it would depend on what that lingering issue was. If it was something big that was going to need a lot of money and maybe it was a way longer term, then Diavik would still have to be committed. If it was something smaller, it might be a case where Diavik might not get all of their security back and so they would relinquish a portion of that and that money would go towards continuing to fix that problem. So it depends on what the problem is but they would certainly not be able to walk away at 2030 if there was some problem that was still existing; they would have to be doing something to solve it before they could relinquish the leases.

Break

Natasha Thorpe: I am curious to know if there are any other responses or questions about what Colleen just presented.

I was showing Joline this document here that contains all of the recommendations that you've made over the last few years. It outlines what the actual recommendation was and then how Diavik responded to it. The final column speaks to how Diavik is continuing to address or respond to that recommendation. I just want to check in with you before we move on.

Celine Marlowe: On the form that you have, in October when George was still okay he had a lot of recommendations so wrote everything down in October but I don't know if that paper is still at home. I hope it is still there. I wrote down all his questions. At the end he was laughing and then he says "I hope the two mines can get together and make me a head stone out of all those rock piles".

Natasha Thorpe: Thank you for sharing. George was a very strong presence in this panel and when I spoke earlier about breaking up into the women's group and the men's group he was part of that men's group and part of shaping those recommendations and how Diavik is planning for caribou movement.

August Enzoe: Can you put the map back up for the pit? The last meeting we had we were talking about the pits, and everybody agreed that after 5 years if the water is safe and he talked about cutting the pits from east to west. What happened with that?

Colleen English: You are talking about our last meeting when Lucas Enzoe said to cut just here, here and here (more north to south) to almost make a stream and keep the pits as ponds. So if you remember the challenge that Gord had said, and still would be the case, is that you can't control the water level when you do that. The entire pit area would fill with water once the dikes are breached, as lake water levels would equalize throughout the entire area.

We can all get out and look at that on the site tour tomorrow.

August Enzoe: Okay

Louie Zoe: The open pit in BHP - there is lots of open pits - and they have mentioned similar ideas to this. The water is going to be filled and if they refill all these open pits and it might make the water level of the lake go down.

Colleen English: It is a good question and I know it seems like it would be a big draw and if everybody did it at the same time then yes, it probably would make quite a big difference. Filling the pits was always on the closure plan, and the scientists always do what they call modeling, how much water is going to be needed to fill those pits and how much will that draw down the lake. Fortunately Lac de Gras is very large, I can't remember the exact number but I think it would only go down a few centimeters. I will get it from Gord.

Natasha Thorpe: I remember Gord providing a number of how much the draw down would be.

Kathy Arden: Earlier you were showing us a picture of Diavik and the pits and the new A21. The new A21 hasn't come in yet, you are building the dam for it and all the rock that comes out of that of course is going into North Country Rock Pile. That's why you said it's not going to get any bigger. So are they going to start a new one?

Colleen English: Two things are going to happen with A21. All the rock in A21 is considered clean rock, so there is an opportunity to do some progressive reclamation and use the rock to close the North Country Rock Pile earlier. It will be capped like the test pile we visited. A South Country Rock Pile will also be built and the TK Panel has been very interested in the design of it.

Kathy Arden: Where are they, the test piles?

Colleen English: (points to map) Beside where the South Country Rock Pile will be. We went by it on the tour yesterday and we'll go back tomorrow.

Presentation on North Country Rock Pile

Joanne Barnaby: My memory around re-vegetation for the North Country Rock Pile was not actually on the rock pile but was around the base of it, not on top of it. So I am not sure if your response would be the same or not.

Colleen English: The areas around the North Country Rock Pile are mainly collection ponds,

Joanne Barnaby: I recognize that.

Colleen English: I don't know if that would change, you can ask Gord.

Wayne Langenhan: That A21, are you opening that pit for mining the diamonds or recapping?

Colleen English: For mining, there are a good chunk of diamonds down there.

Wayne Langenhan: So you are using it for dual purposes, how long is it going to take before you mine the A21 out and use the material for recapping and recovering the diamonds?

Colleen English: Pre-stripping would start in 2018. This summer the dike will be finished construction but will still have water in it. Next spring they will finish what they call the cut off wall and then they will dewater the inside of the dike in 2017. 2018 is when they start the pre-stripping, taking the till out of the pit, so that is when they can start capping A21.

Wayne Langenhan: 2018, if it's going to be that long, we've got a year to think about it. It doesn't seem like there is any big rush.

Colleen English: It's not a year to think about it. It has to get approved, it has to go through regulatory review, there is work to be done to prepare the NCRP for closure. Most importantly, re-sloping.

Wayne Langenhan: So we don't have a lot of time to think about this.

Colleen English: Right, but it's something that you have been talking about for a while now and the opportunity has come up to do progressive reclamation because of A21.

Bobby Algona: I have a nephew that lives year round in Contwoyto looking after the mine Lupin. He is care-taking the mine year round. He should be on his way home today from Yellowknife but he couldn't make it back home on the snow mobile because there is not a lot of snow. And we understand when you have very little snow it's going to melt very fast. We didn't have very much accumulation over the winter and all the hunters in Kugluktuk complained about no snow all winter.

He likes to drive it up himself instead of flying it home. But this last couple years he started to notice something on the snow when he got closer to the mines. (We use snow to wash our hands after working on the caribou or other animals). When he would pick up snow closer to the mines and let it melt on his hands there were pink crystals on the snow and asked what chemical is doing this out on the land.

In my mind that's dust emissions. I'm not saying it's these mines but industry itself. The jet streams carry stuff all over the world. He is grabbing snow and it's changing colours, how far away from the mines do they take the snow core samples? I am wondering if Diavik could expand their sampling farther away from the mine? As a traditional knowledge holder I have to have some say about not only the mine itself but around the surrounding areas. Sometimes the mines tend to look at only their property and not any farther.

I am just wondering if the accumulation is coming from the mines or from somewhere else?

Colleen English: I think there are a couple of questions in there. The pink is snow algae and ice algae and it becomes even more concentrated and visible in the spring as the snow melts.

The next question is about distances. The little green line is East Island, the second green line is 10-15 km in each direction away from the island and, is called the local study area (LSA). The red line is 30-40 km in every direction, and is called the regional study area (RSA).

In the snow core program we test for dust and chemicals and it's done in a radius. There are 5 lines that run out from the mine.

Bobby Algona: That is one of my big concerns; we have never seen this pinkish red snow. My nephew he was saying he witnessed it closer to the mines no matter which way the wind goes.

Dora Migwi: The things that Bobby had mentioned are right. At one time my uncle Louie and they were out on the land on the skidoo and there was something on top of the snow, the dust and it was just black on top of the snow and maybe it wasn't the mines but maybe the planes.

Colleen English: There can be dust on top of the snow. You can see this mostly at the airstrip, just like in a community. There was more dust beside the open pits from blasting earlier in the mine

life, but that has decreased now that Diavik is underground. The dust on the snow is studied for amount and quality, and so is the lake water and sediments that it melts into.

Joline Huskey: Could you go back to the stock pile? I have a few questions and I haven't been to your meetings before, but I have been involved with Tłı̨chǫ Government. You are saying they wanted to re-vegetate the stock piles, and the company said no. I have been doing a lot of research on eskers and wildlife. From what I know so far, when caribou roam the tundra and they go on top of eskers for food and protection. If you are not going to re-vegetate, do you know how long it would take for the pile to re-vegetate itself? You also mentioned that the tailings would have lots of seepage in ponds before going into Lac de Gras but I don't see many ponds on Diavik island so which route would it go? Are the little ponds being tested for chemicals?

Colleen English: One thing I want to distinguish is the rock pile is not tailings, it is waste rock. So the pile itself, the lichen takes a long time to re-grow. We are doing some work to see if we can help the lichen and other re-vegetation. The fireweed that is coming back itself, it was probably 8 years after Diavik had been operating before we started seeing anything naturally. There is an old road about 15 years old that is now all purple, from the fireweed in the summer and that happened all on its own.

The ponds, there are different types of ponds. Some are very natural ponds and nothing has been done with them. Then there are the engineered ponds that we have put liners or pumping systems in so we can collect the water. Most of that water goes to the PKC.

Kathy Arden: Can you just show us where the dam is starting and where A21 is starting?

Colleen English: I will get a picture that better shows where the dike would be.

Kathy Arden: Once you start pushing the North Country Rock Pile out, you've got that road there and that would disappear right?? So how would you get around the mine from the airport?

Colleen English: Yes the road would disappear but we have other options for what would become the main road. The power lines would also have to be moved.

In order to start capping it we have to start reshaping in 2016-2017 before putting the till on it and to be on time with when they start stripping A21. Gord might know how long it would take to finish capping the Pile.

Celine Marlowe: What causes the snow to turn red, purple pink? Is it because of the mine or is it all over?

Colleen English: The snow algae is found in other places. I don't know if he (Bobby's nephew) just noticed it closer to the mine.

Bobby Algona: I get that from chopping ice for my fishing hole.

Chloe Dragon Smith: Could it be from the nutrients from the dust from the mines?

Colleen English: You may see more of it because of the nutrients in the dust, but I don't know. Is it safe to make tea from it? I don't know. We made tea from the lake this summer and people thought it tasted fine. There is definitely less dust right now because the mining has gone underground so the blasting is underground and contained.

Kathy Arden: When you say 'all over the place' do you mean all over the NWT or all over the world?

Colleen English: The world.

Bobby Algona: When I think of the snow accumulation of red and you look at the aurora borealis you have the same colours. Maybe it's the same kind of stuff that is up in the jet stream and our atmosphere. When you see the northern lights and all over would it be the same as the snow, it's the same colours?

Joanne Barnaby: I think one of Celine's questions was regardless if its red, is it still safe?

Colleen English: I don't know. Algae is a plant and shouldn't be toxic but I don't know. I can look it up and get back to you.

Celine Marlowe: So for sure you are saying this red snow is not because of the mine or 100% sure that it's not the mine.

Colleen English: 100% it occurs naturally all over the world. One of the uncertainties is if it is nutrient based. Is there more of it because of the dust? We don't know.

Louie Zoe: We are talking about snow, algae. Before we used to travel by the dog team and we would have ice tea and there are a lot of fumes that are being used and the planes that travel over us and the fumes that maybe go to the land and the water.

Joanne Barnaby; We wanted to check back with you to see if you are satisfied with the closure plan using your recommendations regarding the North Country Rock Pile. If you are not satisfied then you need to say so and we should discuss it further.

Kathy Arden: When you look around the land here now and look at the natural vegetation that comes up around the jumbled rock and little ponds and streams that flow. It's taken years to get those kinds of vegetation and plants. We wouldn't be able to get someone to try and recreate that on a rock pile, you would have to let nature do that on the rock pile. Lichen itself takes years. So I think the recommendation that we asked for is reasonable but when we look at it in a natural sense, we can't put that back there. Those rocks have been blown out of the land, but we can make that pile as acceptable to nature as we can. I think putting stuff along the base would help. I think I am satisfied to just let nature take its course.

Joanne Barnaby: So Diavik should not try to re-vegetate the rock pile itself but should around the base?

Nancy Kadlun: Yes this is a [hu]man made pile here it shouldn't take long to grow plants because any little thing will attach to the land; the dirt touched by man grows faster.

Joline Huskey; It was mentioned that the levels of the rock pile would be a ratio of 1:3. What is the ratio once the clean rock is on the rock pile? What would it be when it's topped with the till and rock?

I just want to know what the levels of chemicals are on top? Even natural and engineered ponds that would have an effect on waterfowl, birds and animals that drink out of it.

Colleen English: 3:1 is what is on the test pile; so steep but walkable. That would be the finished steepness of the pile after capping.

One of the benefits of doing progressive reclamation is that you can monitor the performance of the pile earlier. There will be more confidence, so the more information prior to closure, the better.

Celine Marlowe: I am still curious about that pink snow. I still think it is harmful to the human being. If we kept using that snow everyday it would be harmful for us.

I hate to say it but I know my husband is beside me and he has asked me to say it, people that are working around the mine here and with the mine, that is why I said 100% sure is, I know it's kind of hard to say that it is the cause of the mine but that pink snow is harmful to human beings in the long run. When I was still working at the school I do a lot of research with a lot of things and that's what we teach.

Wayne Langenhan: There is a little bit of controversy with the snow here but maybe if the mine could be talked into it to send some out to be tested.

Natasha Thorpe: I am no algal specialist but I would be happy to do some research on the internet tonight and get back to you.

Colleen English: Snow samples are already sent out with the snow core tests, and the pink snow is included in it, if it is present.

Joanne Barnaby: So with a show of hands question number 1. Do you accept the responses to your recommendations as to what can and cannot be accommodated?

Wayne feels he can support the NCRP Plan other than the one response about re-vegetating around the ponds at the base of the pile.

Do you? (show of hands for yes?). *All in support.*

Bobby Algona: You are not going to do very much on top of the country rock pile. I mentioned that the one time on our walks anywhere maybe you have noticed the big boulders sometimes that

they create re-vegetation, things collect around them. Maybe putting a few big boulders on top of the rock pile would help it to do it naturally. With this I can support the plan.

Break for Lunch

Gord Macdonald: **Interactive Closure Model - Presentation**

Nancy Kadlun: The rock pile is really far and what he was saying to put big rocks on the top of the rock pile because when it's really hot in the summer and caribou like to be in shade when it's hot. And the squirrels and animals like to be around rocks as well.

Gord: Thank you, we have thought about some of that but where the conflict is with some of that is remembering that we need to make sure we don't have a poor water quality seepage. So we want to discourage snow and more water so we would have to look at the benefits vs the disadvantages.

Natasha Thorpe: Gord, there were a couple of the other questions that just came up this morning about the North Country Rock Pile. There was discussion about re-vegetation at the base versus on top of the pile.

Gord: Yes I heard that comment coming in that you guys are comfortable with most of our responses to your recommendations but not that one, that you wanted us to look harder at the base of the pile. That is very good feedback and for sure we will have a closer look at that one.

Natasha Thorpe: Another question was "How long will it take to finish the North Country Rock Pile cap?"

Gord: We have been re-mining the rock pile to build the dike for A21, and we have been doing that in particular spots based on the start of where the re-slope would happen in January 2017, it will take about a year to do the re-slope and the next product is the till that comes from A21. It will take about another year until that is done, then we will let it sit for about a year until it freezes, then we will start putting the rock from A21 on top. Then we would be ready to start with any re-vegetation around it then.

We also have to relocate the road and power line prior to re-sloping the pile.

Kathy Arden: Do you have enough till from the new pipe to put a cap on the North Country Rock Pile or are you using some till from the other two pipes as well?

Gord MacDonald: We have more than enough from A21 and we will also create another new till pile. The reason we are not re-using the current till pile is because we feel it will be helpful in closure as a material for some of the other re-vegetation work that we might want to do.

The main thing I just want you to remember, and I know it's hard to think about what is going on inside all of this rock pile, but we have to get this right the first time because it is really hard to go back and change a slope or change something after we have already done it. That's why we have been talking about it with you for so many years and also because we couldn't commit to how we were going to deal with this until we had commitments to build the A21 pit. Now that we do, we have a good path forward.

Joanne Barnaby: It might be helpful to remind us why we want to keep the rock pile frozen.

Gord: The cover that I described, the reason we are building that cover is to make sure that the rock pile stays frozen. Right now there is quite a bit of that rock pile that thaws every year. About 30 feet. And when it rains that water can come in contact with the rock in the pile and pick up chemicals from the rock, just like it does from the ground, but these rocks have been underground for a really long time and these rocks have the ability to create a poor water quality. So what we want to do is keep the water from getting in contact with the rock. There are two different types of rock on the mine site. Type 1 and type 3. Type 1 is a good granite rock and if water touches it, it doesn't create poor quality seepage. Then a type 3 rock which is a different geological type of rock and when water contacts it, it can pick up metals and things that we don't want to get into the water. So the cover we are putting on top of it is to keep the rock pile frozen and it only thaws into the type 1 rock and the till. . It's using what we have from nature to help control what could be a problem.

And I know Bobby is going to ask about climate change.

Climate change is a challenge. We have engineers doing tests under current climate conditions, and under climate change conditions.

Bobby Algona: I was just wondering about with all this global warming and how deep that permafrost freezing in certain areas and that's why we are having certain lakes with less water because I think they are losing water because the permafrost is defrosting.

I ask this question: how deep does the permafrost go? They say it is very deep and I wonder how deep it's melting. Look at that rock pile you are still going to have a lot of permafrost melting and eskers are melting way faster. Hunters are seeing a lot of sinkholes now as well and have to change their travel paths.

Gord: Maybe I wasn't clear but we will put that soil (till) on top but then we are putting 3 meters of mine rock on top of that and yes that will thaw every year but with it on top there won't be the sink holes you are talking about because the rock on top will be protecting it.

Wayne Langenhan: I was just wondering the way these ramps were put in, were prevailing winds taken into consideration? Because it might pack things in.

Gord: So no we did not look at that but I guess we should look at that and make sure there will always be a way off, in all seasons.

Nancy Kadlun: Instead of having just small ramps, can't you just smooth out the whole area around the piles?

Gord: At the one meeting we looked at the test pile and everyone said that was fine for us and caribou to walk up. That is what we will be doing with the whole pile, what we are also doing is making some extra easy ramps.

Louie Zoe: We see the graphic it seems to be a good project, a gradual slope would be good for the animals to roam on it. It would be good to even it out on top.

Gord: One of the things we were thinking of ways to take pictures of it with us and look at the pile while we are there.

Louie Zoe: Yes on the tundra when there is a slope there would be a snowdrift, and if the animals go on the drift then we have to keep that in mind.

Gord: If one of these ramps is snowdrifted in would a caribou go up another ramp or go around or try and go through?

Bobby Algona: When you have snow accumulation around the hills it tends to make the slopes a little less steep and more gradual. In summer time I see a lot of these and how deep they go through up and down and their hooves catching the rocks. I think it would be really good to have these ramps that you have on there but as long as you don't have any big boulders on the side of the pile so when the caribou use the steep hills in the summer.

Gord: We have tried to keep the side around the PKC steep because we want to discourage the caribou from going in there.

Bobby Algona: Another thing, in the summer time especially when the mosquitoes are really bad, these slopes would keep the snow and the caribou would go there where it's cool.

Natasha Thorpe: So we are going back to those two keys questions:

Question 1 Are we accepting the responses to the recommendations as to what can and cannot be accommodated on the NCRP?

Nancy Kadlun: When I said shade for the caribou I didn't mean putting lots of rocks I was thinking to put at least 2 or 3 big rocks up on top, I didn't mean a whole lot of them I meant a few maybe because it will be really hot up there.

Gord: I never thought of that. I thought you meant a whole bunch of rocks.

Bobby Algona: We are going to go into the PKC later right?

Joanne Barnaby: Given the additional advice you have given Gord and Gord's answers, can you indicate by raising your hand that you are comfortable.

All hands in favour except for two abstains.

Grace Martin: Are we making the decisions, or is it going to the communities as well?

Gord: You are the first full group to see this, it still has to go to the Boards and then yes we will also be taking it back to the communities.

Joanne Barnaby: No one needs to go on record for disagreeing with the recommendations?

No hands raised.

Natasha Thorpe: **Traditional Knowledge Insights about Caribou in the Lac de Gras Region – Presentation**

So this is the starting point for the next couple of days. Before we break is there anything we missed?

August Enzoe: In the olden days, the story about what they were saying was all true. I was raised from two adults. Before they passed away, I always listened to them talking about caribou, and they were told by their grandparents that the world was going to change. Same with caribou. I was told you won't see any caribou in the future and now I remember that what my grandparents were telling me. One day you will go up a hill and see a caribou and have tears in your eyes. Caribou is really changing; this is the first year that we didn't have caribou in our life. They were coming towards us and they got half way there and they turned back. Same with Bathurst, I'm not surprised it's not coming to us.

Bobby Algona: Ultimately for the caribou right now my biggest recommendation is to go shoot some wolves. That's the biggest concern that we have right now, I would like the government to come up with something. It's the first time I have ever felt the urgency to get something done. The caribou are having a hard time keeping their numbers up. It is very urgent that we need to get rid of some of these wolves. I would like the mine and the government to say go get rid of some wolves right now. Because some of the caribou are half way between Kugluktuk and Contwoyto and they say you don't ever see this in one herd and right now we are seeing one little herd being chased by a bunch of wolves and another little herd also being chased by a bunch of wolves. I myself I get anywhere around 50 wolves. And when the migration comes through that's when we get the bulk of the wolves. We need to get rid of some of those wolves right now. We have done this in the past with poison. That was very hard on all animals that ate the caribou meat but the way I see it now, it is the hunters that were keeping the wolf numbers down back then, aren't hunting anymore and our younger generations are looking more towards jobs and getting away from hunting and trapping. They are saying they've had 100 wolves shot this year when they used to be in the thousands. I remember back when that big herd was around Kugluktuk. That was the most wolves I ever got, around 3000. This is very urgent for me and they get together and put their action otherwise what the wolves are doing now. Bears have gone up very quickly the last couple of years.

People in the government and the wildlife department need to get together and help the caribou numbers come back.

Nancy Kadlun: Speaking about caribou that is really declining, we have so many sport hunters as well every and all year and they are killing off all the big bulls. Where would this young boy be today if he didn't have guidance? The bulls are being taken away from the young caribou and so the young caribou don't have anyone to show them where to go any more.

Joanne Barnaby: I have heard elders in the past talk about how important those leaders are. They knew the importance of them to the caribou and traditionally they didn't hunt those leaders. They knew the importance of those leaders in maintaining the herd. It is something that is not in the hunting regulations.

Celine Marlowe: What Bobby said about wolves is true. Not last year but the year before, past Artillery Lake on towards Sandy Lake, we were out there hunting and I could see wolves in packs all over around us. You look one way and there were about 5 or 6 wolves, then another way the same thing. I do believe that is a big problem with the caribou, the wolves.

Last year we didn't really go hunting because my son-in-law and daughter passed away and then now George, not even a year and I have lost 3 people. It was really tough on us so we didn't go last year in the spring.

Break

Natasha Thorpe: Presents **Maps of migration routes according to TK.**

Louie Zoe: In the past when my dad was still living, during the month of August they would migrate to the north into the tundra. That's how we used to travel out on the land, that's how our ancestors did too. In August, the calves would be good for a parka, that's what my father would say. Once the bulls migrate down into the tree line, the cows and calves would follow them, and once it was spring they would travel into the tundra. There used to be lots of bulls, and once they started sport hunting they would go for the big bulls for the antlers, these are the leaders. There used to be a camp for sport hunting at Point Lake. And they kill off a lot of bulls and today when they put the collars on the necks and those can hurt the caribou as well. In Mesa Lake there was my brother Joe and he was saying that the collar might be why it's not feeding properly. The collars might have a negative impact on the caribou.

Dora Migwi: We are gathered here having this discussion on the caribou we are representing. Our people, we are working for the land, making decisions to protect it. We have youth here and I am thankful for them. The elders are not going to live long. In the future the youth will be working to protect the land, but as of today there are fewer elders, it feels like there are less.

When we have meetings in the community I feel we need more youth there. My father often said that when they go hunting into the barren grounds, it would be good to harvest calves to use for clothing. We live off the meat of the caribou and the fish, and it's very difficult for me to eat here because there is no country food. I live off of country foods so I am thankful that they talk about protecting the caribou. The wolves they roam on the land in packs, this is an urgent situation. My children and my grandchildren like to go out on the land and we are worried because of the packs of wolves. **The 3:1 ratio is a good idea (for the NCRP slope).**

Bobby Algona: We as natives all across the land here, we have done a lot of things similarly; we have lived off this land for many thousands of years. A lot of our elders in the past have talked a lot about the spiritual aspect not just the caribou but animals in general.

My grandmother (Elsi Katiuk) shared this story about caribou. A long time ago, eons ago, a lot of animals talked, they talked like ourselves and people talked to them in the past and sometimes when they would start to talk together. They would say that some things are very spiritual. Caribou were a predator at one time. There were people that were concerned about the caribou because they became predators because there was not much food. This is when they were almost like the wolf. The way the people were back in the day they were shamans, and they worked together and told stories and this caribou turned against the people and started to eat up everything that the people eat as well, and people started to become hungry, so they all go together and they started to pray do their shaman work so they did something very spiritual amongst themselves, they turned the caribou into a caribou without teeth, so they became vegetarians, and then they started migrating in search of food. Some of these people started to go hungry because they now needed food. This young shaman started to wonder what to do, so when the caribou came back he put on his caribou hide and walked towards the caribou to talk to them but the caribou didn't understand him anymore and they got scared. So they turned him into a caribou so he could follow them and find out where they were going. He wanted to talk to these people that were hunting along the way with bows and arrows and what not. When these people started to hunt this herd with the person, he was having a hard time running. He started running away and he was looking down and was always stumbling over, so he started to copy the caribou and looked up and didn't stumble anymore. He tried many times to turn back into a person but he forgot how. The person who turned him into a caribou told him how but now that he was a caribou he forgot how to do it because his brain had turned into caribou as well.

Joanne Barnaby: There has been quite a few conversations going on in recent years especially with the sharp decline of the caribou population and a lot of elders are talking about how our relationship with the caribou has been damaged. That a lot of the traditional laws that have been in place for thousands of years have been broken and there are things that are happening on the land where the land and habitat that the caribou depend on is being damaged and that there is a need to talk to the caribou again and a need to do ceremonies and try to repair that spiritual connection with the caribou and reconnect with the caribou and if we don't do this, they will never come back.

Do people have ideas at that level for what needs to be done and what we can be doing at the mine site and when should we be doing that: now, at closure? What should we be doing?

Bobby Algona: I forgot to add the spiritual aspect again. A lot of our elders, when they pass on the spiritual aspect of it all, sometimes our elders come back as animals or bugs or whatever and they pay us a visit again. I have noticed the ways of the animals and what they do and when they start to act a little differently that's when I look at that spiritual; it's a bridge to their soul.

Joanne Barnaby: Anything else on what needs to be done to help the caribou? Sometimes people are not comfortable not talking about this, but I have heard more and more elders saying we have to talk about this because it is urgent, or the caribou will be gone.

August Enzoe: I've been sitting at this program since way back 1996 or 1997, most of them that were here then, are now gone. I have never seen the records of what was said way back then. I am just wondering what happened to those records but I have never seen it. I have never seen the book. No one has told me anything. Towards caribou, we all live on caribou, everyone in this room. I don't care for store meat.

Joanne Barnaby: We are discussing your ideas on what we can do at Diavik to help the caribou return in the future, if and when they do come back here. We know you provided lots of guidance already but this is a chance to pull this all together.

You've seen the way they are making the North Country Rock Pile safe by changing the slopes, for example.

Rose Betsina: We used to come here with YKDFN with other Elders Jonas Fishbone, my uncle Philip Crapeau and Alex Mackenzie has passed on. There were no buildings like this. We used to live in a tent frame, those were the buildings that existed in this area. There were lots of berries, blueberries, and today it seems like I am lost. With the closure of the mine would there be any berries after on the land? Just look at Giant Mine, it's all contaminated trioxides. Today the population for the caribou is down and we used to see caribou on the shores. We never hit caribou with sticks or anything. What will happen to our future generations? The increase in prices, commodities. Once the reclamation is done, will there be any movement? Once they are done with the mine, maybe we should have a feeding of the fire that includes the mining company to make amends to the land and ask the spirits to return.

My husband drowned at Gordon Lake, we never did find his body. We went out there to Gordon Lake with the help of my sister Berna Martin to do a ceremony. My three older boys and girls wanted to go to the site again but no donations or help from other sources. It would be 30 years now and his body is still not retrieved. It is good to pay the land, it reminds people to respect the land. And for people who have not been on the land for a long time. Hopefully tomorrow we can pay respect to the land.

Joline Huskey: I wanted to mention about caribou and how it's important to us and my culture but also everyone around here. I have worked with elders for many years. I have been with the Tłı̨chǫ government since 2001. I worked with Louie Zoe, Dora, Dora's late husband Joe, late Harry Apples, and late Robert Mackenzie. I learned a lot from them. When they speak about wildlife about our connections to the land, its meaningful because I was raised by my parents who were both residential students. I learned English before I learned my native language. I learned a lot from Louie Zoe and his wife and my late mother. My grandmother and grandfather were alive they talked a lot about how they would live off the land. When I was really young I didn't understand the language, but as I got older I started to understand the stories. They told me that they sent them to residential schools so they could learn the white man's way and bring it back because times were changing. Thinking about that it's kind of like what is happening now with the caribou, also with animals. It's not too late to turn around how it changed the migration routes. I haven't been to Diavik since 2004 and I see a really big change, this place looks like half mall, half resort. How can you help spiritually with wildlife? How man turned to caribou and then he turned back and we have that kind of story. My grandmother told me the caribou gave birth to man and kept it in her hooves. When I see people here because we are so impacted by industry we get fuzzy and do not really think about our culture. When the (mine) worker comes back and I see people buying gifts for their children and they get caught up in stuff like that.

I am really happy to see Janelle here, she is really trying hard to learn. When she talks to me about fixing hide, I feel proud because I've only done it once with my grandmother Helen. This is something where we can encourage more youth. I am really concerned about the wildlife and I find that we are caribou people Like Dora was saying we should have more youth, when youth get together with the elders, they have a lot to learn. There are a lot of ways of involving youth, and they are the ones that are going to be impacted. If we don't continue to practice our culture it is going to die out.

Joanne Barnaby: We would really like to make sure you are comfortable with the ideas included with the closure plan.

Denecho Catholique: I remember the first time I was out in the barrenlands. I was 8 years old and we went to Campbell Lake. That was the first time we ever saw barrenlands and you would open the tent and see caribou walking. Now I go hunting for my grandpa August. Before it used to be so easy to get caribou. You go 20 km and now you go 100's of km to get caribou. The mines made an effect on that because they lost their route and we blocked it. Now we are going to cover their way (trails) with the rock.

I think you guys said its going to be closed 2023-2024. Everything closes, the caribou aren't going to say "oh okay its open now we can go that way." They are like old people, they forget their old routes.

Wayne Langenhan: I was thinking that this problem with mining and caribou, it's got to be more then this country, has there been anything done in any of the circumpolar countries that might be having the same problems with mines and caribou?

Joanne Barnaby: So learning from each other and coming up with solutions.

Wayne Langenhan: Two heads are better than one.

Joanne Barnaby: Anyone else?

Louie Zoe: Yes, as a citizen of Gamèti we used to see caribou every year. Now as citizens of caribou, it seems we cannot take care of them anymore. We had a forest fire and it destroyed the land by Gamèti and Behchokǫ̀ and also towards Yellowknife. The caribou would migrate there and now it's destroyed. The caribou migrate to the lake up to Great Bear Lake and all this was destroyed. We don't know where the caribou will find food now. In the past, when we had forest fire by Gamèti, we had a caribou habitat and it burned and they lost their food and it's been more than 20 years since that fire.

Joanne Barnaby: Clearly there has been a lot of loss due to the forest fires and that goes way beyond the mine site.

Natasha Thorpe: Maybe we should have the feed the fire ceremony, encouraging the connection to caribou, practicing ways to connect with caribou, while thinking in your mind what that looks like at closure.

Wayne Langenhan: Is there any way we can talk the mine into putting out a contest? There is a lot of people out there that would have ideas.

Natasha Thorpe: Make that a recommendation? I am putting the youth on the spot: what if you had to respond to Wayne, what would you say?

Louie Zoe: It's because of the wolf, even one wolf will have 7 or 8 pups at birth and when a caribou delivers, its only 1 calf. So if there was harvesting of the wolves, it would be good. It would help with the growth of the caribou population.

Celine Marlowe: You mean to support the movement of the wildlife around the mine, is it easier with one big slope or with the ramp?

August Enzoe: Yeah I have been thinking a long time now. This mine, you will never see caribou again, maybe one or two. What we are doing is for if it comes back.

Celine Marlowe: They know where to get food, a lot of the barrenland is burned so all the lichens are all burnt. Of course the caribou is not going back there.

Bobby Algona: When we are talking about caribou, we have to look at the other aspects out on the land. If we want to save the caribou we need to save the whole ecosystem. What do caribou

need? They don't look for dry, they want something moist and rich. We need to look at ways of protecting it. Used to be 30 or 40 years ago we had lots of snow. That's when everything was healthy. Without water our whole ecosystem won't be viable. We look at the whole industry. We need to look at ways to cut our emissions down. I don't know how we can get industry to cut down. They are always working towards growth. Industry makes a lot of things brand new, a lot of things are mined and a lot of things get outdated even before they get used.

When we need to think about saving our planet. I think industry will have to come up with ways of slowing down a bit. The stuff that you mine will be there for thousands of years, come back to stable conditions. That's what we tried to do with the mines at least one mine working at a time and learned from them. Maybe we should be looking at ways of slowing down a bit, otherwise we won't have a world anymore. Look at that big fire, look at the NWT we have had record-breaking fires the last couple of years. We are suffering as well because of the heat. I think we need to look at ways of at least slowing down a little bit, 5 or 10 years from now you can still mine it, it's not going anywhere.

Our younger generations want to go and work now, so we are losing our cultural language. Most of our young people in Kugluktuk, they don't speak our native language very much at all. When we look east they still speak their language more to the elders.

Joanne Barnaby: So in addition to trying to make things safe here for caribou, we also want to look at other animals. We want to look at the other animals as well. Shape things to help encourage denning areas once the mine is gone. If there are further ideas that you have please share them.

Denecho Catholique: If you want to protect caribou around the site and keep them coming through, I think what Bobby said was a good idea about putting bounties on the wolves. That would help to keep the caribou population up.

Joanne Barnaby: Is there anything Diavik can do in relation to wolves and caribou?

Colleen English: Not in relation to culling wolves. I think that the government has increased the cost for hides and carcases.

Wayne Langenhan: Maybe it's not worth their while because the government is cheap. Between the cost of fuel, wear and tear on their vehicles and snowmobiles, time away from their families.

Karin Clark: I can say a couple of words. But then I will do some homework tonight to make sure that I get it right tomorrow. The territorial government has been working with the Tłįchǫ Government to come up with an approach to manage predators, to do something about the wolf population and someone from the Tłįchǫ group might want to speak. They had wanted to do a harvesting program, getting people out on the land and harvesting wolves on the winter range of the Bathurst herd. It didn't happen this year but I am sure it is still in the works

for next year. The territorial government has increased the amount that they give for carcases and hides. I don't have the numbers but I will get them. The government has also committed to do some work, background research on looking at what other jurisdictions have done to manage and control wolf predators. Then come up with some sort of program to try to increase the harvest of wolves.

Wayne Langenhan: I wasn't blaming you personally.

Karin Clark: I know but I do want to get you the right information.

Kathy Arden: Is there current maps that show the areas that have been burned and how that affects the caribou migration?

Karin Clark: ENR maps out every year what areas were burned and I will try to get a map to show you tomorrow.

Colleen English: Management wise, there are a couple of things we can talk about, one of the best things (looking at map from a past session, areas are labeled in colours as to where to encourage/discourage wildlife), if we are talking about closure, for us (Gord and myself talking) we thought this was one of the best things that came out of the Panel session, is the idea about areas where we want caribou to travel, areas where we want caribou to be able to stay and hang out and areas where we don't want caribou to go. This was one of the clearest documents that has actually provided that type of feedback from the panel. It is one of those documents that we are looking to when those closure plans are being made so when we talked about the pile earlier today you will see exactly how your work has been translated.

August Enzoe: You are talking about caribou and we would like to know last summer and this year, were there any caribou on [East] island?

Dianne Dul: We had 11 sightings on the island last year and it will be in the presentation tomorrow where they were. Not big herds by no means, most of the sightings were one or two animals.

We also had two wolves yesterday and quite a few wolves this year.

END

May 14, 2016 DDMI TK Panel Session #9: Caribou

Joanne Barnaby: Agenda items –Dianne's presentation this morning, Karin's Presentation tomorrow.

Natasha Thorpe: **TK Panel: Wildlife Monitoring & Management Recommendations –Presentation of Past Recommendations**

Dianne Dul: **TK Panel Caribou Monitoring –Presentation**

Bobby Algona: I was wondering, I noticed that Ekati has a lot of mining cameras that are out on the field monitoring caribou. Does Diavik have these cameras on site as well monitoring movements around the site as well?

Dianne Dul: I think it was in 2013 we put 10 or 12 cameras out with the elders that came in and did the studies with us, put them in the areas that we did the scans or tried to find caribou. We put them all throughout and then went back to grab the cameras, and I think out of all the 10 cameras we had some bears, a couple wolverines, I think there was like 3 caribou and one moose. So yes we have done that. We have the cameras available, we have put them out. Also when we were trying to figure out the spot bears came on the island when we were having the huge number of bears on the island, we put cameras out for that as well. When we collected them it was mostly foxes and rabbits that we had on them, I think we had one bear and no caribou. Again that was already when we weren't having the larger number of caribou around on site but we do have them and we have put them up.

Nancy Kadlun: Just looking at the photo of the caribou with the collar don't you think that they should have lighter, skinnier collars?

Colleen English: The new geofence collars are amazingly light, the new ones they are focusing on now are the best ones. Very different from the traditional collars you are use to, like the one in the picture. The geofence collars are nice and light. As the technology gets better it has lessened the load on the animal.

Dianne Dul: Also the new geofence is different in what it can do. I do know a little bit about them, not a lot, but if you look at Diavik, they can actually set up an imaginary "fence" around Diavik or 10km from Diavik, so when that caribou comes across that imaginary fence, they can set it to ping more often. It would do that once it crossed the line. So you can actually monitor the caribou and see how fast they are moving and which way they are going. The technology has changed substantially and its pretty amazing what they can do with the little bit that I know about them.

Joanne Barnaby: Everyone is clear on what Diavik is doing to monitor caribou? (Yes) If you think of questions let me know.

We would like to break out into groups and last time we did it, we did men and women so if that's okay we will do that again? Please try to build on what you already said, if you can provide more detail on your other recommendations that would be good as well.

We have two different maps to choose from and we are working at getting the closure map that Gord had up yesterday.

Break

Small Groups **– Women's Group**

Question number 3- How will we know if caribou are safe on site after closure?

Joanne Barnaby: We have 4 images in front of us. Caribou pathways, image of mine in its current state, after closure image from Gord's presentation, image of the bigger area.

Nancy Kadlun: If there is so much caribou passing through the PKC there is so much contaminants they won't be safe.

Dianne Dul: Last time it was said you don't want caribou going through the PKC which is why they are keeping the barriers around it high so they can't go.

Joanne Barnaby: Nancy do you want additional ideas for those areas?

Joline Huskey: Caribou is just going to go anywhere even if the berms are high, what are you going to do after closure to deal with the PKC contaminates? Is it actually contaminated or is it going to be okay? Not really answered yet?

Wildlife is still going to roam regardless what we do. So how are we going to monitor this after 2030 this is how it's going to look right? Okay so we are going to have other animals going through once the noise and production stops, I am concerned about this PKC even though you have put a berm up.

Gord: On top of the black-PKC fines we will be putting rock on top, so the caribou will not be able to contact the material underneath, but the pond in the middle that will be different. It will be open, so wildlife could access it.

Joline Huskey: I asked that yesterday because there were a bunch of birds in the pond, but if it's contaminated what's going to happen with that?

Gord: It would go down to this pond to be tested and once everyone says it's okay then we will let it go on its own to the lake. And after 2030 it would just continue the same.

Nancy Kadlun: You can't keep birds away though? (No)

Kathy Arden: Is it actually contaminated?

Colleen English: Gord will present the toxicity report tomorrow.

Kathy Arden: Okay so we won't know until tomorrow about the water.

Colleen English: The water is tested, we actually re-use it. The water quality is generally okay, but the pH is elevated and there is quite a bit of suspended solids in the water. Both of these are the easiest things to treat by using the tundra streams to drain and filter the water. It's the slimes underneath that we had tested and are seen as "the problem".

No monitoring planned after 2030 unless another party continued it. That is the plan as long as all is good.

Kathy Arden: I would imagine it would be something like the government monitoring caribou management.

Going back to the question, I would have to assume we would know through the hunters that are in the area and observing, and then they would take that to the government.

Those ramps, I am always amazed how caribou don't drown if they go through the ice. So if an animal were to drown inside the pits after would it be a natural thing or because of the pit? I think it would be natural.

Colleen English: That's more like post 2030 observations so if you took that a step back to when the mine is closed but they are still monitoring, what would that look like? Interaction monitoring, at the cliff, the pit entrances, if the caribou got out there on the dikes, would they use the ramps or climb, are the sides of the dike fine?

Kathy Arden: The thing is we don't know when or how many caribou are going to come back. It might take a long time, and it would have to be long term monitoring by everyone. Naturally I think we would all take responsibility to report observations of any animal. I think once it's all gone, I think it will be a natural curiosity of the animals to come back and see what happened here.

Joanne Barnaby: At what point is hunting allowed again onsite?

Colleen English: The communities are the ones that dictated the no hunting on site so I have no idea when that would change.

Kathy Arden: But there is still Ekati so that will still have an effect on this even if we are done.

Janelle Nitsiza: Caribou are sensitive. Does Ekati have a TK panel?

Colleen English: No but specifically to Jay-Pipe a TK advisory committee was mandated as part of the approval. So, something similar would be formed.

Chloe Dragon Smith: Wouldn't it make sense to train community members, hunters and trappers as well as youth, other community members for the jobs prior to closure through either Diavik or GNWT, or EMAB so that after closure we can continue to monitor it ourselves through EMAB or the GNWT which would create jobs for them?

Kathy Arden: When you go and observe its 32-64 minutes, take them out and train them on what to look for.

Chloe Dragon Smith: That would create jobs for people and youth as well.

Karin Clark: We are currently bringing groups together to have a method for observation that it is the same across the board and then we can actually compare results because it's all done the same way.

Chloe Dragon Smith: I think it's a huge opportunity.

Kathy Arden: Question on the red areas. After the mine is closed, how contaminated is the waste area if everything is all taken away?

Chloe Dragon Smith: If we were to talk about training community monitors is that something that Diavik would pay for or the government?

Joanne Barnaby: Would that be open to hunters and trappers that don't have other jobs?

Colleen English: Diavik has done community training programs before, because then Diavik has a pool to draw from of people who are trained and this I see as a similar opportunity.

Celine Marlowe: Do they [Diavik] have a community liaison person?

Colleen English: Yes, I don't remember who the Łutsel K'e person is. I will find the name and get back to you.

Joanne Barnaby: **Question 4** Are there further actions we should take to draw them to places, or away from places?

Some people have said caribou are not going to return, some say they will but we don't know when.

Keeping one side of the North Country Rock Pile really steep to keep them away is there other things we should do?

Joline Huskey: What if they have monitors out there?

Nancy Kadlun: They will have lots of activity so can't they tell them when they see animals like they do now?

Dianne Dul: You could use the collars as a trigger to when to come back and monitor, if they pass this line then you come in and monitor.

Chloe Dragon Smith: Is there any opportunity to partner with Ekati, say the collar signal goes off maybe Ekati can come over to check? It would save money.

Dianne Dul: Put it in as a recommendation; remember that Ekati owns 40% of Diavik.

Kathy Arden: Put moss bags on the tundra to help filter the water.

Joanne Barnaby: The response was not clear, so maybe we need to emphasize the need to help the natural filtering system.

Nancy Kadlun: Make the water in the PKC safe instead of discouraging animals from going there that will go there anyway.

Joanne Barnaby: What would be done now if caribou came into this area?

Dianne Dul: Herding, guide them out on foot so that you don't scare them and they don't run.

Janelle Nitsiza: So that's what it would look like at closure. It's not very attractive.

Joanne Barnaby: There have been some traditional knowledge that has seen caribou returning 30 years later, like when it's been burned.

They may be drawn to the rock pile because of the height. Safety from predators and relief from insects.

Janelle Nitsiza: But they don't like rocks, it hurts their hooves.

Joanne Barnaby: How old is that test pile?

Colleen English: About 7 years, maybe. I'd have to double check. (12 years)

Nancy Kadlun: In the future when this is all healed, 100 years from now, and they come back and say there are lots of diamonds, can we tell them no they can't use the reclaimed areas again?

Kathy Arden: There will be records of what has happened here.

Joline Huskey: Looking at the traditional routes from the presentation, I would like to lay this map of the mine over the top here to actually see what the routes were that were actually taken. If we want them to come back we need to create that natural route again.

End of Women's Group

Men's Group

Natasha Thorpe: Does anyone have any advice on how they want to start right now. Anything burning that you want to share around monitoring? We are focusing on caribou in this session.

Question 2 – At and after closure, what can be done to support safe movement of wildlife on/around site?

August Enzoe: I just see this mine right on [East] island, the other mines are on the mainland so for me right now on this island we can't go out any place. The caribou in the old days there would be lots of caribou here. I've been here many years monitoring caribou around here and the last two or three years the caribou are still going down. Now on this island right now they have nothing to feed on, nothing. I don't know if the grounds squirrels are still around. The foxes they come here on the ice for summer. It's different, they have to swim across so for monitoring caribou they are doing monitoring every year, like the lady was saying. For me, I am thinking the caribou are coming back from the calving grounds in June or July that's the time they should be monitoring for caribou around east side and west side. We don't worry too much about caribou right now because we know they will come back. If there is caribou, for now we won't see too many caribou around this island, the mines on the main land are different. I don't worry too much about the caribou on this island now the way they are monitoring it.

Bobby Algona: The biggest question we all have is the place where chemicals are stored, the North Inlet and also the PKC containment area. I don't know how we can really keep the caribou away. How are we going to do that? There are always things that need to be looked over a little closer because, in my mind, if you are going to keep these animals away you are going to have to build walls around these areas, especially around the contaminated areas. Because if we build a berm, they will find ways to climb over. In the springtime when there is snow, they will still get into those areas. I have tried hard thinking of ways to keep the caribou away until they are completely free or drinkable.

Again this spot in the middle PKC water that will be left behind, they are going to be drinking that if they get over the berm. I am having a hard time thinking of ways to keep the caribou away.

Natasha Thorpe: One of the recommendations the TK panel made in the past was: "Use traditional techniques like flags or trees or inuksuit to keep caribou away from areas that are unsafe both near and far from the site" so you could make some drawings on the map about where you think some of those traditional methods could be applied to keep caribou away from areas.

Denecho Catholique: There is another way, too, if you put big boulders around or in it; caribou won't go on big boulders.

Bobby Algona: Even if you put boulders here to keep the animals away, the boulders are just going to sink anyway. I think it is still going to be soft year round because of what the PK slurry is. I think Gord is going to give us a presentation on the slimes.

Gord: All that black material which is the processed kimberlite, at closure we will put rock on top of that. So that the caribou can't contact that black material. It seemed like everyone was okay with that. The question is more about the pond in the middle. It's in a bowl so rain and snow will melt and a pond will form there.

Natasha Thorpe: Denecho had the recommendation to put boulders around the pond to keep caribou away and that sounds like what you are saying. What size?

Gord: We haven't figured out that yet but we think it's a good idea to try to keep animals away from it but we still have to figure out the detail.

Natasha Thorpe: That is an example of a recommendation you could put forward. Building on what you have already shared.

Wayne Langenhan: I think we are jumping the gun here a little bit on trying to figure out a way, when Gord has not made his presentation yet and we don't know what his recommendations are going to be or what can be done so far as to what was recommended earlier in previous meetings. About the pond, I think we should just leave it alone right now until we find out more information from Gord.

August Enzoe: What about a fence?

Gord: The concern I have always heard about fences is that it becomes something that wolves will use to drive caribou up against and that we should try to avoid fences but maybe that's a better thing than allowing them in the pond?

August Enzoe: People are around monitoring the mine everyday so you could try it.

Wayne Langenhan: What are the dimensions of that pond? I am talking about yards or feet.

Gord: That (pointing to map) is about the right scale but I have to get you the dimensions because I am not very good in those units off the top of my head.

Wayne Langenhan: When you start tearing down these massive buildings of steel you could weld a network or cage right over top of the whole works and it would be finished, covered over.

August Enzoe: A few sessions ago we were talking about the jello or slush at the bottom of that. Are they doing anything towards that, monitoring it?

Louie Zoe: The PKC pond that we are talking about, once they cover it with gravel, when it rains or snow melts, if they put up a fence we don't know how long it will last. So if they use boulders around the pond the boulders might last longer than the fence itself. Once it is covered with gravel where there is rain or snow melts it has to be managed where it's going to drain so we need to manage the drainage part.

At the closure once they manage the drainage I think it will be good and will last a long time if we do it right the first time.

Wayne Langenhan: In previous meetings, Gord was telling us the sludge was right at the bottom and it was too much money to pump out to ship out so that they would just leave it there because it would stay at the bottom and not come to the surface. So maybe we should ask him how safe that water is to drink on top. It might be better to just leave it alone. It's hard to make a decision on this stuff right now because we don't have enough information on this as far as I am concerned. I think we should wait until after Gord's presentation to tackle some of these things. Maybe we could switch the agenda to do this more after his presentation.

Natasha Thorpe: Okay we can focus on the question: **what can be done to support movement of wildlife on and around the site?** Right now we have fences, boulders, inuksuit, trees.

Denecho Catholique: In Artillery Lake back in the olden days they use to put boulders like 6 feet high to look like people so it would drive the caribou in one direction maybe that's a good way to keep caribou away from it.

Bobby Algona: I have been thinking about this for a little while. I have seen this around the communities. They want to keep birds away and you put an owl decoy there to keep the other birds away. If we could find some ways to make decoys and directing the animals away but I don't know if you were to use a wolf decoy if it would then attract the wolves, I don't know. Test something, maybe noise.

Natasha Thorpe: Someone in the past suggested wolf noises, or whistles.

Denecho Catholique: In my hunting experience, animals are driven away by sounds, high pitch sounds so maybe a whistle.

Natasha Thorpe: From traditional knowledge we know that caribou have really good senses. You have just talked about their hearing sense, their visual sense (looking at decoys.) What about something to do with smell or any other sense?

Denecho Catholique: If you scent around there, say you use wolf scent around that pond, it's going to drive caribou away but it is also going to bring in wolves and predators.

August Enzoe: Way back in the 90's we did talk about this. They should try this like they are saying. For me it feels like we are starting over again but this is for the future, the mine future. It's not too late but I am just saying these are things we did say back then.

Natasha Thorpe: I think maybe the difference is that the mine is so busy now that it's naturally keeping caribou away but what we are talking about is when the mine is not here anymore

Bobby Algona: We want caribou to go back on the island. We're thinking of ways to keep the caribou away from the contaminated areas. In my mind if we keep the caribou away with these methods that we are trying to come up with the animals will not go on the island anymore anyway. We are trying to encourage the caribou migration to go over the island as well. The ramps we are trying to build right along the migration route. I don't know how to do this, maybe we need to keep the caribou away from the island.

Wayne Langenhan: Bobby I have to agree with you on this here. We are fighting two ways, we are fighting to get the caribou back and then we are fighting to keep them away, so it has to be one way or the other. Maybe what we should do is count this island as a write off and they will find a different route. There is no food, there is a lot of contamination on this island and it would probably be doing more harm trying to open up parts of it to the caribou because even if we were to set up decoys or whistles to keep them off the island who would be here to check these things? After a certain period of time, these things wear out. Things would disintegrate after a while. I think the best way is to figure out a way to close the whole island.

Natasha Thorpe: In the past you have talked as a group about this. If my memory serves me I understood you wanted to keep caribou away but, you know caribou have minds of their own and no matter what you do they may come back. So that's why you gave these recommendations around planning just in case they do come back here.

Maybe the recommendation is that, in general, you would like to keep caribou away but if they do make it through then what? How are you going to support movement on or around the site or through the site?

Louie Zoe: The PKC pond that would be left behind and the North Country Rock Pile is very high and maybe they should spread it out, make it the 3:1 ratio. At the same time we may discourage the caribou from going on there but we need to keep meeting and keep learning from each other.

Colleen English: How do caribou sense water? Is it by smell, is it by sight?

Bobby Algona: All animals have this instinct in them. They smell for many hundreds of miles but when I look at the smells around the mines, caribou are still coming around but they won't come and eat around those areas. The way I look at it right now all animals around the north they are all giving their sense of distress right now that people are not taking a closer look at. It's not only the caribou that I am talking about; it's all animals in the north. Our ecosystem is suffering right now because of low moisture content and when those plants become very brittle; they will not eat the brittle plants.

Humans have the same system telling us that this food is not healthy for us, allergies.

Snow algae, I raised that question yesterday, is it coming from the mine? The caribou are rerouting themselves.

Wayne Langenhan: We have three questions up on the board and it's very hard to put an answer to these questions because some want the caribou to come and some don't. We all agree the caribou will go where they please regardless. There won't be anyone here to maintain the property down the line.

Natasha Thorpe: We are talking about the time of closure, 2022 until 2030. The reason you need to give your advice now is because they are preparing the closure plan. So at that time there will be people here, we are not focusing on after 2030 right now.

Wayne Langenhan: Yes but what we are talking about will continue after the mine closes down... well this rock pile will still be here we aren't going to move that. So what we have to do with the slopes and such that's fine by me but as for trying to contain these ponds, I don't see how we can do that satisfactory to continue after the 2030 period. There may be a way, but animals in other areas of the world that the water is bad from some sort of mining or some other activity they come down to a watering hole, they drink it, they die. The carcasses are found beside the hole or in it so it doesn't take the animals long to learn that the water is bad. The caribou are going to go there regardless of what we do and I don't see how we are going to stop them from going on that island no matter what we do.

So I am saying to attract the caribou or how safe the site should be maybe we could do a little bit with that but to support movement of the wildlife I don't believe that can be accomplished. They are going to keep going where they want to go.

Natasha Thorpe: One example to support movement was the very specific advice you gave about the North Country Rock Pile. Is that the only thing you want to do on the site to support movement through?

(Wayne Langenhan nods) For Wayne it is?

Bobby Algona: I am having a hard time with the contaminated areas especially the PKC and the North Inlet. I am having a hard time finding ways to bring caribou back to this island.

Natasha Thorpe: This is hard work and I understand you are frustrated.

Denecho Catholique: I was wondering, if caribou or any animal are driven to or driven away from fire so I was wondering, can you control burn everything so the caribou stay away from it for a while and caribou would know that when there is a fire there will be food again in the future?

Bobby Algona: Last year we came up with ideas about the PKC and one was to truck it all out. If we did take all that slurry and every contamination out we would find ways of encouraging caribou to come back on the island. That's the only way I could think of encouraging caribou to come back on the island. Yet it's not an option.

August Enzoe: How many years have they got left to work on this island, 5 years I think. We can come up with something by then.

Big Group – Men's presentation

Bobby Algona: We didn't even put one mark on the board all we did was talk and think about ways of fixing this island somehow. North Country Rock Pile being smaller than the island. It's what we were trying to encourage the caribou to come or move around the North Country Rock Pile. How are we going to do that? We were thinking of ways to encourage the caribou to come but also ways to discourage them to come. We are making ramps and everything around the PKC area which is very close to the North Country Rock Pile and also the North Inlet. If we are to completely keep those animals away from those areas, what does North Country Rock Pile become? All those ramps we did, caribou will not go there anyway. If we start to discourage the animals to keep away from these areas we are keeping the caribou away from the North Country Rock Pile as well. I know that last session we had we came up with trucking everything that's contaminated along with the landfill out. If we could remove those contaminated things then we could encourage the caribou to come back. It was the suggestion that we gave to Diavik last year, we hoped that they would truck everything out, and then we would want to encourage them to come. But I heard the words "not an option."

The whole island itself I think about it all being contaminated, the pink snow, the ammonia. In my mind, maybe we should discourage the animals to come if we want to keep them healthy. And we are finding ways to build ramps and such but its right beside the PKC where we don't want the animals to come. That's really hard on my mind, I don't know. I think if we for the time being we came up with ways of looking at options maybe this whole island will be a write off. How are we going to direct caribou if we don't want them to come here at all.

Ways to direct Caribou

- Boulders (eg. Around PKC)
- Boulder fences
- Traditional fences (trees, inuksuit, boulders)
- Controlled burn
- Decoys
    - Noise (high pitch, wolf, bells)
    - Physical shapes (eg. Owl, wolf)

Natasha Thorpe: Any other comments from the men?

August Enzoe: My mind caught about Artillery Lake, it's a long lake about 40 miles long and about 20 miles wide at the east arm of Great Slave Lake. There is a place there, a big point, in the 1930's there use to be a village there. And the caribou came there and would swim across and then in 1960's everything changed, the caribou don't swim across there anymore. They go a different way. There was no mine there but somehow it happened to the people there.

Women's Presentation

Joline Huskey: We didn't put anything on a map, we thought about a few suggestions about long term monitoring after the mine closes and Chloe brought up a good idea about having joint training in wildlife monitoring. A big concern was about the PKC and the drainage, is it going to be covered, it was a good thing Gord was there for a few minutes, he explained that the PKC would be covered with boulders and there will still be a pond there, natural rain water and snow melting and our concern was that, is it contaminated? And he said there was going to be some sort of drainage through the ponds and then filter out to Lac de Gras. Our concern too was about wildlife, birds will go to the ponds we can't keep them away, rodents, small animals they are all going to come in. It's going to be hard to not attract them here. We brought up another concern about the North Country Rock Pile. Right now you have a map that you wrote previously with the natural trail sites and it was engineered on top of the North Country Rock Pile. We talked about how can we attract and how can we keep them away, and when this is all closed I was really listening and about what Natasha presented yesterday about the Tłı̨chǫ has the natural trails already on the website and same with the Yellowknives Dene First Nation. I suggested overlaying the maps to see where the traditional trails were to make sure the trails we are making match up and trying to visualize it. And maybe that way when this is all done maybe they (caribou) would come, no matter what we do to try to not make them come but eventually they will come. In 2023 or 2024 the mine is going to close then we have to clean up to the best of our abilities and see if caribou do come back, eventually they will come back. And Diavik being part of Ekati, even when this is closed, Ekati will still be running, that they could continue the monitoring after Diavik is closed.

Chloe Dragon Smith: I think what we figured out is that there are a lot of 'ifs'. We don't know when the water will not be contaminated and if it will not be contaminated so it's hard to say where we should be diverting the caribou so that just points to the importance of monitoring so we can know if the places are contaminated or not.

Joanne Barnaby: In our group I think everyone agreed that we are not likely to see caribou coming back in the short term but we need to think ahead for if/when they do we make sure they are safe.

Creating these slopes and formations would help for then.

I also posed a question as to when the island would be open for hunting and Colleen said it was at the wishes of the communities to not hunt on the island but when would that change? Obviously Diavik has to discuss that with the communities and the regulators.

Natasha Thorpe: This is not easy work, you come here and you work hard. One of the reasons it's really hard is because we push you to think in different ways. You know that caribou and people are one. Using your expertise to try to predict the future is the same as what the sciences are doing, forecasting. Karin will talk about that - forecasting - and to do the best you can. If you get frustrated just remember those things. Again I thank you for your patience.

Lunch Break

Gord Macdonald: **Presentation - Characterization of Extra-Fine Processed Kimberlite**

Wayne Langenhan: So does that mean it is safe for caribou and humans? PKC water?

Gord Macdonald: We still have to test that. But we expect, due to the aquatic test results, that it should be okay but we still need to confirm the people and wildlife portion.

Wayne Langenhan: When will the next step be taken to test for human and wildlife consumption?

Gord Macdonald: We have released a risk assessment that tries to determine that if a caribou of a certain size came on the island and ate this all this combined what would it do to the caribou? That's out for review right now to try and get everyone to agree on the safe level for a caribou. Then we can go back. We should know by the end of the year.

Wayne Langenhan: So who would determine whether it is safe or not, would it just come from head office or from a scientific evaluation or how would you arrive at that?

Gord Macdonald: We hire consultants on our behalf to propose what were thought of as safe levels and those are now being reviewed. I expect it will get a lot of review and a lot of discussion.

Bobby Algona: The number of days they tested was 21 days but you look at those again, I am always looking at it very long term plus you are recycling the PKC water all the time with other chemicals. Did they check that with other chemicals as well? Did they do a chemical sample of that as well?

Gord Macdonald: The testing we did was on the slimes and water that is there right now. Which is the worst-case scenario because at closure we will take the water out and clean it, and then refill it with clean water.

Denecho Catholique: So the water quality around the mine is good?

Gord Macdonald: Yes, generally it is good. It is not as good as Lac de Gras by any means particularly the water in the PKC but it is good enough for aquatic life to live in it. If Lac de Gras was like that we wouldn't be happy and you wouldn't be happy but for water in the middle of an industrial facility it is really good.

As well as that study we committed to doing, and we still have a little bit more to do on and it will be interesting to see how the scientific community reviews that report as well and what you think of it, there was also a lot of discussion about the slimes. We don't like it, stop producing it, and get rid of it. There was lots of discussion about sending it to Edmonton and we understand that and we would love to be able to have it economically disappear, but the reality is that it is

here and it is something we have to manage on site. But we share your view that it would be nice if we didn't have that or if we weren't continuing to produce as much of it or if we had another place to put that. We have two programs that are underway trying to help with the problem of the slimes. One thing is a change in our process plant. PK is a waste product from there. And it comes out as fine processed kimberlite and that is what makes the slimes. Then there is the coarse PK which is like sand. For the last 10 year the process plant has been producing 70% fine and 30% coarse out of the plant. We have now spent a lot of money in the plant to change that around so that we create almost the opposite, a lot less fine and more coarse. And we are now ready to run it as a trial to produce 30% fine and 70% course out of the plant. We have approval to do a trial, starting June 2016 for one year, from the water board.

The other one we are looking at which may have an even bigger potential opportunity for us, we are looking at the feasibility of putting some of the PK back into the underground where it came from. It can't happen today because we don't have an underground mine that isn't actively being mined but by about 2020 we will start to have space in the underground to put some of this material. It is going to require both some engineering work to find out if we can put that material back in there safely but also some permitting work to make sure the regulators and all of you will allow us to put it back in there as well. We view it as a better long-term option then leaving it up on the surface. We wouldn't be able to get it all back under but I would like to target putting as much of the slimes down there as possible.

Kathy Arden: The other diamond mines in the world do they have this problem as well and what do they do?

Gord Macdonald: I am not very worldly focused but I do know about Ekati's operation. Certainly they have the exact same thing, they have the same thing in their Long Lake facility and the solution that they have been moving to is similar to this, they have moved to putting all of their tailings into one of the open pits.

Bobby Algona: So the trial starts in June. That is good to hear that some things are being tested now. In my mind it should have been done early on. I am happy you are doing that now. But at least it is something to work on and it is good you are doing this.

Gord Macdonald: It's not like we didn't think about this but the change in technology over the last 10 years has allowed us to try this.

Joline Huskey: I was thinking about the reports you are presenting and we have elders here and not only for the elders but for me to better understand it's better to have stuff more visual and seeing from before the impact or destruction that the mine did and then the process of making it right. And you are talking about jelly or slime it would better for us to see so our elders would better understand but also us. What I have learned from the culture is its better to see before the damage is done then after and try to make it better and that way we would better understand the written report because not all of us read and write and its good that interpreters are here that could probably explain it, but it would be good for interpreters to get the presentations

before because they usually prepare themselves for meetings like this because if there is not a word in our language they have time to look it up.

Gord Macdonald: It would be easier to be able to see it.

Joline Huskey: So maybe when we go on our tour you can describe this is where you got it from.

Gord Macdonald: I can show you. It's (the slime) just at the bottom of the pond now so you can't see it but you can see the other ones. I can get you a jar of slimes to show you.

Joline Huskey: It's just better for myself as well to see.

Gord Macdonald: I would love to tell you that we have the final answer to the pond and you can now go forward but we don't have that yet because there are still things we are trying to figure out and there is still some uncertainty. If that trial works it could very much change how it might look at the end, if we put material back in the underground maybe there won't be a pond on the surface, so there are a lot of things that still may change. Maybe that's a good question for the facilitators as well is how do you work that kind of change into what we are asking you. We are asking you for help on how we can monitor caribou and you can say well it depends on what is going to happen here and maybe for today that's what we have to say. And if we come back to you and say well we have solved this problem, we aren't going to have a pond there anymore, then you can change again as well and tell us how we monitor differently.

Joanne Barnaby: In the break out work we did this morning I think a very basic question people had was whether the water in that pond is going to be safe for wildlife or humans before you walk away.

Gord Macdonald: Yes, because when we say we are done in 2030 we mean "2030 and everybody is happy and we get our deposit back".

Wayne Langenhan: I don't know if you covered this or not but is there some way that you can pump a chemical into the slime to change the properties of the slimes, like shotcrete?

Gord Macdonald: We don't know of any chemicals that would solve that issue right now. We have looked at chemical solutions but most seem to create more problems.

Wayne Langenhan: The volume of that pond there where that slime is, did you figure out the approximate volume of the slime in the pond right now?

Gord Macdonald: We have an estimate but I can't remember what it is. But I will get it.

Wayne Langenhan: How far are those drifts that you have at the bottom of the pits? Which way do they extend and do they go under that pond or are they far away?

Gord Macdonald: Where you see the pits, that's how far away they are; they are right underneath the open pits.

Wayne Langenhan: That slime, say there is a pit here and you are down below, which way do your drifts run, do they run towards the PKC?

Gord: They run in a circle because the ore body is straight down the middle of the pits.

Wayne Langenhan: Oh so you aren't going outwards at all.

Gord: No it's straight down and right around the kimberlite. It would be a surface pipeline to get the PK to the pits or underground.

Wayne Langenhan: How far approximately is it from the slime pond to the nearest pit?

Gord: More than 5km less than 10 km, it would have to be a surface pipeline for the fines and a truck for the coarse.

Wayne Langenhan: Okay thanks

Gord: The slimes are about 50 meters deep right now.

Joanne Barnaby: If you were to move the slimes into the pits after mining is complete would it be the water sitting within the pits that keeps the slimes at the bottom, would it be the water pressure that would keep the slimes down there?

Gord: In the pit, yes, once you put everything in there, then fill it with water, yes the water will keep it down there.

August Enzoe: The thing we are talking about slimes, is it growing or is it staying the same?

Gord: It is growing. We are continuing to add to it and it is continuing to get deeper.

August Enzoe: How big will it be at the end?

Gord: It could be another 20 meters thick at the end of production.

August Enzoe: That's what we are worrying about.

Gord: Exactly, that's what we will start with for closure.

August Enzoe: Have you tried anything to get rid of it? Like shipping out?

Gord: Not shipping out, it is ours to manage and deal with at site. But these are the initiatives we have going forward now. So we have made the change in the plant we are just ready to trial it and the other big one is figuring out if we can put it back where it came from -back in the underground, that might be a more stable long term solution.

August Enzoe: It's coming from the mine somewhere?

Gord: It comes from the process plant.

August Enzoe: That's a tough one; we have to get rid of it somehow.

Janelle Nitsiza: Would we be able to take a tour of the process plant? To give our elders a visual *(accommodated on June 15th).*

Gord: Can I get back to you on that? We will see if we can arrange it.

Kathy Arden: Going back to putting the slimes in the pits, it would be pushed off into the side drifts because it sounds like there is a lot of it and then once the pits filled the pressure from the water would keep it in those drifts and at the bottom?

Gord: That is exactly right.

Denecho Catholique: I am wondering about the water pit by the airport. On a scale of 1-5 how would you rate it that it's contaminated?

Gord: The North Inlet. If I use a very broad use of the word contaminated, we can't discharge it into the lake without treating, so yes, I would have to say it is contaminated. We are not allowed to pump that water into Lac de Gras without treating it.

Denecho Catholique: Do you have any photos of the water washing up on shore along the North Inlet?

Gord: Yeah we might have some.

Denecho Catholique: Because I would like to see what the water does to the land while it sits there over time.

Gord: Is it exposed right now or snow drifted? It is a very interesting thing to walk around that shoreline because you can see where some of the fines have settled on the rock and things. Let me see if we can find some pictures and see if we can go and look at that.

Denecho Catholique: Thank you

Gord: Thank you

Celine Marlowe: Who's got the answer for the red snow?

Colleen English: First article said that they actually use it at spas for skin treatments. The two scientific answers is that it is an algae, a snow algae, the pink is the most common one. There are over 60 different species of snow algae. A scientific reference says that some people's digestive systems don't tolerate it well and that bacteria can grow on it. The botanical classification of the algae says that it is a laxative.

Bobby Algona: That's what the animals are showing us, the stress signals that they are looking at. It's not only in our territory or the north as well, I see this all over the world now too. We have trappers telling us of very low numbers of rats in the Mackenzie Delta. I think it might have something to do with the snow that is being produced around the north and around the world for that

matter. When we think about that snow we have never been accustomed to it before, we have never seen it before. My nephew travels a lot he is a very healthy man and family traveling on the land still living in Contwoyto Lake doing lots of work out on the land and they are the ones finding some of the contaminants or snow out on the tundra. I think that is what is making the stress signals that I see in species the whales, the caribou, the polar bears, the muskrats and beavers, it's all over. Can we have more core samples keeping an eye on those things?

Its very, very dry right now, maybe it's because of these contaminants that we have coming into these areas now.

I think about those relatives also when you look at the traditional way of life and we talk about it a lot and express ourselves very carefully and we need to have some concrete evidence out on the tundra. The way we express ourselves is through traditional knowledge and then all of a sudden we are having to have a hard time with our weather and our ecosystem. Just 50 years ago, I couldn't even speak a word of English and all of a sudden I am having to deal with contamination around the air, the water quality and the air quality. Industry does not care for traditional knowledge in my opinion. That's what I keep coming up with in my opinion. I see that all over the world mining companies going into countries where the natives were very stable at one time.

We as natives have had air and our water was very stable and our predictions were very stable at one time. We predicted weather very precisely when it was very stable. I am pretty sure the industries are not willing to slow down for any distress signals the animals are sending. I don't think the industry is going to slow down anytime soon. And the way the air is going right now and the pollution and what we have in this world right now, I don't think we have very long to stay very stable. I am feeling with all this ice and everything else being gone, and our water not long after that. How I am to deal with those things in my mind. I have a big family and in my mind, Inuit, natives all across Russia and North America have big families and even my neighbours to the south of me they are all a part of my family too, we all lived and grew together on the land and lived stably for a long time. We may have had a hard time starving and that but that was nature due to caribou being routed though different channels. We need to be looking at some of those things. What we have here is some things get broken and they get thrown away, they don't even get used and the industry has to make them all over again. Make more pollution in the air, we need to look at better ways of looking things now because I don't know how long we can have animals out in our part of the world very soon. There will be some species gone very soon, maybe 20 years, maybe 30 years. Looking at the weather all over the world people are suffering, along with industry and nature itself it's really, really hard time.

Our water and land is all different, everything we have is totally different then what we grew up with 50 years ago. Seven years I lived in total freedom with my family before I went to school, that was my total freedom. Not one contact with any other part of the world and I can see the older people then myself they have had total freedom for many, many year and all of a sudden they have to change too and that is very sad to me and those are some of the things that we

need to think about and the industry needs to understand our traditional knowledge ways of thinking and doing things, this as well how we lived with animals.

Natasha Thorpe: When the Jay Pipe decision came down there was also a decision that came with it that a traditional knowledge panel has to be put together as well, and that provides another place for traditional knowledge into the mining industry.

Denecho Catholique: I was just wondering what the water pit, what are you going to do with all the rocks that are in and around it? Are they going to take it out and put it on land?

Gord: The North Inlet rocks, there are no plans right now. We are hoping it will be okay, we do have some challenges with the water quality, but mostly there are some problems with the sediments, with hydrocarbon contamination.

Joline Huskey: When you were doing your presentation you talked about leaving the slimes as it is and also doing more testing for human and wildlife consumption and also the second option was putting it in the pit. So the engineering work that you provided now is like for option 1 right? Leaving it as it is for tailings. How would it look like if it was decided to go in the pit?

Gord: Haven't done that work yet, as to what it would look like and it would depend on how much goes into the pit, and where.

Nancy Kadlun: We have so much diamonds and gold and in the future what if Diavik wants to come back because we are rich with Diamonds?

Gord: We would love to be able to come back.

Colleen English: We are going to go over what the plan is for the tour this afternoon.

END

May 15, 2016 DDMI TK Panel Session #9: Caribou

Celine Marlowe: Opening prayer

Joanne Barnaby: Overview of Agenda

Karin Clark: **Presentation – Summary of ENR Caribou Monitoring Initiatives**

Natasha Thorpe: You were mentioning the other night the work that ENR is supporting. I know in addition to Tłı̨chǫ, CIMP is supporting the Yellowknives Dene and the other groups across the range in their caribou work.

Karin Clark: You are absolutely right, and yes there may be other funding opportunities. I don't know but definitely these are approaches that can be used across the board by any organization that is interested in using this approach and contributing to that set of information.

Denecho Catholique: I am curious about the map on the first page, the global map. See where the grey part number 12 it is labeled uncertain but that's by the mines here. We all know the caribou are declined there because they are blocked by the mines. I know because when I was a kid we use to see caribou by the thousands by Artillery Lake. It was just like hills moving and you don't see that now; you'd be lucky to see 2 caribou.

Karin Clark: Thank you. You are very observant. Its a bit tricky to see where the Bathurst Range might fit in there and obviously I don't know what number it is but there is overlap between caribou ranges. This could refer to another herd.

Wayne Langenhan: This map here says it's from 2009, that's 7 years ago. There is a lot on that map that has already changed. You can't go by that map.

Karin Clark: You are right. We don't have a map that is anymore recent than that. I would say the situation in the NWT hasn't changed much and probably since that time we've got information on the Bluenose Herd that shows it's in decline.

Nancy Kadlun: The calves have declined by 20%. When you put those pictures about the wolves. Why don't you put the sport hunters as well by the wolves? The calves are declining because of the sport hunters that are coming in and killing all these bulls. How can they not be declining with the sport hunters killing the bulls?

Karin Clark: **ENR Presentation continued**

Gord: The GNWT has a huge area to be managing and collecting information on. We have a very small focused area, how does the information that we provide link to the work that you need to do?

Karin Clark: That's a really good question. I think we've done a poor job in the past of using all the information that we collect ourselves, and the information we get from mines, so definitely an area for improvement. We are starting to use computer models so we are using computers as a tool to help us bring all this information together and make predictions about how caribou are being affected. That model relies on behavioural information, how caribou are responding when they are close to mines, when they are far from mines. It will rely on the movements both near and far to mines and other developments (roads) so I really see the use of these computer tools being really important to bring all that information together. The system is complex. There are a lot of factors influencing the caribou; predators, weather, people, industry, insects, food. It's really hard for us to just put that all together and understand how the herd is doing and predicting how the herd might do in the future.

Gord: It echos my view that we are not - in this issue - we are not data poor. It's the link between the data and the understanding of the data that we are all probably struggling with the most. It's not a lack of data. We continue to get good data, probably some of the best in the world going on here, it's just tough to understand what it all means.

Karin Clark: Yes I completely agree. ENR and government in the past and, even today, we do a really good job of counting animals but we need to do a better job of looking at the other factors that are influencing caribou populations. We are trying to make improvements.

Natasha Thorpe: I remember us speaking about this the other day. It's ENR doing a lot of the counting, but there are a lot of the recommendations that are coming from the community for community based monitoring and traditional knowledge integration. There is this move towards spending more time on the land trying to really understand caribou and wolves and other animals out there.

Karin Clark: Sciences might rely on computer models to help us with the big picture, the traditional knowledge experts are the ones that really put the big picture together for us and can integrate those different types of information and understand what might be going on. So it's really important that we do rely on all types of information.

Wayne Langenhan: Karin I guess you're counting of the animals is better because I know about 20-25 years ago for some reason you guys lost over 100,000 animals. I was thinking do you have any connections with the smaller airlines, like Air Tindi maybe Buffalo, because they fly around carrying cargo go to different communities and these pilots can keep their eye open and report the herds back to ENR. Have you approached them about that? Do you think it's worthwhile?

Karin Clark: I think informally there is a lot of sharing of that information and pilots like to tell us what they are seeing for sure. Whether that is documented very well, it's probably not, its word of mouth, and people talking but I agree that it is an important set of information.

Wayne Langenhan: I am not talking about Air Canada or something like that, they fly at 30 thousand feet, I am talking about the smaller aircrafts that fly slower and lower to the ground and they could probably do some pretty good reporting.

Karin Clark: Yes for sure.

Chloe Dragon Smith: The traditional knowledge holders can bring everything together. I am really interested if, in the future, we can have people that can do both. So if we had youth from the communities being trained in science but also understanding the traditional knowledge, that would be very valuable. But if there could be opportunities to help train those people I think that would help a lot.

Karin Clark: I agree and I can't help but think about the Tundra Science and Culture Camp that we hold at our research station where we are trying to bring NWT youth together and teach them in many of the science disciplines but also expose them to the cultural context. Training the youth is really very important.

Chloe Dragon Smith: I know lots of times community members come along on surveys. With NSMA I have been asked to go out on the land with researchers and stuff. You get the experience but you are never really in it, you are kind of like on the outside. I would love to see northern indigenous people in those leading roles doing that stuff. I don't know how to go about that, that's obviously a long process.

Karin Clark: Yes I completely agree.

Gord: I just want to follow up on Wayne's comment about the airlines. I know Air Tindi has looked at mounting cameras under their airplanes because they do regularly scheduled flights, low elevation that could record that kind of information. It's then that process of taking that data and sorting it into how many animals are observed on those lines. But those technologies are coming more and more.

Wayne Langenhan: Why don't we know about this?

Joanne Barnaby: Chloe is going to lead us in a little energizer.

Break

Joline Huskey: When you go back to the world map and you showed the herds recovering (in green), do you know any strategies of how those herds recovered on its own? Or by help of us humans? I would just like to read up on it, like what was the recovery plan and how the herds repopulated.

Karin Clark: There is not much in that research paper that talks about those things and the green doesn't necessarily mean the herd is recovering. It can mean that it has been healthy for many years and still is. I can give you a copy of the paper to look at though.

Joline Huskey: Dora asked about wanting to recover wildlife, having people involved. Mostly we see scientists, not our own people sitting at the table. What Chloe was saying, in training, youth participate but also the guidance of our elders and there is not too much of them around now that have all that knowledge. When I look at myself I am kind of the middle aged in my 40s and I gain a lot of experience from elders like them. I know back home its really hard to get our youth to participate, it seems like. I don't want to say they are lost but they still need that guidance of our elders and there is not very many of them left so when stuff like this comes up they really want to get our youth involved and start training them ahead and also make them understand that change is happening. They do see it and they want to pass that knowledge on before they leave. What has been passed on to them, they want to push it forward. We want to keep our culture strong and our language and our heritage and we still live off of caribou. It is so sad that our elders can't really harvest the Bathurst that they used to harvest before. And if they do go out I feel that we are hiding and taking these wildlife, the caribou, we are hiding to eat our food. I guess to better understand she likes to get more of our people involved, not only for Tłı̨chǫ but all around the table.

Karin Clark: I know this is a really small thing but we do have a Tłı̨chǫ research assistant program where we hire two Tłı̨chǫ youth and bring them to the government research station, one for the month of July, one for the month of August and they get exposed to different science projects that are going on in environmental monitoring.

Bobby Algona: Sometimes I say this word when I come to meetings, we say things over and over, and sometimes that is hard to do. Once you say it people should understand and sometimes when we start to say things again we start to feel guilty but now I think we need to say it a thousand times or more, to make people understand. Sometimes I get to thinking, who is really transparent when we come to meetings like this? As leaders of our cultural groups sometimes we tell stories that are very transparent and truthful. Sometimes when we come to meetings little bits get muddled when people are speaking.

This thing about core samples on the snow, about the pink snow, it is getting to me. I am going to ask the question again. Have they tested the pink snow? I am really curious to know what it is now because my nephew and I have never seen that before. Saying its snow algae is all right but is that something you say to bypass other chemicals? Other things that we talk about some things we need to update ourselves because the weather is changing very fast. We may have said things in the past. Maybe we need to update ourselves a little bit because of the weather and climate change. Everything is always changing and our ways of doing things has always been changing because of industry. I talked a little bit about people not being out on the land as much anymore.

Has the government actually tested the snow and taken core samples? To give us a little more help with the snow.

Karin Clark: To my knowledge, ENR has not sampled snow around the mine sites and to my knowledge that kind of sampling around the mine is the responsibility of the mine. This is the first time that I have heard about the algae being around the mine.

Chloe Dragon Smith: I just want to say before we get started kind of all of those things like what Bobby is saying, if we had people in those roles that could be out there doing that it would be building a relationship and also have community members that could really be understanding what's happening scientifically behind the pink snow and different things like that. And how Joline was saying that our youth are lost, I think to fix that we need to be teaching people to live in two worlds and there is a huge opportunity to do that.

Karin Clark: **Presentation – Bathurst Caribou Range Plan**

Natasha Thorpe: Yesterday at the end of the day I was saying how hard it is for us in the room to forecast. It's not necessarily what is going to happen but it helps them with some tools to try to make decisions. This is what the BCRP is doing.

Wayne Langenhan: Is this in effect right now, is this the new boundary for the Bathurst Herd or is it in the planning stage for the future? I notice that the boundary is all different from the other boundary that was covering the Bathurst for the restricted area for hunting.

Karin Clark: This is what we are calling the planning boundary; so we took what we knew about the Bathurst annual range and we took what we knew about collar locations and peoples' observations of caribou distribution and we drew a line. It is very close to what ENR and GNWT sort of officially puts out as the Bathurst range but it is slightly different. We altered that line a little bit.

Wayne Langenhan: I just wanted to say the Łutsel K'e and east of that was all open for hunting. Is this going to be included in a restricted zone?

Karin Clark: This isn't a hunting boundary at all; this is the annual range of Bathurst Caribou.

This is our last future scenario, one is moderate this is much more aggressive. So it's not important where things are or what's on the landscape but it gives us a level of activity that we can then predict how caribou might respond to that level of activity.

Joanne Barnaby: I was thinking about how people have been describing themselves and a lot of people who have had historically a really close relationship to the caribou have been calling themselves Caribou people. I think that is different than having a separate circle for people and a separate circle for caribou. Even though we have some people moving into the wage economy and you might include those in the separate people circle but there are still people who feel connected to the caribou and so maybe there is a fourth circle of caribou people that should be added.

Louie Zoe: Yes we are talking about caribou. When we start talking about caribou we often say the habitat for the caribou should be monitored and should be managed. The caribou migrate in to Hottah Lake into our area and there has been a forest fire all the way past Behchokǫ̀ and caribou range and all that area has been burnt by the forest fires. In the future, all of the habitat of the caribou, how will the caribou range be in our area after the forest fire? All the wildlife, the bear, the beaver, the wildlife between Gamèti and Behchokǫ̀ there are rabbit tracks there are martin tracks but now there are no more tracks everything has been destroyed. At the same time, as we are talking about the caribou in the future, it may not come back to this area in the future that's what I think and also if the habitat for the caribou had been destroyed maybe the caribou will stay in the tundra. When they do the counting of the caribou, we should have the youth joining with the counting and survey then the youth would learn how to do the work. Our leaders are not doing their best to get the youth involved so they are not involved. I think we should be doing the counting during the winter range.

Karin Clark: Fire has been a big topic at our meetings and how it affects where caribou go in the wintertime. We talk a lot about how we can make recommendations to government on actioning fires. It is tricky. As we saw in 2014, when there is a big fire year, our efforts are spent protecting people and people's property and often other priorities fall by the wayside, unfortunately, but we do have the ability in the range plan to make recommendations on fire management.

Louie Zoe: About the fire at Hottah Lake, south of Great Bear. That's where they live during the winter so to keep that area from burning, we should protect that area. As a young man, I used to fight fire with a water pump, then once the fire was out, they would gather 10 people to go put the hot spots out. And that's how we use to work in the past. But today it's not like that, these workers they put the fire out but the hot spots keep burning, there is no follow up. Just ask the people of Gamèti, all summer it would burn even though they have these personnel, but when it rains the fire would reduce but when it gets a dry sunny day the fire would light up again.

Karin Clark: I like what you said about identifying those areas that are not burned that are still green and still good habitat for barren ground caribou. It will be important to identify those areas and perhaps recommend protection of some kind or if possible the fire be actioned or fought in those areas.

ENR Presentation continued

Where would the recommendations go?? Unlike a land use plan, for example, that has legislation that allows it to be put in place and implemented as a complete document, we have to look to other pieces of legislation or other regulatory processes to implement the different aspects of the plan. This is both a challenge and an opportunity as Natasha keeps reminding me. The opportunity is that we are not bound by any guidance or direction on what we can do so this is a new approach and we are breaking new ground. This is new for government to take this

approach to habitat management so in that sense it is an opportunity to be creative and do new and different things.

Bobby Algona: I am really wondering how we can do this, caribou numbers being so low, our ecosystem so dry, the distress signals the traditional knowledge hunters are giving us and we are noticing from the animals. Can we shut down the whole industry for a while? To get the land replenished for a while. I know jobs and everything is really important to a lot of people. I think we need to look at some things to slow down because it is a sense of urgency for me. We need to look at things a little closer. Also I am hearing things again about more mines opening up. How many mines can be open at one time? When we are giving you all these distress signals but you still wonder how many mines can be open. I think we need to look at this a little more closely. I have a hard time with people wanting to put more stress on the land itself, that is the industry causing the global warming along with nature itself.

Karin Clark: Thanks Bobby and those are the exact issues and challenges that are facing our group. We likely can't shut down what is happening today, but we can put conditions on what happens in the future.

Dora Migwi: As we are talking about mines, my late husband he is a recent chief [NAME?] and they talk about many things. He talked with the Tłįchǫ government when they have these exploration mines and find the minerals. It would be best not to open mining companies on the tundra because it is on the migration route of the caribou, so wherever the migration route is, you may know about these migration routes or you may not but what would happen if you open up these mines it would disturb their migration routes. A lot of the elders often said these things in the past. They often said you should not open too many mines at one time. As Louie was talking about the forest fire, he is right if you drive to Providence all the land is burned all the way to Whati. All the wildlife we have to live on has been destroyed by the forest fire and also the habitat for the caribou has been burnt. We are not in control, our lord, our god, our Creator is the one in control and if we pray and ask for help to our Creator he would help us and as for the caribou, it is very difficult to say that the caribou would roam to where its habitat is to find its food. It doesn't live in one area, we don't know what is going to happen. Our creator is in control. If the population would increase, then it would and that's how our elders pass on this information.

Wayne Langenhan: My old partner never came on this trip with me, Ed Jones, he said there shouldn't be so many mines in this one area because it's on the migration route of the caribou and as one shuts down you should leave it down. Snap Lake went down, we still have 3 left here but Peregrine wanted to open one up and, myself, I am of the opinion that they shouldn't be allowed to open up. There should be no more than maybe two mines in this area and if the other ones are allowed to open up maybe they should be underground instead of surface because of the foot print. Mining may be sustainable in this area if there were maybe just two mines and they were underground mines.

Natasha Thorpe: This range plan is really pushing people - not only the scientists and the biologists but also the traditional knowledge holders - to say okay if we don't allow a mine or if we do support an underground mine the real trade off is, for example, maybe a million dollars in jobs compared to maybe the loss of 100 square km of caribou habitat. So part of the idea is instead of trying to make decisions in the dark, we are trying to put some forecasted numbers together so that people, caribou people can make some very, very difficult choices.

Nancy Kadlun: Looking at the circles [on the chart] of caribou and money, we have so many mines in our area and yet we have so many people who are hungry every day, they have no food on the table. If there are so many mines and they think okay we have so much money because there are so many mines and the caribou is not there and it's harder for people to have food on their table. The money doesn't benefit the people who are not working. The mine are not giving the people who are not working money so it's more important to protect our land and our caribou, because that is our food. With no jobs from these mines our people don't get anything, they have nothing.

Louie Zoe: This opening of the mine site, the exploration companies, when they find minerals and it is on the migration route of the caribou, this is where it lives. Our elders are the people that live on the land so our elders are the caretakers of the land but exploration companies they are just worried about the money, that's the reason why they open up these mines. As for our ancestors, the wildlife that migrate, the caribou, the habitat, they use to take care of these things and do whatever they could to protect it. That is what I wanted to share with you, the things I am worried about.

Joanne Barnaby: I think the other thing that might be missing from this is the sense of respect on time maybe 30 years and people are thinking about future generations so they are thinking way beyond the 10-20 year cycle of the mine. People are talking about 30 years of income versus a resource that we have depended on for a lifetime so it's another way to put things in perspective and needs to be reflected.

So your ideas, your feedback on how traditional knowledge could help create a good plan would be very helpful. This process is continuing as Karin has pointed out and we have made in our work over the last several years, we have made several recommendations where Diavik really can't do anything about some of those recommendations but a lot of those recommendations actually fit very well into the mandate of this group that's producing this plan. So maybe one of the things we could do is go back and look at our past recommendations and see which ones would help define that plan and as we continue our work we can have this planning process in the back of our minds so some of our ideas and concerns might be directed to them.

Wayne Langenhan: Up until recently, we had 4 mines going and we had lots of employment but most of the people above the 60th parallel that have lived here, were born here in this country, they aren't the majority working at the mines. There is more people from south of the border working in the mines then there are from north of the border so I think there should be more

emphasis on training the people that live up here and continue to live here then hauling in more people from down south. They only stay here a short time and then they are gone again. The people up here will stay here if they are trained and get into higher management and then the training can keep on going in a circle and more can be drawn into that circle so that would be creating more jobs at these mines for the northerners. If you cut back on the mines say put it back from 4 to 2 there will still be an increase in the employment of people up north that they are being trained so you won't need as many mines and the mines that were going to be open could be kept for further down the line and that way there will be money coming in for a longer period of time and the expertise of the people in the north country would grow until it would be 90% northerners and 10% southerners.

Karin Clark: Thank you to everyone and thank you Joanne for suggesting that **some of the recommendations that are made by this group can be sent our way for consideration in our process.**

Joanne Barnaby: Colleen is going to make a short presentation before lunch.

Colleen English: **Presentation – DDMI Timeline**

Colleen English: When Diavik says closure they are talking about the end of the mine life They stop mining and a lot of the facilities you see around here can stop being used. They wouldn't be in the pits anymore, wouldn't be underground anymore, a lot of the buildings, like the process plant wouldn't be used anymore because the mine is done so they are no longer taking rock out of the ground, no longer processing it. The estimate for that is 2023. Then you still have all this stuff, buildings and rock piles, and open pits. That all needs to be closed or re-claimed. Putting rock into the PKC to cover the beaches, you are putting water back into the open pits. You are doing all of that work in about a 2 year window, 2023 -2025, and it would still be pretty busy (maximum of 200 people, many seasonal) doing all of that finishing work for the mine. After 2025 to 2030 would be mostly post closure monitoring (25-50 people) facilities have all been finished, buildings have been removed, there would be water in back in the pits, and we are monitoring to make sure they are working like Diavik said they would. That is what we would call post closure monitoring, this is when you will see the decrease in activity. It will be a nice little quiet camp again. You would have seasonal fluctuations in the number of people.

Then 2030 is the target to close and Diavik would be walking away (hopefully).

Denecho's question yesterday specifically, if you had to rank the North Inlet's contamination level on a 1 to 5 with 1 being good, 5 being bad. If I have to use this scale specific to the Diavik site:

1 – would be Lac de Gras

5 - PKC (hardest thing for Diavik to deal with, most contaminated thing we have on site)

2/3 – would be North Inlet (water is very easily treatable within the plant, and once mining is finished no more water would be going in there) the challenge in the North Inlet is the sediments.

Another way to look at it would be to compare Diavik to something like Giant Mine; everything on the Diavik site would be a 1 to 2 if you compared it to the problems and the legacy issues that they have for Giant. Nothing on this mine site is anywhere near as bad as the arsenic they have to try to contain and bury underground and some of the tailings ponds that were left behind. Because the chemicals that were used in that process are a lot more difficult to deal with and is a lot more toxic from an environmental or human health perspective.

Everyone's view and perspective is different for how they view contamination but it is good to look at it.

Lunch

Natasha Thorpe: Colleen talked a little about activities and operations between 2023 and 2025 and 2025 and 2030. We are going to break up into our men's and women's groups again and we are really going to focus on these two periods of time.

Consider monitoring. What should monitoring look like when: 1. Mine operation ends (2023-2025) 2. Post closure (2025-2030) How? Where? When? Why? Who? What? What exactly do you want to monitor, the presence or lack of caribou? Their body conditions, how skinny they are? How will we know that the caribou are safe?

Nancy Kadlun: If it's all cleaned up and we don't have to wonder how and why and where, it would be best. Then we know that area is good and safe. How will we know that? You guys will do the testing and everything then we will know.

Women's Break-out Group

Kathy Arden: My opening comment is to keep in mind where the caribou are going to be in their migration at that time period so maybe when we are discussing it, we start with them being over in the barrenlands then maybe as time goes on they will come back this way.

Joanne Barnaby: Do we want to try to answer the questions one at a time for each period?

How? 2023-2025 after they finish mining, finish the rock piles. What kind of monitoring should take place for caribou?

Chloe Dragon Smith: I think that right at the start of deconstruction is when we can really start taking back our role of land stewards that would tie in to monitoring by starting to train and employ hunters, trappers, and community members and youth but I think we should be part of the deconstruction process.

Joanne Barnaby: What kind of techniques should they use?

Chloe Dragon Smith: Would it be much different than it is now on the site? They aren't going to be coming back because it's still going to be busy. Continue Diavik's current monitoring process but enhance with starting to train as mentioned above.

Berna Martin: Use Diavik's resources while they are here.

Joline Huskey: Diavik mentioned that they have community liaisons so what is their role? Update the communities or what?

Each organization is involved in the process, it would be good to have a liaison coordinator to go into the community and make the updates.

The people trained in the 2023-2025 to continue to work in the 2025-2030 but who would employ them?

Chloe Dragon Smith: What would it cost to do that and could we have the money now to start the program and to continue on during the 2025-2030? Develop a budget, plan/program, so that we can prove it works then look for funding to continue for the long-term? (Organization like an EMAB or the Haida Watchman?) We would design the program, they would help administer.

What? Injuries, people activity, growth, new exploration

Kathy Arden: Is there new exploration, people, predators, activity, food regeneration?

Chloe Dragon Smith: Environment, weather, water, behavior

Berna Martin: Using the collars to monitor the caribou to see if there are any changes due to the collars, also monitor how the caribou are doing with the collars on and stress from using collars.

Joline Huskey: Monitor other animals and birds as well to see if it's affecting the food chain system.

Pulling together all that has been done to see what's been done. Part of the training could be looking at the history of what has been done.

Why would we monitor these things?

Kathy Arden: To ensure the safe return of the wildlife. There will be ground squirrels coming back, and bugs. They each help one another.

Joline Huskey: When we saw the test stockpile and it looks very grey but it's been sitting there a while. But he was also saying it's going to self re-vegetate. If we just give it the boost around the bottom so when the wind blows it will move the seeds. We have another big mine out there from Ekati so you will also see other big disturbances there.

Needing to look at the bigger picture → Ekati should be doing this as well, we are all affected, the whole area

Joline Huskey: This would be a good program for University students to do their thesis to collaborate.

Nancy Kadlun: I am having a hard time with this because on this map it still has a hole in it (PKC) so I am having a hard time assuming it is okay.

Kathy Arden: Okay but we are going on the assumption that everything is fine and how are we going to monitor it after that.

Joanne Barnaby: We can assume this because Diavik cannot walk away from this until the water and everything is good.

Chloe Dragon Smith: Add understanding ecosystem dynamics → Links between components, communicate with people who are on/use the land and encourage this by enhancing their abilities to do this by – compensation

When?

Kathy Arden: Before we get into the training aspect we want to get the word out about training land stewards prior to 2023 so that when the opportunity comes they are already thinking about it.

Who?

Partnership approach → government, aboriginal governments, industry, Diavik, TK, Colleges, Universities

Nancy Kadlun: We have Inuit organization (KIA) and every summer when there is no snow they inspect where the old mines were and all around here as well.

Where?

On the map

Joline Huskey: Propose to GNWT for another research station with hunters and trappers allowed to use it as well but call it a "cumulative effects monitoring station."

Chloe Dragon Smith: Transfer ownership of the traditional knowledge camp to GNWT or another organization that would continue to support/fund the work as a cumulative effects monitoring station.

Chloe Dragon Smith: The traditional knowledge panel recommends that the mines in this area collaborate and combine monitoring resources.

Men's Group

Natasha Thorpe: Set up on the computer right now is Google Earth.

I remember George Marlowe in particular talking about monitoring slightly north of Lac du Sauvage, North West in that area.

Wayne Langenhan: You mentioned that workers may be seasonal, but what season?

Colleen English: Primarily the busiest time of the year is summer or really spring, summer, fall that's when it is easiest for teams to come up and do stability monitoring, access the site, a lot of water quality monitoring happens more when the water is open and you have ponds and streams as well as the lake. But it will vary because there are going to be winter questions as well in terms of how things are performing during the winter season so there will always be some people here but it will vary depending on the program.

Wayne Langenhan: So you would have a skeleton crew most of the year and summer time would be more. Why couldn't the skeleton crew you have here do the monitoring?

Colleen English: They can and they should be involved as well but what would it look like, who is doing what?

Wayne Langenhan: What are the closest communities to this mine? Coppermine?

Colleen English: Wekweeti would be the closet.

Wayne Langenhan: Maybe someone could be trained from those places.

Denecho Catholique: There are how many communities around Great Slave Lake and they have one person from each community and they come around to monitor. Each community has different ways of looking at how caribou behave so they should have 1 from each community.

August Enzoe: We should just worry about this [East] island right now and we are only talking about caribou but what about the ground squirrels and rabbits. Is anyone monitoring the small animals? Do you have cameras out there right now?

Colleen English: There are no permanent cameras out. They put the cameras out based on the program they are working on.

I think if there was a suggestion to use the cameras at closing it would be a good idea to tell them where you would want them placed. Keeping in mind cameras only give you that presence/absence Natasha was talking about.

Wayne Langenhan: Mostly when they migrate they come in from the east and the north right? So set up cameras would be good there and maybe have a couple little outposts where guys could sit and observe. I don't think you will have that many in the summer.

August Enzoe: The reason I am talking about radio camera, at Ekati they have cameras on the north side, the east side as well. I saw a lot of them knocked down from grizzly bears so how often do they check on cameras?

Natasha Thorpe: Could you mark the areas for cameras?

August Enzoe: South side it doesn't matter because they mostly come from the north and the east during the summer. For winter usually they don't go through here, they go a different direction going back to the calving ground in April. Wherever they are they go straight back to the calving ground they don't zigzag.

Check it every week or every two weeks to start.

Natasha Thorpe: All communities should be involved. Would you have them working together at the same time or would you take turns?

Denecho Catholique: First couple turn arounds they should have all the monitors together then they can split up.

Bobby Algona: I agree with that, if we start our daily, monthly, or yearly reports or observations a little before or after the mine at least one youth and one elder, if you had a yearly get together that would be good as well.

Natasha Thorpe: Any more comments on the who part?

There has been a lot of talk about youth being strong in both worlds, a lot of recommendations about training and monitoring. Is there anything that could be from now until 2023 to make sure that the who - the people that are going to be monitoring - are ready?

Bobby Algona: That can be raised to the communities when you do the tours, I think the communities would like a say as well. I think communities would like a say, I would like to leave that one until the community work has been done for the time being anyway.

Denecho Catholique: Doing courses is good and also the traditional knowledge about how they know the caribou is even better.

August Enzoe: Right now do you have anyone working around the mine monitoring all the things? Anyone from the communities doing it or only white people?

Colleen English: Yes there are people from the communities doing monitoring. I don't know the number specific to environment monitoring, Dianne is Métis, another student whose name I can't remember is aboriginal from the north. I can get you the numbers in specifically environment and also for the mine.

August Enzoe: The reason I am saying this the report of what's going on in the mine we never get a report, I don't think they bring it to our office, the wildlife office.

Natasha Thorpe: Should there be cameras off the island as well?

Bobby Algona: I don't know how stable the North Country Rock Pile would be but I think it would be a good place for one looking right around (Number 3)

Denecho Catholique: Facing Number 4, 5, 6 facing south east,

Natasha Thorpe: Number 1 is facing north

Denecho Catholique: Should have a few facing down towards the mainland to see the movement of the caribou.

Denecho Catholique: We are only focusing on the island. How about the mainland, on the north east of the lake there is a creek there a caribou crossing. We can put cameras there too.

Natasha Thorpe: The Narrows? [between LdG and LdS]

August Enzoe: I think Ekati already has a camera there.

Colleen English: So you would say check to see if Ekati already has a camera at the Narrows and if they don't then you would recommend having one there?

Denecho Catholique: It's kind of important because it is a caribou crossing. I think we should have cameras at all caribou crossings.

Natasha Thorpe: Lac de Gras in the middle

Denecho Catholique: Where I marked it is where caribou might cross and that's where I want cameras to be. Rock pile, the airstrip, and a few on the main land facing Diavik, this one would face out.

August Enzoe: How far is the Jay-Pipe from the Narrows? So that's why we want the camera there because it all flows through there.

Colleen English: So when would the cameras be on, all the time? Summer/ fall migration? What do you think?

Denecho Catholique: I was thinking more like trail cameras so when caribou do go by they just take pictures instead of having it on 24/7.

Colleen English: Its still more battery, in the winter it is really tough to keep cameras working.

August Enzoe: Yes in winter it's really hard it's only for summer for this, when they are going south.

We were happy in August when we heard the caribou were coming back towards us and somehow halfway from the calving grounds to the tree line they stopped. They must have had a big meeting, the two herds, so they went back to the calving ground and past the calving ground and went to Gjoa Haven. So this year we hope we get caribou but we will see.

Natasha Thorpe: The other suggestions you made yesterday included: boulders, boulder fences, traditional fences, trees, inuksuit, decoys, bells, high pitch sounds, wolf sounds, some kind of physical shape.

George Marlowe suggested some traditional ways of putting inuksuit or some kind of fence here, trees to deflect the caribou around. I am just reminding you and I can mark it if it is something of interest.

August Enzoe: I was with George then but there was lots of caribou then, caribou are going down now. I think a fence to start when there are still people here working to monitor.

Wayne Langenhan: This PKC, are we talking about where the slime is or the stuff off the bus, the coarse?

Colleen English: The sinking stuff that you can't put boulders on is the slimes, so if nothing changes like what Gord was talking about yesterday, the small pond would remain in the middle of the PKC and it would be very difficult to put anything on or around it because they'd just sink.

Wayne Langenhan: Is there no solid ground around there, no bedrock? What are the dimensions of that? How big is this hole?

Colleen English: Gord is getting me that, the biggest challenge is that it could be up to 50 meters deep or more at closure, so trying to fill that with rock when they just keep sinking is a lot of rock that you would have to try to build up because the bedrock you are asking about is another 50-70 meters below this.

Wayne Langenhan: So there is no chance of putting pilings down to it?

Colleen English: No they have looked at all of those types of options. We can double-check with Gord but I am pretty sure that everything that they have tried to think of to stabilize or manage that area besides just leaving it as a pond hasn't been technically feasible.

Wayne Langenhan: If it's filled up with water, the bugs and everything that lays on top of the slimes is fit for consumption, why not just leave it open and leave it alone?

Colleen English: That is the plan. The water that is sitting on top would just be left as a pond, the slimes would be down below. The hard part from a wildlife perspective is you have those areas close to the pond where it would still be hard to stabilize that ground and the water would be sitting there but it could be tricky for wildlife near the edges of that pond. So they would back fill to a

certain point but then you reach a point where you can't fill it and then its water sitting on top of it but it would still be tough with wildlife to access that in and out safely.

Wayne Langenhan: What you want is an idea for the mine how to stabilize the thing just the way it is.

Colleen English: Or some of the stuff that you guys were talking about yesterday with boulders is limiting access overall to this area. Are there ways that we can design around this whole facility, so not just this pond, but design around the facility that would limit wildlife access to it? So one of the ideas that people talked about a lot was this joining slope to the North Country Rock Pile being steeper than anywhere else on the pile because then there is less of a chance that wildlife would go down it.

Natasha Thorpe: What Colleen is getting at is we don't have to worry about the stability and the slope as the engineers can figure that out. In terms of thinking about closure and monitoring caribou and other wildlife moving through this area, there was the suggestion to put the boulders on top of the PKC and also near the edge as well as keeping that steep. Are there areas on East Island that you would like to think about putting boulders and if so could you mark them?

Denecho Catholique: I am really concerned about this pond they are going to leave open, the PKC because I wouldn't want my kids to drink out of that. I would want something to try and keep animals away from this pond. What about just throw a whole bunch of boulders around there so there would still be water there and boulders showing but it would keep animals from getting to it? Even if the boulders are further back so the animals can't get through them.

Also I wouldn't want caribou coming around this area. I don't want to say contaminated water but bad water it's still going to be there over time. I know it's hard around here so just throw a whole bunch of boulders around so the animals can't get near the water and drink and swim in the water. [North Inlet]

Louie Zoe: They said that in the past they aren't going to do anything to the site where the PKC and North Country Rock Pile is and if they put the boulders on the side of the road of the North Country Rock Pile and the PKC this is where they are going to make it steep, and it will be less steep on the other side so that is where the caribou can roam. So on the side where it is steep on the North Country Rock Pile there should be boulders to deter the caribou from going down the steep part.

Wayne Langenhan: These two places here are dikes here, these dikes are going to be opened right? The North Inlet they are going to be blasted out right?

Natasha Thorpe: They are going to be cut.

Wayne Langenhan: So the water in the North Inlet will be the same as the water in the lake so why do we need these boulders here?

Denecho Catholique: I was just suggesting to keep it blocked off because I don't want the water in the North Inlet and the lake to be mixed so I am suggesting to just leave it as is. I know when I am older it is going to affect the water, not now but in the future it is going to affect the water, over time because all the stuff on the rocks on the bottom.

Colleen English: So you wouldn't want the north inlet dike cut open.

Denecho Catholique: No I don't.

Natasha Thorpe: At number 1 you would like boulders around the shoreline.

Denecho Catholique: Correct.

Natasha Thorpe: And no cutting the (north inlet) dikes.

Bobby Algona: That was going to be my suggestion too, do not open these (north inlet dikes), leave it, the water quality is destroyed now any way, all the solids are going to eventually go out anyway so why don't we just leave it the way it is. I am thinking about that for the PKC as well, you are proposing to cut a stream in there as well. If you put a stream in here all this (PKC) and precipitation is going to be making a stream in there. We don't want the solids in the North Inlet and PKC to be mixing with the lake water.

Wayne Langenhan: Quite a few years ago you could buy these little things for the fenders of your cars and they would make noise like a dog whistle and people couldn't hear it but the animals could hear it and it would keep the animals off the road. So something like that.

When it comes to keeping caribou off of some part that these things are just put up and mounted and there is no maintenance to them, it's just the wind there is no mechanical parts in them.

August Enzoe: I am concerned about the North Inlet. All the mine water goes in there right now, the waste water goes in there then it goes to the treatment plant, then it is released to the lake. So after the mine is closed they are going to keep treating that water until there is no water left in the pond, then maybe they could open it.

Denecho Catholique: I agree with my grandpa, he is not going to be around to see that through but I will be around to see it through and if they do make the water from the North Inlet mix I would only approve it if the water is 100% clear in the North Inlet.

Wayne Langenhan: I know your concern is with the water here but maybe a person should be thinking about the bottom. You know what's left in the bottom, they could pump that thing dry but what is on the bottom, how are you going to get rid of that?

Denecho Catholique: If they drain all the water they should dig all the contaminated rock out of there.

Natasha Thorpe: You have said many times you need to see it with your own eyes, when that time comes. Testing and approvals have to be met or, like Gord was saying, Diavik won't get their bond back.

So this is obviously an area you don't want to attract animals to, so are there other things you would like to do to dissuade them from coming?

Louie Zoe: The North Inlet we have been worried about it and also beneath the water, how come they can't take sediments from underneath the water and test for contaminants**. If it's okay then we can dismantle the dam.**

Natasha Thorpe: Right now you have only suggested cameras on the land. You haven't suggested anything about people being out on the land or what that would look like.

Denecho Catholique: I suggested people from all over the communities to be monitors, they would be looking out for wildlife and the environment issues like plants not growing or plants dying.

Natasha Thorpe: How will they know the caribou are healthy? What are they going to be watching for? They want to see it with their own eyes, but how are they going to know?

Denecho Catholique: In my experience, I have seen a few unhealthy caribou and you can see the signs, when you split them open you can see it on their back, the legs, their tummy, kidneys, liver.

If you see a bad caribou cut it open and see what is wrong with it. You would know if you saw a bad caribou because of the fur and the antlers. It will grow big spots on the side.

Louie Zoe: Yes once the closure takes place and if there is monitoring sometimes there are white outs you can't even see. It would be good to have people who have experience with the climate to do the monitoring.

August Enzoe: After the mine closes they are going to continue to treat the water in the North Inlet until its clean then they are going to open both sides.

Denecho Catholique: And here in the pits I don't agree with opening it up, because I know down there at the bottom it's contaminated with materials. I am wondering if they could pump water over it, into the pits so it stays in there and doesn't come out, like a beaver dam.

Break

Women's Presentation

Kathy Arden: We based everything on this map.

Chloe Dragon Smith: Our model is really about stewardship and taking back our role as active stewards of the land.

Kathy Arden: Explain the role of the Liaison's – Who are they??

Chloe Dragon Smith: We don't want to just recommend that Diavik do this. We want to be a part of it.

Men's Presentation

August Enzoe: For monitoring on this island we mentioned about putting cameras around the island. Spots on the map.

I have been involved with this mine for 10 years now most of what we talk about is about the island mine. Leave it steep around the PKC we have been saying this all these years and Diavik has money for clean up.

Denecho Catholique: We were more concerned about the land and caribou as you see all these markings where we want to monitor the caribou coming through. We talked a lot about the water in the North Inlet, to put boulders around it to keep animals out. Put boulders at the edge of the North Country Rock Pile by the PKC so the caribou couldn't go down there. Courses for traditional knowledge so that people know the land and how animals act. You need to have traditional knowledge so you know the land if the weather changes.

We want to watch all this area for caribou.

We want the water in the North Inlet to be 100% okay before it is put with the lake. The monitors would come out and check on the caribou to see if they are healthy or not.

August Enzoe: There is one camera on top of the North Country Rock Pile to keep an eye on the mine.

Denecho Catholique: We are thinking about keeping the water in the PKC and the lake separate.

Chloe Dragon Smith: Would you still want to keep them blocked off if it's clean water?

Denecho Catholique: Only if its 100%.

August Enzoe: The reason I am saying this is the Jay-Pipe.

Denecho Catholique: Have a cabin by the Narrows to keep an eye on things (eg. mine sites, people, animals).

Bobby Algona: The annual monitoring program at least one youth and one elder from each group.

Natasha Thorpe: Thank you youth for doing this. We have just over an hour and Joanne and I talked about going in a circle to share ideas about ceremony, healing the relationship with the caribou, the land and if you would like that kind of ceremony.

Break

Denecho Catholique: What are the topics?

Joanne Barnaby: The Traditional Knowledge Panel in the past has talked about taking steps to help heal the land through prayer and ceremony and, in those prayers and ceremonies, to ask for direction so we are doing that in a good way. We are also talking to the caribou spirits of the land so we are continuing the traditions of our people. So that's the whole background to that to why its important and what it is and we would like some further feedback about if there are particular ceremonies or dates or times. Do we want to do it together or separately, or if you don't want to.

Bobby Algona: I have said it many times before when we come together as a group we are all praying together just this meeting alone we are telling stories and its actually praying together. We want the caribou to come back and telling our stories and trying to reclaim the land for the future of our children. That's what we are doing as a group here. I have always felt that. It is always really nice getting together like this as a group. It is really wonderful all of our cultures telling our stories. That's actually praying together because we want the companies to look at our ways of getting together and praying together. My grandma told me lots of stories and I always thought that she was praying for me to understand what she is trying to accomplish for me. And that is exactly what we are doing as elders: trying to tell stories to a company. Through all our stories and things that we want the companies to do, that's what we actually do. Grandmas and my elders - I don't mean only my Inuit, I mean all of us, you are all my elders. I may be an elder but I might be the youngest elder. Along with Nancy we are amongst the very young elders. Until the land is reclaimed, we will be telling stories, and we want that to keep going as well and just to reclaim the land and we need to do this more often.

Kathy Arden: I don't know where the money is going to come from for my idea but I would like to see everyone from all the groups involved in a ceremony to honour the land, the spirits that are here, the animals that are here and in that past they have given all of us food and provided us with shelter so to have a big ceremony to honour the land I think would be a big task, but I think it could be done. As we know, the drum has always been the soul of the Aboriginal people and

all of us in our traditions have songs that are sang at ceremonies. I would like to see all of those groups come together and bring their drum songs and to sing to the spirits that are here. Maybe the caribou will hear those songs and maybe they would hear, maybe we have our land back and maybe the grass is back so they can eat and come back this way. I think with a lot of strong hearts coming here to sing it would bring a great feeling over this land and for all of us and all the future. I don't think there is any harm in doing some within 3 years and then some at the closing. Like Bobby said, when we come here and we pray and we talk about trying to bring our land back to some semblance of health for the animals and for growth. It might be a ceremony that Diavik might like to see on this site with some elders, it could be three years from now and then at closing. It might become an annual thing that people will come and celebrate the land.

Nancy Kadlun; It would be so good to have a ceremony before it really closes down, because our land is alive just to see all these big wounds in the land it's so sore just like we are hurting the land is hurting too. It is really strong to have a ceremony for the land when it starts to heal again, because if we just leave it like that what are we going to have? We need to give back the life it used to have to heal the big wounds of the land.

Wayne Langenhan: I am sort of ignorant to the subject of ceremonies I have only been to a couple of ceremonies in my life and they have all been wedding ceremonies. I don't think that fits into the realm of what we are looking at but I would like to participate.

Chloe Dragon Smith: I don't have too much to add about how to make a ceremony but I would also like to be part of it but I do think it would be valuable for the people at the mine to be a part of it as well. A disconnect in our world is that we live in sort of the main stream world or culture but we don't often have people come and see how we live and what we do and how we respect the land and want to live with it so I think it would be nice to have everyone in the mine be a part of it.

Rose Betsina: Thank you for the suggestion of having a ceremony. All the people in all the land, that's how our ancestors and elders used to get together and do ceremonies. Even a piece of rock, you make a hole in the ground it makes a sore and how it can heal. Even if you have a dirty plate and you leave it overnight, the dishes cry and those are the kinds of things that I know that I tell my kids. And how the land is unhealthy and we leave it and there are a lot of holes in the land. For the animals and caribou that is what worries us and there is a lot of big concerns in the north, even the people discussing in, even the caribou can hear a long ways. Even when we go hunting for caribou, they take our meat away. Even my sister-in-law, they had two caribou taken away by ENR. That's how ENR is treating the people in the communities. All they are doing is taking the meat away from the people and all they did with the meat they took away from my sister-in-law, they distributed it to the community or they donate to somewhere else. My sister-in-law was at home and her husband went out hunting and he thought that he was going to be back and she wanted to make dry meat and here they took the meat away from them. Those are the kinds of things that we have to think of. I wish to have this land nice and clean and when we go travel by airplane we say our prayers and we see all the landscape and even we had a tour of

the site yesterday. We were staying at this point at one time before the mine was here and there were lots of blueberries and what I see today they really did harm to this land. We knew this was coming once they find a bunch of resources some kind of metal in the ground. Now today there are lots of forest fires even if you are rich you will not be happy for a long time. We are talking to the young people, but the only thing we can do for young people in the community is to just pray for them and their well-being.

Denecho Catholique: I remember when I used to go out on school trips; the teachers would always say respect the land because if you take care of the land, the land will take care of you. As with fire, if you have fire, fire is very strong, if you eat with the fire, you pay the fire, so if you cook meat with the fire, you say thank you and you feed the fire some meat. Also if you are traveling across big lakes it's good to throw spruce bows on the lake for safe travel across the lake, even in the summer time. It's always good to pay the land if you have never been there before. Maybe that's why we have bad weather because some people never paid the land and they came here for the first time. Respect the land and the land will respect you and take care of you.

August Enzoe: Thank you Denecho. I was going to say that but I am just going to add a little thing for all of us. Tomorrow when we leave, it is our land, we love our land, we sleep on it, we eat on it, we work on it till we die one day. The day is coming to us. The people working here we all wish them luck safe trip home when they leave from here. Like us if we leave tomorrow back home before we get on the plane pay the land, say good-bye to the land, pay the land. Tobacco it's a powerful thing tobacco. Even though I go coming this way I pray for a safe landing tomorrow we are going back I will do the same thing for all of us safe home to Yellowknife. We know, I know this land way back in 1995, the first time they were trying to open a mine. I went here and it was a beautiful island. We used to walk on in and see all the rabbits and ground squirrels now look at it, it is very different, so what we are working on is for the future, I hope it comes back green and the berries come back.

Celine Marlowe: I have respect for everybody's culture and the way they pray and I always taught my students to have respect for one another and especially the land. When we come back the next time if we could come off the plane and go pay the land and then come here and then when its getting closer to closure to do the same thing because what I am saying is we might not all be here in 3 more years because we don't know. This will teach the younger generation to do what we are passing on to them. I have always taught my students to respect themselves first, then respect others and respect the land and water. I want to thank you for me being here and taking part without my partner. It's kind of tough but I still have to keep going and thank you very much for me being here.

Janelle Nitsiza: I just wanted to share what my grandma taught me. I was raised by my grandma, she taught me a lot growing up. Whenever I went on a plane she would tell me to pray, pray that God guides me and that he is the one that controls the wings of the plane. She taught me when I go on a canoe trip - any river, any lake, any body of water - to pay the water. If I am going on a new land, to pay the land. She also taught me that the land reacts to what we do to it. We have

taken a lot from this island and now we have to give back. I feel like we need to respect each other, like Celine said, our own ceremonies. I feel that we should practice more feeding the fire and even feeding the water. I feel that water is very important right now. We need to feed the water more and respect the water more because all over the world we are having water issues. There is not a lot of water left all over the world. Just to show that respect whenever they can. I am grateful to be here. I was just thinking about my grandma when we started talking about ceremonies. I lost my grandma around the time that Celine lost her husband, thank you.

Louie Zoe: She is right. Wherever we travel on the land, when it's the first time we travel there we need to pay respect to the land and water and pray for good weather during our stay and that's how we did. We did pay respect to the water, that's how the story was brought to us through our parents. This island has been destroyed by mining but it's impossible the way it's going to be reclaimed, even if there is reclamation taking place it will not be put back to the same way it was but if it is well enough for the wildlife to roam back in this area, it will be because we are sharing our knowledge. But in the end, with the help of our Creator, we may accomplish our reclamation, our project, but if we support one another and help one another in the end we may get there. We don't go out on the land, maybe once a year, the mining companies can help us with fuel, and the students who complete their education of grade 12 these students should be hired at these mines and trained in monitoring by elders and scientists. Those are the things I wanted to share because our land may not be replenished to the way it was but once it is reclaimed and it is well enough for the wildlife to roam back in this area; those are the things we are working together to do.

Dora Migwi: Since I have been here, I have been very well informed. This is 10 years since the passing of my husband. He has passed on many messages to us, all the land that was burning I was very touched and all the wildlife that are suffering, the wildlife that we live off of. I pray to the creator and I ask him to replenish the land although it's burning, I pray that there will be an abundance of wildlife. There are always changes every day. We don't know what is going to happen in the future, the water is less and less. We, as elders, we think about these things. We have many children, we have grandchildren, I have more than 50 grandchildren. I talk to my grandchildren often and today, although they don't listen to me, it seems like things are calming down, sometimes I give them hugs and I tell them to pray, I tell them while you are still in school to pray for yourselves so you can complete your education. I tell them to pray for all the forest fires that destroy the communities. My grandchild had told me lets pray for all the people that have forest fires destroying the communities. My grandchildren, that's how I talk to them. It would be good for the water to come back up but what can we say and what can we do it's only through prayers that our creator will send the spirit and replenish the earth if we ask our creator for help then he would help us. The land here, the East Island the mining took place here, the island has been destroyed. How will the wildlife come back to this place? But if it is reclaimed and replenished the wildlife may come back to this island. I was thinking when we arrived Thursday there is a lot of white people and I can't often say this but we should feed the land once before we leave at the airport maybe we should pay respect to the land. I am very

thankful. It seems like through our words and working together that we remind one another god created only one man and one woman and we all exist today so we are all brothers and sisters we are all related but sometimes there is a communication problem but with respect it is a very powerful thing. We must pay respect to the youth and the young people. As for myself, I have a lot of grandchildren and with the youth around me I feel wonderful but without the grandchildren I might get stressed out so these are the things my daughters tell me to just surround yourself with your grandchildren.

Joline Huskey: Paying respect to the land is really important in my culture. I mentioned earlier that I learned a lot from my elders and my grandparents and also to speak in my language Tłįchǫ, When we were talking about when, where, how and who after 2023 this island how is it going to look...You know, doing ceremonies it's really good to do that for me that's how I, where I, feel connected to our culture to our ancestors, to the land and all the wildlife to the water to the air and we even feed off of it so to give back is always important to me so if we start practicing that its not only for my culture but also in your own special way because we all have different cultures but we are all together in this. I was telling the ladies when we were next door when we were doing the working group that it's just like a big sore or just like after a women gives birth to a baby, you have to let yourself heal. That's what we have to do when we help in the process of reclaim/monitor this area but it would be good if can start doing that so the generation after us can learn while the elders are still here. Because it is meaningful for us to feed the fire and giving an offering to the land and the water and the air.

Natasha Thorpe: Thank you for sharing some really deep insights of what could happen but it sounds like even on a more regular basis at the traditional knowledge panel meetings we need to carve out time for that.

Dora Migwi: I forgot one thing. Two years ago before my son when his grandmother was still alive, I said "Bobby when you go hunting, if you see a big rock on top of the hill, pay respect to the land, say the Our Father, Hail Mary and pray to the lord and our creator". When he came back he said "While I was hunting I saw a big rock and this white man and his son were coming. I asked why does this big rock have a hole in it? I pay respect with bullets and also tobacco and I gave the message for the caribou, to ask them if I can harvest them. That's how I pay respect to the big rock. As soon as I pay respect out of nowhere caribou came straight towards us and that's how I shot the caribou and after we cleaned the caribou and then on the way back we saw a whole herd of caribou." The white man told his son, Bobby paid respect to the rock, go check it out and see what Bobby did so the son went to the big rock and the son paid the big rock. My grandma had told me this story and how paying respect to the land helps us.

Joanne Barnaby: Elders have also said to us that because this area is the home of the caribou it is their land and we have allowed this mine to take place and it's been damaged, we need to apologize to the caribou and to let them know that we still love them and we still need them. That is part of what we have to do. I know there is elders who feel bad, they cry because the caribou are

disappearing, it hurts them, it hurts their hearts. So that is part of what we can do to help with that.

Natasha Thorpe: **Next steps and sessions**

Kathy Arden: We've talked a lot about monitoring and even though we have said the word monitoring maybe we could have more discussions on the process of training, speaking with people from the hunting organizations and get a finer idea of what this monitoring model will be, including funding, buildings required and to start thinking about it now.

Chloe Dragon Smith: This might be a separate topic but stewardship, just general, because monitoring would be one aspect of stewardship but I think there is more we can do in the long term.

Wayne Langenhan: Earlier on I mentioned about the whistles for deterring caribou from coming here. They are high pitched so humans can't hear them so maybe they still have something the same or something better than that and maybe that could be looked into.

Chloe Dragon Smith: They do that in Victoria around people's house for the deer.

Joanne Barnaby: Any other ideas for a focus of discussion?

Denecho Catholique: Water.

Natasha Thorpe: We have had a few sessions on water and fish, and unfortunately you weren't there but do people feel we still need to talk about water? (nobody raises hands)

Kathy Arden: We had talked about working in collaboration with the other mines and maybe Dominion Diamonds site because it is so close so it affects what happens here on Diaviks site. I know we can't guarantee in the next month or so that they are going to cooperate with information we might want from them, but it might be something we can discuss on how we can approach them and how we can find out what their effects are for here.

Joanne Barnaby: Colleen did you want to walk through what is in our plan for topics? I know one outstanding is the north inlet but also A21 that is just under construction now.

Colleen English: I also went through the notes over the last couple of days and I have some of those outstanding questions.

DDMI Presents on Next Steps

How much the lake will go down when they fill the two pits in the same summer? 1.33 inches

How many aboriginal's work here. Environment department: 5 out of 10 employees are aboriginal. Diavik mine: 280 Aboriginal employees, and that is 25% of the total workforce and that was at the end of 2015.

Wayne Langenhan: I remember asking about the approximate volume of slimes but also the dimensions?

Pictures of the North Inlet Shore Line

Colleen English: Still waiting on the dimensions from Gord. One of the "problems" of the water that comes out of the mine is that it is really nutrient rich.

Kathy Arden: Do you notice any kind of scaling or any growth on the rocks along the shoreline that might be different then before?

Colleen English: How green the pond looks is because of how many nutrients are in there, you get a lot more algae growth. There will be times they have to shut the treatment plant down because they get algae growth inside and they need to clean it.

Kathy Arden: And then Gord was saying the other day that there is some contamination of hydrocarbon and its nutrient rich at the same time, how does that combine together?

Colleen English: The hydrocarbons are primarily in the sediments. It's likely that happened in the first couple years of underground operations. Nutrients don't have a big impact on hydrocarbons. That's going to be the biggest question is figuring how to treat for the hydrocarbon accumulation that we have seen and that's one of the reasons why the North Inlet closure plans are an interest for us to talk about with you and I know basically from what we have heard definitely in this session and in others, it's also been an interest for the panel. One of the struggles from Diavik and Gord's perspective is whenever we come to the panel we want to have something at a state and a point where they know enough to share with you but then still have time to make adjustments based on recommendations from the panel on the back end.

On the North Inlet right now they don't know enough about what they can do to treat for those hydrocarbons in order to be able to confidently present that to you and have a bit of a plan around it. So it is on the list but it is not one we can do next session.

Denecho Catholique: I was just wondering about the pictures and I would like to add that you get more detailed pictures around the North Inlet and the PKC.

END

May 16, 2016 DDMI TK Panel Session #9: Caribou

Nancy Kadlun: Opening prayer

Joanne Barnaby: We will have a few people from EMAB coming in today to see our recommendations. So we will walk through these one by one. We can add more if you have some but we will start with what we have.

Presentation – DRAFT Recommendations

- **Consider controlled burns of vegetation to discourage wildlife from going to specific areas and to encourage natural re-growth over the long term**

Bobby Algona: I think all the dust is going to be all over the island, and all over the plants. If we did burn some areas on the island then some bigger shrubs and plants might grow. I know burns do help a lot of natural re-growth.

Natasha Thorpe: I think we can expect that Diavik probably can't support burns on East Island, I am thinking they would be afraid of residual fuels or something catching fire. Would there be any value in recommending controlled burns in any areas other than East Island? Shores of Lac de Gras?

Bobby Algona: You would have to burn a lot of tundra; you would have to go very far, many miles away from the mine, because that dust goes a long ways.

Kathy Arden: I know that a lot of communities do controlled burns, like Fort Providence and in the spring to get rid of old grasses. And I remember my father doing that and yes you do get regrowth coming back but on that one I don't understand what specific areas? We were just talking about forest fires and destroying food, and then we want to go and burn it up again? I don't understand that part.

Natasha Thorpe: This is something that was said and you might not want to include it. There has to be consensus from the panel.

Joanne Barnaby: If the concern was the dust I don't think that is necessary because the dust gets washed off with rain and with the snowmelt every year.

Denecho Catholique: It's not only the dust we are concerned about. It's the environment and the land. That's why we wanted to do the controlled burn so we can get rid of all the stuff that the mines left behind.

Joanne Barnaby: I think we will have some push back on that one but we can hear what Diavik has to say about the problem they have with that and take it from there.

Denecho Catholique: On East Island what is on there that they don't want to burn?

Natasha Thorpe: We haven't asked them so I don't know but my guess is that this will have been an industrial site for 30 plus years and it would be a safety concern. As Kathy said there are big concerns about forest fires. They may not want to contribute to that risk.

Denecho Catholique: We are talking about controlled burns not wildfires.

Joanne Barnaby: Leave it and see what Diavik says.

Presentation Continued

- **Learn from other countries on how to bring back caribou populations**

Natasha Thorpe: Do we want to be specific and say mining countries or leave it general and say countries?

Bobby Algona: That is a good consideration. So keep it general.

Presentation Continued

Joanne Barnaby: Our EMAB guests have arrived.

Allison Rodvang: (EMAB) I am the environmental specialist with EMAB. I am really happy to be here and thank you for the invite.

Arnold Enge: (EMAB) I am the chairman of EMAB. I was appointed by the NSMA. I worked for Diavik for about 8 years in the early 2000's and I also sit on the other environmental advisory boards for Ekati and the one for Snap Lake.

Joanne Barnaby: We are just reviewing draft recommendations.

9.2 A limited number of boulders (e.g. 3-4) should be placed on top of the NCRP to provide some shade for caribou, create habitat for small mammals and encourage natural re-vegetation.

9.3 Study the wind and snow accumulation on caribou ramps/trails as well as the top of the NCRP before finishing/finalizing the sloping/grading of the NCRP.

9.4 Ensure a gradual slope on the top of the NCRP so that there is a slight dome down the centre.

Kathy Arden: The sloping and grading I think we may have talked about the accumulation of the snow on top. It's not just the sides, it's also the top.

Joanne Barnaby: There was some discussion and I think we are all in agreement that unless there are boulders up there, we don't expect any accumulation on top.

Bobby Algona: Straight down the middle have the slope coming down at an angle so the snow doesn't accumulate so that it's like a dome.

Natasha Thorpe: Everybody okay with that? [Yes.]

I am thinking that Diavik might ask the panel how can they show you that they are recognizing and honoring the importance of ceremony.

Denecho Catholique: I was wondering about putting a sign up at the airport, put up a sign at the airport that says "Pay respect to the land" as you come.

Joanne Barnaby: Those ideas are coming later. These are more general in terms of supporting community initiatives. We have further recommendations for things that should happen on site later on.

Arnold Enge: Just as an idea, the NSMA have a National Aboriginal Day Celebration June 21 and I am wondering if maybe a feeding the fire ceremony may be done at that time?

Joanne Barnaby: Maybe we can ask Diavik to find a way to participate. Are people are okay with that? [Agreed]

Presentation Continued

Bobby Algona: It would be an example for Dominion, an idea to explore and develop to possibly establish a Community Effects Monitoring Program.

Joanne Barnaby: So that should do it. Everybody okay with that? [nods] All right.

Bobby Algona: Put in the Lac de Gras area not just East Island.

Joanne Barnaby: Health and safety of caribou. Okay.

Joline Huskey: I am just reading your last bullet and trying to understand, are we going to recommend to employ community monitoring trainees in various aspects, then at the bottom the last sentence it says, "aim to have community members in leadership roles." What do you mean by that?

Natasha Thorpe: There was a recommendation that community members working here should be leaders, not just labourers.

Joline Huskey: Because when I look at it I am looking at leadership in our community like chiefs, council and the higher up in the government.

Joanne Barnaby: So it would read:

9.16 Employ community monitor trainees and ensure they have a meaningful role in the design of various aspects of closure work, including the building of wildlife ramps; the reclamation of the PKC, the North Inlet and contaminated sites; and any re-vegetation work on site.

Is that clearer? [Yes]

9.17 Employ and ensure opportunities for high level employment/career advancement of trained community monitors (graduates of the training program) funded by Diavik and/or others. In addition to community members, a minimum of one Elder and one youth from each community should participate in the training program.

Bobby Algona: That is what I was thinking about when it comes to the monitoring so at least an elder and a youth from each community help with the training program.

Joanne Barnaby: Would you see the elders having training in the science as well as the youth?

Bobby Algona: That is what I see.

Joanne Barnaby: So in addition to learning the science the elders would also be teaching the traditional knowledge, physical side of it?

Wayne Langenhan: Instead of putting "at least" you could put a "minimum."

Joline Huskey: Employ and foster I think you can make that word stronger. Like "employ and encourage."

Presentation continued

9.18 Focus monitoring to determine if steps taken/closure and reclamation actions are working the way they were intended, through the following measures:

- Slopes for safe passage of wildlife, boulders for keeping wildlife out of areas, the use of natural water filtering systems, the use of video cameras to detect wildlife presence, the testing of water from the North Inlet and PKC area, understanding ecosystem dynamics and the linkages between components, cumulative effects
    - Include plant growth, plants dying, fur & antler condition, and presence/absence of injuries or spots on the side of caribou as some of the indicators of caribou well-being
    - Caribou presence identified on cameras, collars, and sightings would trigger monitoring
    - Other animals can be indicators that the land is not healthy (e.g. smaller rodents, birds, fish can tell of change happening in larger animals like caribou, bears, etc.)

Grace Martin: Instead of caribou health would it be caribou well-being?

Joanne Barnaby: Good suggestion.

Joline Huskey: I have a question. The very first bullet "focus monitoring to ensure systems are working." When I see "systems" I think electronic stuff so put in to ensure recommendations... I think.

Arnold: Focus monitoring to determine if reclamation plans are working?

Joanne Barnaby: Reclamation actions perhaps? [Yes]

Presentation continued

- **Install motion-sensitive wildlife cameras on the north and west sides of East Island and at important caribou crossings. The north side camera(s) would point to the lake and mainland, the west side camera would point towards the mine. Other possible locations on East Island: 1 on top of the rock pile as it is a high point like a lookout (determine if the camera could rotate around); 1 on the south dike of A21; 1 on the west point (near the accommodations); 1 on the south dike of A418 (these 3 would face southeast). Cameras should also be located at both sides of important caribou crossings of water and land.**

Joanne Barnaby: There are lots of ideas and we don't know enough about what options and details there are. We can make this a guideline instead right now.

Natasha Thorpe: Is everyone okay if we do that? [Yes.]

This next one speaks to that issue, "Ensure that all communities are involved in choosing where to establish monitoring stations" and this was something that I was thinking of last night based on the men's group discussion. Maybe we don't want to use the word "stations" but the men's group identified some areas that would be key places for monitoring caribou whether using cameras, or a high pitch frequency or whatever it is you use there, those could be monitoring areas or stations. Maybe there is a concept of this from your aboriginal language?

Joanne Barnaby: We could say "in choosing monitoring sites"?

Wayne Langenhan: Maybe we can get a hold of somebody from Diavik and get some help in determining what type of cameras would be best.

Joanne Barnaby: We did that in the previous slide so we are trying to narrow this down as a recommendation.

And this next point I am not sure we checked with you, "check to see if Ekati has a camera at the Narrows and, if not, Diavik should install one."

Kathy Arden: I don't know how far the Jay Pipe is going to be from the camera, but Ekati might think we are spying on them.

Joanne Barnaby: The purpose for the camera would be for the caribou crossing so it wouldn't be pointed at them.

Presentation continued

Berna Martin: I just want to excuse myself from interpreting for a few minutes. In Dettah we have an annual spring feeding the fire ceremony because summer is almost here and the community and our leaders will be going to the big meetings and assemblies and they want to have a good meeting, that everybody will agree and they will have safe travel. People travel lots in the summer down south by boat, plane that wherever they are going that they have a safe trip.

We fed the land with tobacco, but this should be an annual thing when people to this, we could go on a tour and sprinkle tobacco. That is our tradition when we go on new land.

Back in 1970s or 1980s, my niece traveled down to the States and while she was getting off the plane she had no tobacco but she had a bunch of coins so she dropped them as she was walking and there was a lady walking after her picking up all the coins and she said, "no don't give them back to me" and she ran away from the lady.

Joanne Barnaby: So some of those ideas are in the second slide for ceremonial traditions. Back to the series of ceremonies leading up to 2030. Do we want to assign some time frames?

Kathy Arden: Maybe it could be discussed because it would go along with the stages of closure. I really like Denecho's idea about paying the land when they come and when they leave.

Joanne Barnaby: First one before mining ends for sure. [Yes.]

Kathy Arden: Yes and involve the workers on site.

Joanne Barnaby: Would that be timed with a TK Panel meeting?

Kathy Arden: Yes because then there would be no extra expense of money.

Joanne Barnaby: So maybe 2017? Second one 2020? Then 2030 or when they leave.

Kathy Arden: The last one would take a lot of planning and a lot of spiritual guidance from our elders and would be costly.

Joanne Barnaby: And you would want drumming groups?

Kathy Arden: Yes.

Joanne Barnaby: So that is the last one. Are people comfortable with this? [Yes.] Good.

9.22 Respect spiritual beliefs and the importance of healing ceremonies of Aboriginal communities, work with the TK Panel to plan spiritual gatherings on site now through 2030;

- One would be held early/soon to help people on-site understand Aboriginal ceremonial ways, possibly timed with a TK Panel session (e.g. 2017);
- Second would be to start healing the environment (e.g. land) (e.g. 2020);
- Third would be designed to seek guidance on the finalization of the closure plan (e.g. 2023);
- Fourth would be large and involved to formally invite the spirits to return to the Island before Diavik leaves (all communities invited, drumming, etc.) (e.g. 2030)

Break

Joanne Barnaby: We had one last recommendation at the end of the slideshow that we forget and it states "Do not reconnect the North Inlet, open pits and PKC areas with the lake and land, keeps dams and dikes in tacked unless the water and sediments in those areas is proven to be clean and the same as Lac de Gras."

Bobby Algona: I said yesterday do not reconnect North Inlet and PKC because there are planning on leaving the solids in there.

Colleen English: The plan right now in the PKC is the beaches would stay but be capped with rock to help with dust. There are two areas of the PKC that are currently dammed and they plan on cutting those two dam areas open, one on the east and one on the west, it's like a V shape so that if there is rain or water on top of the rocks it would run through the land before it would get to the water. Diavik would have to reach a point where any water coming out of those areas would have to be clean. The fines do stay under the rock cap. The slimes are still an issue, they have a trial coming up to play around with the coarse and fine PKC stuff. So Diavik still isn't at a point where it knows what it is doing with the slimes so they need to do more work in order to be able to come back to you with more information. Once they know if they can reduce the amount of slimes and possibly even dredge some of the existing slimes out of the PKC, and if that can go underground it will really change the way they deal with the slimes and the PKC area.

Natasha Thorpe: I think maybe the concept and the idea is really that the boulders are mainly there to keep wildlife safe and keep wildlife out so I think we can make that known in the report and strongly understood and shared.

Bobby Algona: That still conflicts with my mind because we have tremors and so that may still leach out. I am wondering, it's still hard on my mind, because the fault lines and the cracks can happen. 10 years ago duck hunters went down to Victoria Island. On their way back, the ice started breaking apart because of a tremor and they had to go really fast to get off the water. I knew it was a tremor because we don't normally feel these things.

Colleen English: The slimes are not going to go away, so we need to find the best way to deal with them, and shipping them off site is just moving the problem to another place. I know everybody would love to take them to Alberta but it's not responsible in terms of trying to dispose of something that has been created here. By putting them in the pits you are lessening the risk that wildlife would come in contact with them.

Natasha Thorpe: I have put the question down, "Does the closure plan include considering tremors or earthquake activity?" So we can ask Gord when he comes back.

Arnold Enge: Considering putting the slimes in the pits or underground, if it goes in the pits is there a cover before the water?

Colleen English: I don't believe so I think it is just water but we can ask Gord.

Nancy Kadlun: The slimes, is it dryable or flammable?

Colleen English: I don't think so, it is very wet and it is very hard to dry.

Joanne Barnaby: Any other questions on this particular topic?

Nancy Kadlun: Would it be safer to leave the slimes where they are because if there was an earthquake, and they were underground or in the pits, it would go in the water?

Colleen English: The pits will already be connected to the water (Lac de Gras) even before an earthquake. But we are in a pretty low seismic zone.

Joanne Barnaby: Is there any other guidance we want from Colleen before we finalize these?

Natasha Thorpe: I have a couple questions, the first one is the idea of communities or EMAB or GNWT taking over the existing TK camp, is it currently in the best location or should it be moved?

Joanne Barnaby: The women's group did discuss it and they want it left where it is. They see it as a base for monitoring the whole area as oppose to just the island and it has berries around it.

Natasha Thorpe: We talked a bit in the men's group about real specific things that could be monitored as part of making sure that caribou are healthy. I wondered if there is anything else that has come to mind. What are you going to be watching for?

Joanne Barnaby: In the women's groups they said injuries to [caribou] legs and ankles.

Natasha Thorpe: What would it look like monitoring caribou, out on the land? Looking for tracks?

Bobby Algona: We wanted those cameras out which will help with some of those questions.

Joanne Barnaby: Part of one of the benefits that the women's group identified with inviting collaboration with Ekati was that if those motion-activated cameras indicated caribou arrival to the site, that would trigger a response from them to come and assist with the behavioural monitoring while they are on site.

Bobby Algona: Caribou are not the only animal that those cameras would be monitoring, wolves, rabbits, bears, wolverines. When you look at these other animals as well, if there were some sick animals these cameras will also record that and that would mean there is something wrong with the ecosystem.

Natasha Thorpe: That is a good point. We tried to focus this session on caribou because that was the request from the TK Panel but when you are thinking about a larger monitoring program are there particular animals that are really important? What about some of these other animals that Bobby has mentioned?

Joline Huskey: I mentioned in the women's group, other small fur-bearing animals are also indicators of change and larger animals. So if you see changes in larger animals, you can track it down from smaller animals like the mice, the squirrels, the fish, the birds that are also indicators of change like the larger animals like the wolves, the bears and most importantly the caribou.

I have a question I brought up a couple of times about the PKC. They have engineering designs for the North Country Rock Pile and a proposed covering of the PKC and I asked that if that was going to be left like that depending on the outcome of the change, that switch over in the processing plant where we took a tour and where the changes are being made and second part of the engineering work would have to be done if they are going to drain out the PKC, the tailings into the pits. It would be good to have this group look at what the engineers come up with and doing something like that, because it would be good to see and good to know because when you put water over top. Water is a lot of pressure to keep it down. Another recommendation is the next time they come up here and go look at the underground to see where the slimes might be going.

Natasha Thorpe: Thank you for that. Two things, we had a TK Panel session that only talked about the PKC and I think the report from this would be helpful to share that with you. I will make sure that you get a copy of that. But I can put your recommendation into words if others are in agreement about visiting the underground.

Joline Huskey: Another thing I said is there going to be engineering work to see if the PKC will be completely removed and put in the pit?

Natasha Thorpe: That's what Colleen was explaining, that's what Diavik is doing right now.

Bobby Algona: They have lining on the side of the walls around the berms where the PKC is, the middle is not lined.

Natasha Thorpe: Added recommendation. “Given that the pits are going to be refilled with water and that Diavik is considering putting PK into the pits and underground shafts, the TK panel requests a tour of the pits and underground shafts to see the receiving environment with their own eyes.”

Kathy Arden: When we were on the tour of the pits I asked Gord about earthquakes in the area and he said no on that point. The other one with regards to faults on the walls they have these laser things that check the pits I think every 10 minutes so if there is ever any movement, even slight, it automatically sets off an alarm so they can empty the pits of people then they do not go in until that piece of rock has fallen.

Joline Huskey: When we took the tour of the two open pits I also heard him mention that because they are exposed, that’s one of the reasons why there are cracks in the walls. Before they were underground and they weren’t exposed to sunlight and weathering. There is no water in there and that is one of the reasons why there are cracks in the walls.

Natasha Thorpe: Any other questions we want to pose to Diavik?

Joanne Barnaby: That is a fairly strong case as to why we should go underground and to see those shafts and to go down to the bottom of the pits. Any other questions or comments? Any new recommendations? Anything we missed?

Bobby Algona: I am also assuming that when we ask for the slimes testing to be given to the communities they also describe what is in them.

Joanne Barnaby: Together with the lab testing that they did, describe what is in the PK and slimes in the community reports. Okay.

Natasha Thorpe: I want to acknowledge that Janet was up late working on the notes and it would be helpful to us that you have a look at your words while they are fresh. We are really grateful that you take the time to check them over. So I am going to suggest we give you an extra 15 minutes over lunch to go over yesterday’s notes.

Lunch

Natasha Thorpe: Next steps or topics for the TK Panel: A21 - North Inlet - SC Rock Pile - Mine Shafts - Building deconstruction, metal disposal - 2018 AEMP

Denecho Catholique: I see we talk about the water, the land and the caribou and I was wondering why we didn’t discuss what they are going to do with the left over metal? The debris, pipes.

Natasha Thorpe: To remind everybody, the first few sessions were run through EMAB and then you decided you wanted them run through Diavik to have that direct connection. The sessions that were held through EMAB, there was one on caribou monitoring, renewing the landscape, and then the other two sessions were about the rock piles, what they should look like, what shape. Since the TK panel has been run under Diavik they had given their hopes for different sessions, you had given your hopes and in the end this is what it looked like (**presentation)**

Wayne Langenhan: I was just wondering if we should talk about how much is going to be buried under the landscape, steel, insulation, waste disposal, contaminates?

Bobby Algona: The very last session that I had right here in the room and we had a discussion about waste disposal and PKC, I think in my mind I am updating myself, if they are not going to be taking out any PKC or getting all the contaminated water trucked out. These buildings being solids I would think it would be a suggestion to get all the metals sent out on truck because they are stable and they are fixed and a lot of these buildings have contaminants in them and those are some of things that we have talked about a little bit.

Natasha Thorpe: It sounds like there would be enough for a session about the issues you have raised. Anything else to do with the environment, land, birds, fish?

Colleen English: What would be the difference between the A21 and the SC Rock Pile sessions?

Natasha Thorpe: One would be the A21 pit and one would be SC Rock Pile, would we do those together? [Nods yes] Okay.

Joanne Barnaby: What about a session to detail the design of the monitoring program? We have identified some broad goals, incorporating science and traditional knowledge and youth and elders, finding ways to link with Daring Research Camp.

Wayne Langenhan: What is this Daring Research station?

Joanne Barnaby: Karin mentioned it in her presentation. It is basically a science based research center. I'm not sure they would call it collaboration, they do have people from communities at the camp but they don't have a clear program yet.

Arnold Enge: What about the lay down areas and building pads?

Natasha Thorpe: Colleen said it would be part of the building deconstruction.

Wayne Langenhan: I would just like to know exactly what is going to be left behind here, what buildings, if the airport terminal is going to be there, roads taken away or left as is?

Joanne Barnaby: Alright do you want to do a check in circle just to see if there are any outstanding thoughts? Janelle is saying no. Everybody is good. We are just waiting for Gord.

While we are waiting I wonder if our guests would like to speak to their longer term role and how they see that evolving and whether there is any clarity in that beyond closure.

Arnold Enge: As a general comment, one of EMAB's roles is to monitor the company, the government. We are really supposed to monitor everyone involved with the Diavik project so that includes the aboriginal communities and so we have been tasked with trying to figure out how well Diavik is doing at protecting the environment here on East Island. As part of that role, we see the Traditional Knowledge Panel providing recommendations directly to Diavik and it is our role to find out how Diavik is doing in incorporating your recommendations into their management plans. We follow all your recommendations as they come out and Diavik provides a preliminary response to your recommendations so that gives you the immediate feedback and there is the longer feedback loop if it requires additional time to determine if your recommendation can be taken into account. Diavik then reports those in their environmental management plans that they submit to the Wek'eezhii Land and Water Board and they explain what they are doing with your recommendations and we will also review that. We are always trying to provide feedback to Diavik, and to the regulators and to the aboriginal communities about how Diavik is maintaining the environmental integrity of the site. In terms of long term I would have to check our agreement again.

Shin works with the North Slave Métis, Sean Richardson for the Tłı̨chǫ, there is a new environment employee for Łutsel K'e she has only been on the job 4 or 5 weeks. We have hired Allison who is the main contact person back to the communities with the environmental officers.

Natasha Thorpe: One thing that I wanted to add was the big thick document, on the table, that has all your recommendations is for your review. Speaking of recommendations we have Gord here now.

Presentation of Guidance and Recommendations from the TK Panel

Guidance

Recommendations

Gord: The one about directing the caribou using boulders (9.7). I know there is some strategic places where you suggested putting them right away like at right along the top of the North Country Rock Pile and around the PKC and the North Inlet and you talked about other things like whistles. Are those things that we should identify now to say that they are techniques that work but wait until we actually have a landscape and we know where caribou are or are not going and use it as a form of adaptive management so we can add those things where we think it's necessary, where we think there are problems, is that were you are going with that?

9.7 Place boulders along the southern edge of the NCRP, along the edge of where the steep slope between the NCRP and the PKC will meet to keep caribou away (refer to map).

Kathy Arden: The camera idea came from the men's group so maybe they could answer.

Gord: I get the cameras, it was more the directing them around the landscape, how much of a guess do we want to take at that or do we want to wait and see or a bit of both? The other was on the Traditional Knowledge Camp, I actually never thought about using it more broadly then just for Diavik but I would ask the question, it's a good idea but is it in the right place?

Kathy Arden: That came out of the women's group and the idea was to leave it there. Number one is we didn't want to have too much disturbance on East Island after closure, and besides having berries there, it can collaborate with Daring Lake with it being out there they can come in here and monitor and see what's going on without hanging around on the island.

Gord: What if one of the partners in this is Dominion and one of the observations that we want to be making related to caribou movement further north on their property would it still be in the right place for doing that?

Kathy Arden: I think the hope is we will have Dominion online with us by then to be a partner. Because they are so close to this mine as well. That they would be in agreement to partner with us on the Traditional knowledge because they are going to put in Jay Pipe that is still going to affect some of the environment here on Diavik's island.

Gord: Very good, lots on training and I will have to get help from others on training.

Natasha Thorpe: Requests for next session, one was a whole session on just monitoring and training and really fleshing it out.

Map Overview

Gord: Thank you

Kathy Arden: There was a question that came up regarding tremors. Do you feel earthquake tremors in this area and the walls of the pits, can you explain how those machines work if there is any loose rock?

Gord: We are in a very low seismicity area of the world. We have almost no tremors in this part of the world. And that was very important in designing all the engineering around the dikes and the underground that we understood that. Despite that when you do build a mine with a lot of rock on the wall it does start to relax and as you saw there are places where you get rock fall and the monitoring that you are talking about it shoots laser beams all around the inside of the pit and every time it does it, it measures the exact distance between each one of these reflectors and before a rock falls it starts to move very, very slightly so they have a very good idea when that

rock is going to fall and that is what they use to make sure everyone is out of the pit and everything is safe until that rock fall happens and then they clean up everything before allowing anyone back in. It's in the underground as well.

Natasha Thorpe: I am glad Kathy has a good memory. Other questions for Gord we recorded are:

If the PKC goes into the pits or underground are you going to put a cover on it before the water?

Gord: Very good question but we have not gone to that level yet.

Natasha Thorpe: How long with it take to put the cover on the North Country Rock Pile?

Gord: Several years, about 1 year for the till and then 3-5 to put all of the rock on.

Arnold Enge: The volume of glacial till, it there sufficient amounts for the North Country Rock Pile?

Gord: We do have enough. We are going to use the A21 till first.

Arnold Enge: What about South Country Rock pile, same closure plan?

Gord: The SCR pile doesn't need, to be covered because it is the type 1 rock, the good rock.

Denecho Catholique: I mentioned earlier about the metal, what are you going to do with the metal?

Gord: We have a landfill on site, I don't know if you saw it but it is part of the North Country Rock Pile, it's a deep hole in the North Country Rock Pile so we put all of our inert material which includes steel in there and then it gets covered with rock and frozen in the rock pile.

Denecho Catholique: So they are going to bury it?

Gord: If it has no value or someone isn't going to take it then yes.

Denecho Catholique: They don't know how much is going to be buried.

Gord: In the worst-case scenario all of it, but we are hoping that some of the material is going to go to other uses. We do have some recycling programs going on but we will have to wait closer to closure to have a better idea.

Kathy Arden: Just an extension on that: I was noticing along the roadways, the pipe sticking out so all that stuff would be pulled out, right?

Gord: For a mine after closure you shouldn't see anything other than rock.

Bobby Algona: Would it be possible to take some of these maps home with us?

Gord: Yes.

Bobby Algona: Would it be possible to take the presentation home?

Natasha Thorpe: Yes. Does everyone have the evaluation forms? Please fill it out. Feel free to add ideas.

Closing circle

Janelle Nitsiza: First of all I would like to thank everybody, the translators, Janet and all the facilitators and especially the elders they are so full of knowledge. I feel very fortunate to be here and hear all of your stories and to learn from you. I have enjoyed my time here.

Bobby Algona: As a group here, we all come together to try to express our feelings, to give back to Diavik our traditional knowledge. We have made a lot of changes but I don't know it might have been a bit different from what they were thinking. We are all brothers and sisters when we come together. It's really hard for me to think because I didn't know our good friend George passed. It will take time when you lose friends like that, they become family when you come to meetings like this. We always had that thing with George and laughed with George and we express each other's feelings towards each other and losing a friend like that is really really hard. God be with George and that he may go to a safe and wonderful place wherever he has gone. It's really hard to say this but we have another guardian angel looking after us. I would like to say thank you and my group also and God be with George.

Kathy Arden: I would just like to say how nice it is to see everyone again and to meet the new people coming, it always amazes me how Joanne, Colleen and Natasha can pull together all our ideas and we really appreciate all the hard work that you have done.

Nancy Kadlun: I am so thankful to be invited here again, I am always really thankful for the translators and the facilitators. I really enjoy when the elders talk to us as well be because I hear our elders who have passed away and it makes me feel like they are here with me. I am thankful for everyone.

Wayne Langenhan: I would like to thank the facilitators and Colleen and Gord even though he snuck out, to Diavik and Peter and Berna here translating and our transcriber here, Ryan our sound man. Everybody did really good and the suggestions. I would also like to thank Dianne Dul for the tour and the bus driver got us back safe from the tours and the pilots that are taking us out and I hope everyone has a safe flight out and gets home all in one piece and if we can stall this and put it off a little bit longer we could probably have a really good supper.

Rose Betsina: We had a good meal and a good sleep. Some people that are here that have passed on, that is the only way to get through this kind of difficulty is to pray. When George passed away - and his wife is here - sometimes I think what her thoughts are she is laughing with us and I went through those difficulties. I never got to see my husband's body, he has never been found and there are times when I get so lonely. When the plane is coming in I think he is coming back. I used to love sewing. One of my addictions is smoking but when you get lonely, you get addicted to something, what can you do but pray to our creator that we stay and we had a good session I hope that we hear only good news about each other.

Denecho Catholique: I would like to say I am happy to be here and this is my first meeting here and I would like to attend more meetings because I like hearing the stories from other cultures like Bobby I like his stories al lot.

August Enzoe: Mahsi. Thank you everyone of you around here we have been together a week. We all thank you all for doing a good job. For me, I have been on this board for a number of years especially with newcomers here, they get to hear about everything that we have been doing, not only this one here but Ekati. I have been on this board for a long time, the elders that used to sit with us, they are all gone. All those times it's only me and my partner across here, I think I am still older than him though. I am 78 now and my body is getting weak now but I still keep going here next time if I am healthy and thank you, every one of you.

Celine Marlowe: I am glad that I came this year, it is kind of hard for me, but I have to accept it the way it is. Before my husband passed away, he was talking to me about being strong. When I look at it now it's like he was preparing me for now. It's really hard, especially in the mornings, and we still have to teach our young generation. We have to keep continuing to be strong for our young generation all over. It's not only back home. I always like to give good advice all over we have to listen to one another and take care of one another. It doesn't matter who they are. I talk to them as if I have known them forever. I don't even know that person, that's who I am. Thank you so much for being here.

Louie Zoe: Thank you. We have spent the weekend together and we have shared a lot of stories and our friend we lost from Łutsel K'e. We prayed for him. When we work together like this, it is very difficult to travel from one place to another, but when we get together we often talk very wisely about subjects. So I am very thankful for all of you. We may not understand each other but through the interpreter we share our stories and I am thankful for that. As for next meeting, we don't know how our days are coming we don't know about the future so as we part our ways we need to pray for one another. I am thankful so with sharing your part of the stories, it looks like it is impossible to reclaim the land but once we work together reclamation can take place. I am thinking that you have a safe travel home.

Dora Migwi: Since we got here we have shared a lot of good stories, we can only pray for one another, we don't know what is going to happen in the future. The cooks, we ate well. I am very thankful we have shared a lot of good stories and I am very thankful for that. It would be very good to improve how we put the recommendations together. Some of them, they travel many distances and everywhere they travelled. We the elders are not going to be living long on earth. Live a healthy life and work amongst each other. If you have elders to talk to you, use their words; their words are their wisdom. We had a very good meeting, we have the facilitators working hard.

Arnold Enge: Just a couple of things. I would like to say thank you to the elders for coming and sharing their experience on the land. I want to thank the youth for their contributions and their youthful

exuberance and their energy and of course Diavik for hosting the TK Panel and for all your hard work.

Doyle Algona: I would like to thank the elders and the youth and thank you to everyone.

Grace Martin; Mahsi cho to everyone that came here, everyone have a save trip home and I hope to see you in the future. I wish nothing but the best for the closure of the site.

Joline Huskey: I work for Tłįchǫ Government. Thank you for inviting me. I would like to thank the interpreters and transcribers, the workers and the facilitators and also Diavik for hosting us here. It's been a long time since I had a good sleep. I just took my first year of the ENR program and I really enjoyed listening to the elders, to other groups involved and what others are doing. It's really touching for me when you talk about the environment because I really care for the environment. We try to restore it if damage has been done and I really like the idea that the recommendations that are going through and looking at the documentations. So thank you.

Berna Martin: I would like to say thank you to everyone that came, thank you to Diavik we had a good stay and a good meal and thank you to Joanne, Colleen, Natasha, Janet, Ryan.

Peter Huskey: [Not recorded]

Allison: Thank you for inviting me and Arnold to come and listen to the recommendations; it will be nice to communicate more with you guys.

Dianne Dul: I just want to thank everyone for participating and it was really nice to hear the youth being really involved this time with the panel. I look forward to the day we can sit on top of the rock pile and have the wind blowing in our hair and the little bugs bothering us and see the caribou coming.

Natasha Thorpe: I forgot to mention that Karin and Chloe had to get on the flight this morning but they wanted us to pass on their gratitude and appreciation for being part of this session. Karin's door is always open for questions.

Thank you to everyone for taking time away from your families. Thank you Denencho who's just had twins, 3 ½ week old twins, so he has taken some really special time away from his family to be here. I feel really excited about the youth. We are always talking about the future and the elders are always reminding us of that link. If the youth that are at this panel doing the hard work are a sign of what's to come, I think it's pretty wonderful. Thank you to Diavik and everyone for the support.

Joanne Barnaby: I would like to make special mention of the beautiful song from Nancy. I am always amazed at what we are able to get done. I know sometimes the questions we put to you are difficult and challenging to work through and you have to think about things that you don't have a lot of experience with and try and be helpful and so I really appreciate the effort and the honesty that you come at that with. I appreciate the reception that we get from Diavik. If you

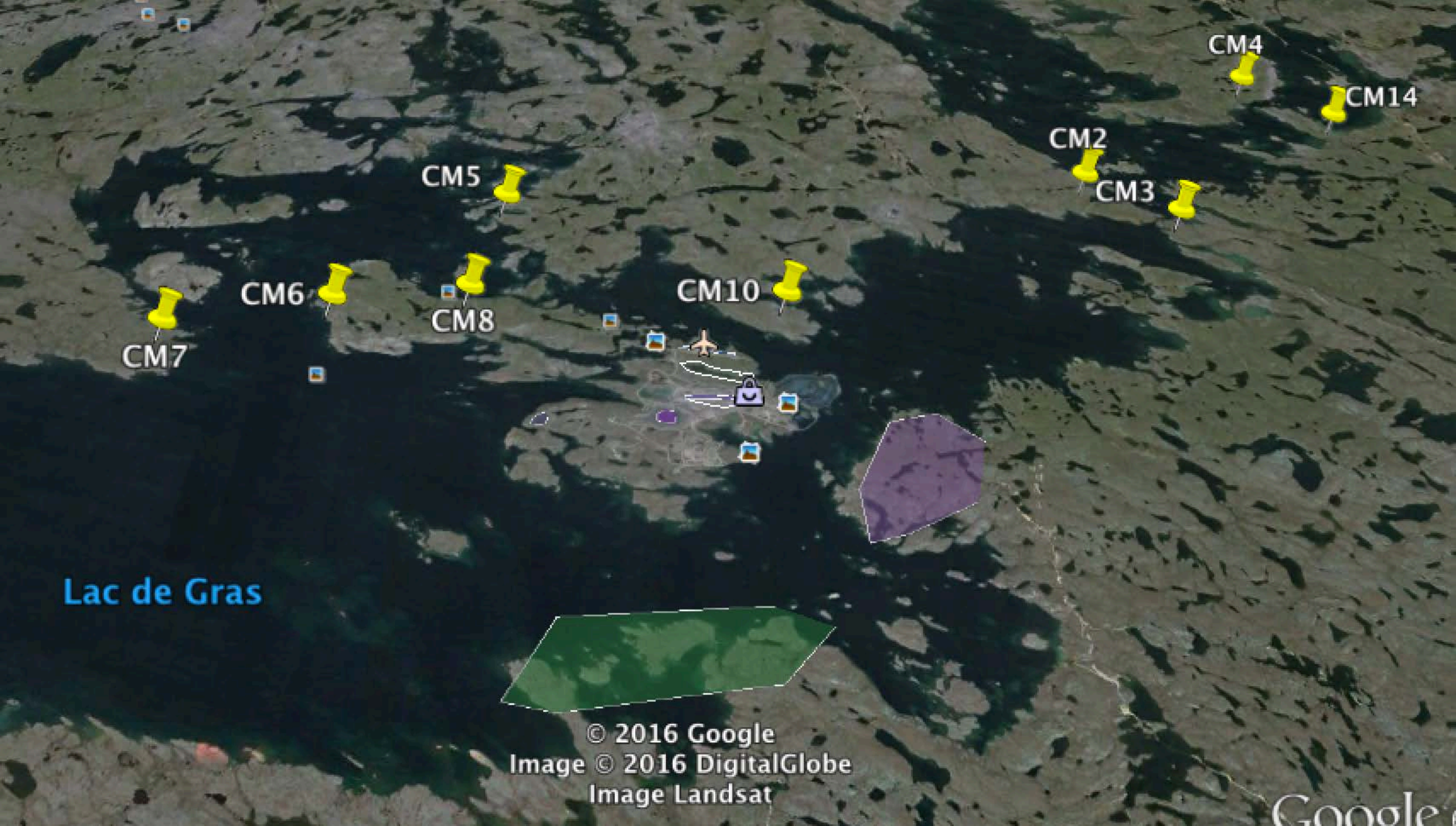
look at the history of the panel, we have had a lot of support from them with our recommendations and when they are not able to support a recommendation they provide us with very clear reasons why they can't. I really look forward to seeing and working with you again.

Bobby Algona: Of all the time that I have been coming to these sessions and sometimes I want to show my camp life. If people want to see my pictures of Pellet Lake I can show you after.

Colleen English: Check out will be open by the time we are done here.

Joanne Barnaby: Natasha just suggested an idea that I think is quite wonderful and that is to dedicate the report coming out of this session to George Marlowe. Is everybody good with that? [Yes.] Okay good.

Dora Migwi: Closing prayer


CM4
CM14
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CM6
CM8
CM10
CM7
Lac de Gras
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Image Landsat

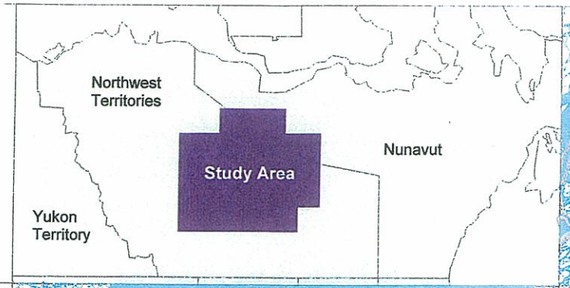

Lac de Gras

Appendix E

Maps Documenting Public Traditional Knowledge Specific to Caribou

Tłı̨chǫ and ʔekwǫ̀

(Credıt: Whaèhdǫǫ̀ Nàowoò K'ǫ̀, Dogrıb Treaty 11 Councıl)



66

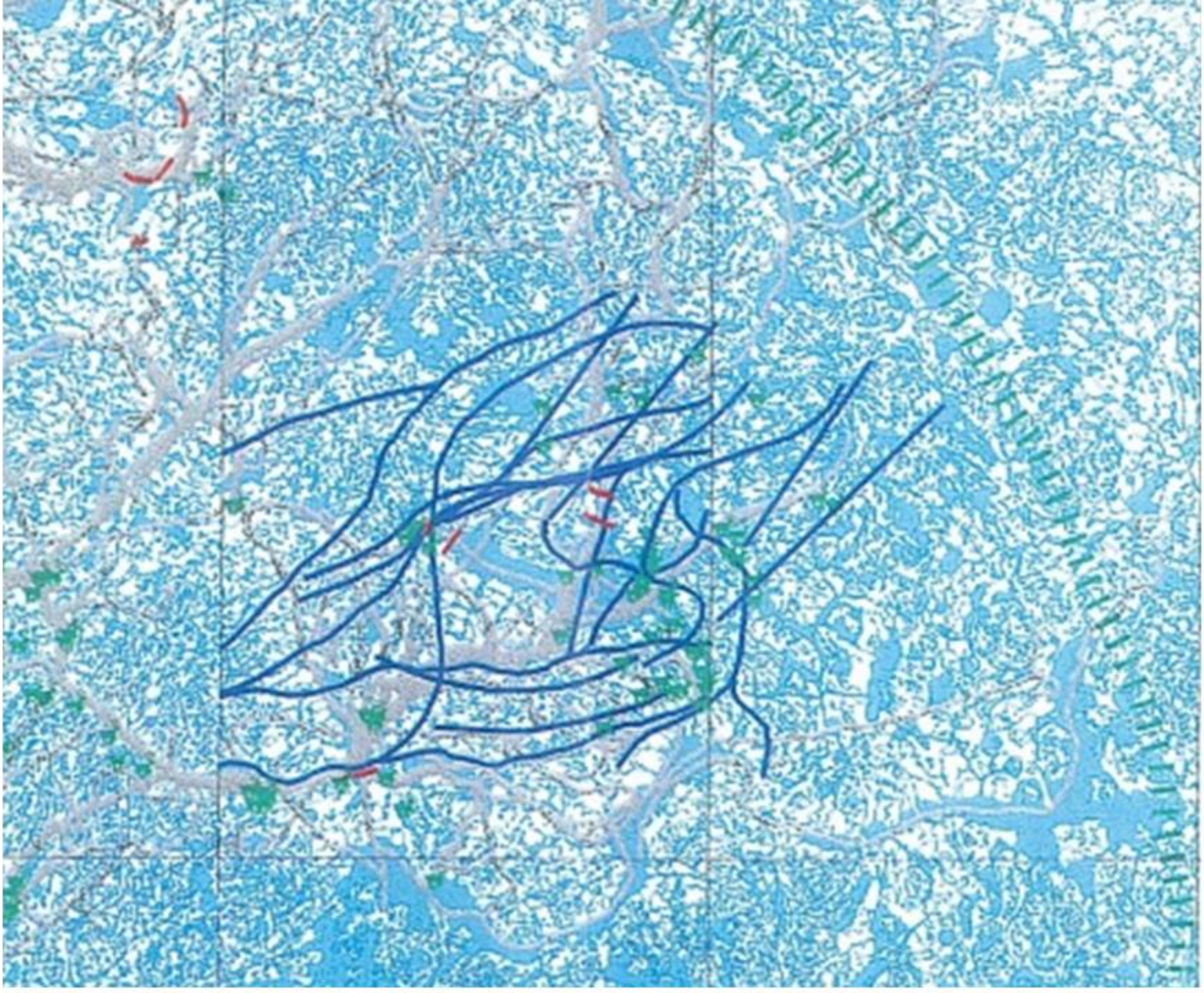
64

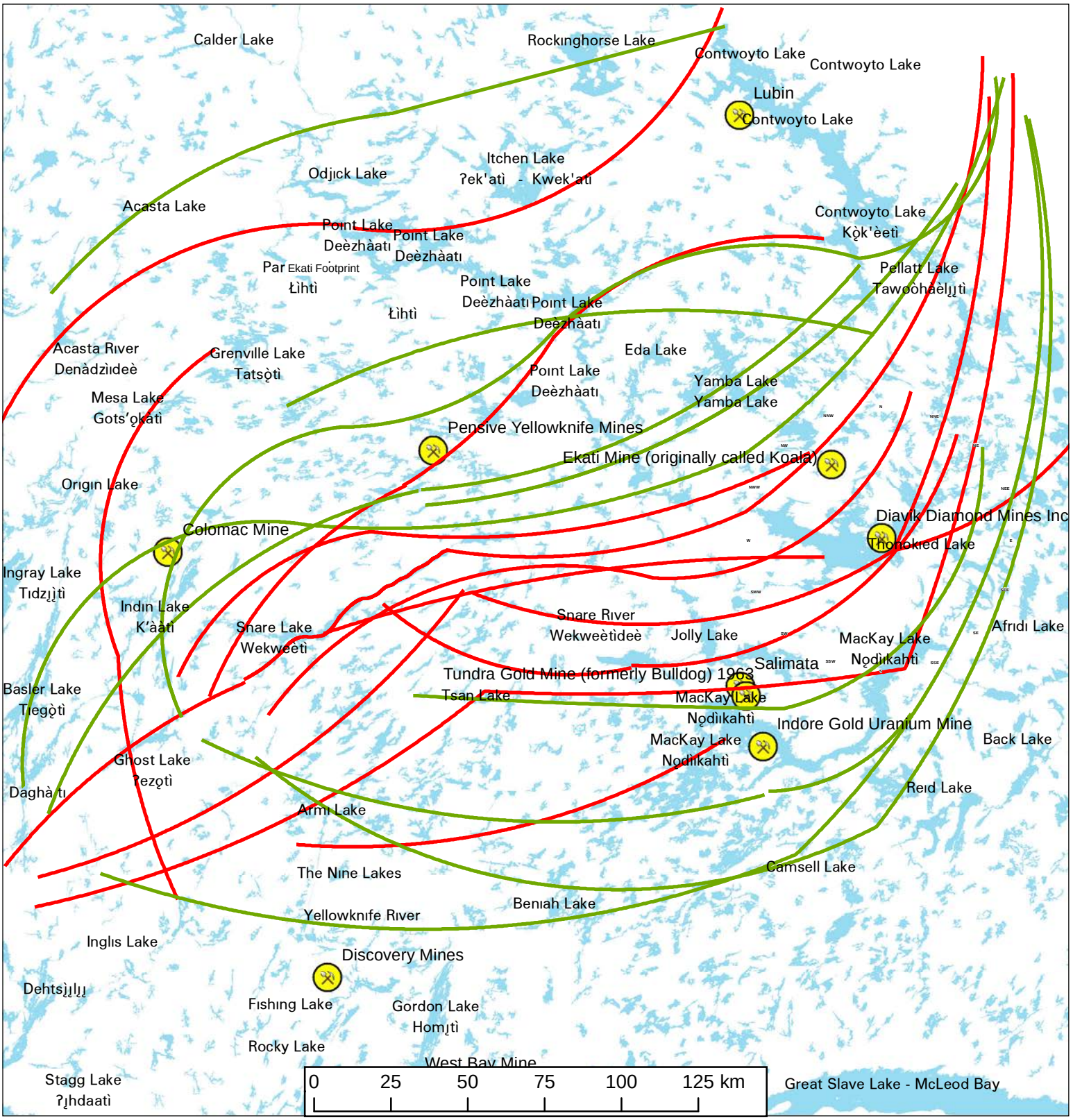
62

122 120 118 116 114 112 110 108

Legend

- Carıbou Harvest Sites
- Carıbou Fences
- Carıbou Water Crossıngs
- Dogrıb Harvestıng Traıls
- Carıbou Traıls ın the ʔek'atì Area
- Mǫwhı Gogha Dènı̨htł'èè (Mǫwhı Boundary - 1921)





Bathurst Caribou Migration Trails

Tłı̨chǫ Tradıtıonal Knowledge

After the mines

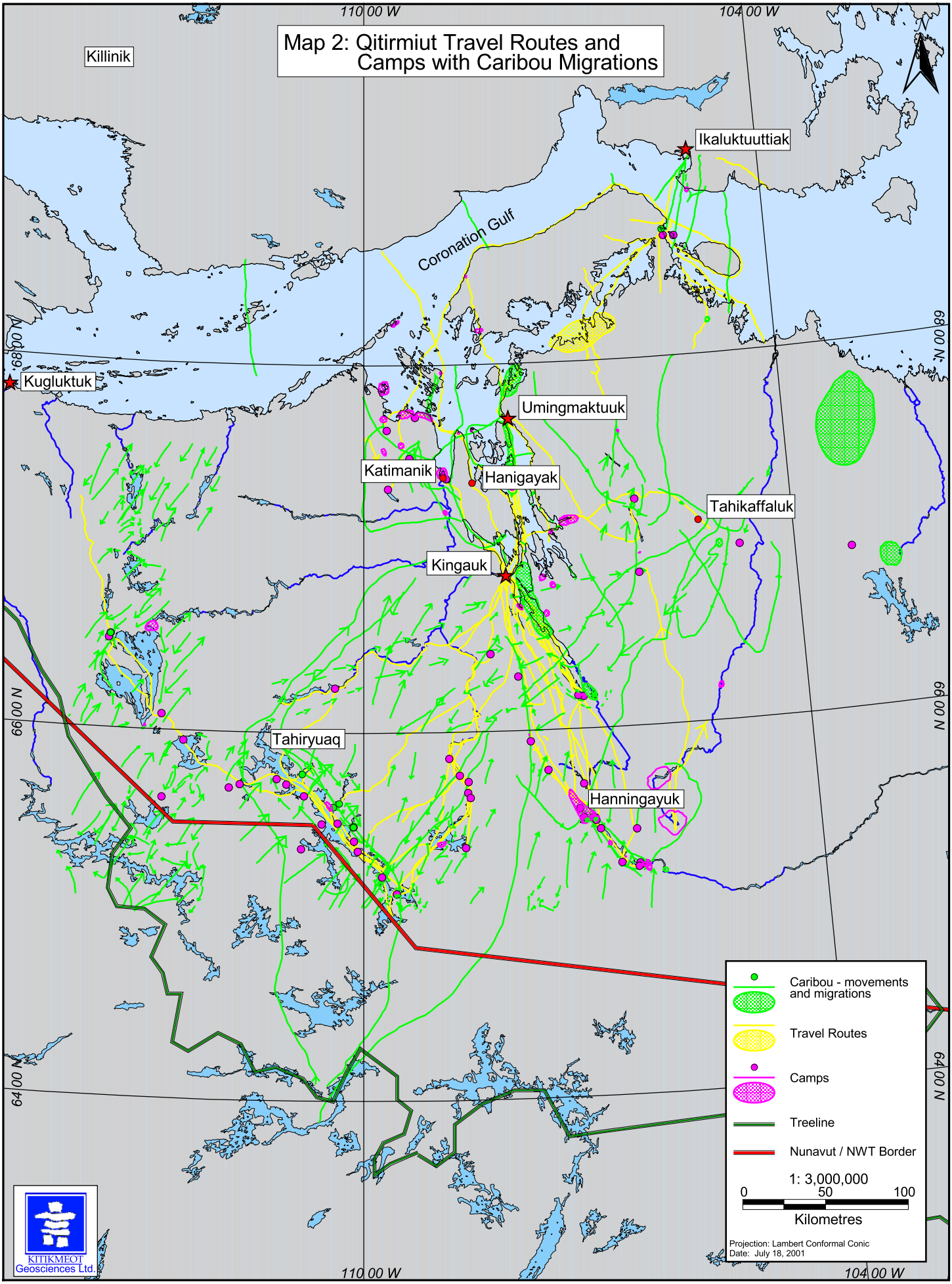
Prior to the mines

Mine Sites

N

W E

S


Map 2: Qitirmiut Travel Routes and Camps with Caribou Migrations
110 00 W
104 00 W
68 00 N
66 00 N
64 00 N
Killinik
Ikaluktuuttiak
Coronation Gulf
Kugluktuk
Umingmaktuuk
Katimanik
Hanigayak
Tahikaffaluk
Kingauk
Tahiryuaq
Hanningayuk
Caribou - movements and migrations
Travel Routes
Camps
Treeline
Nunavut / NWT Border
1: 3,000,000
0
50
100
Kilometres
Projection: Lambert Conformal Conic
Date: July 18, 2001
KITIKMEOT
Geosciences Ltd.

Yellowknives Dene First Nation

Traditional Knowledge Website

CIMP NWT (Cumulative Impact Monitoring, Environment and Natural Resources, Government of the Northwest Territories) funded project. This Traditional Knowledge on caribou is the property of the Yellowknives Dene First Nation. Any use of this information must acknowledge this ownership.

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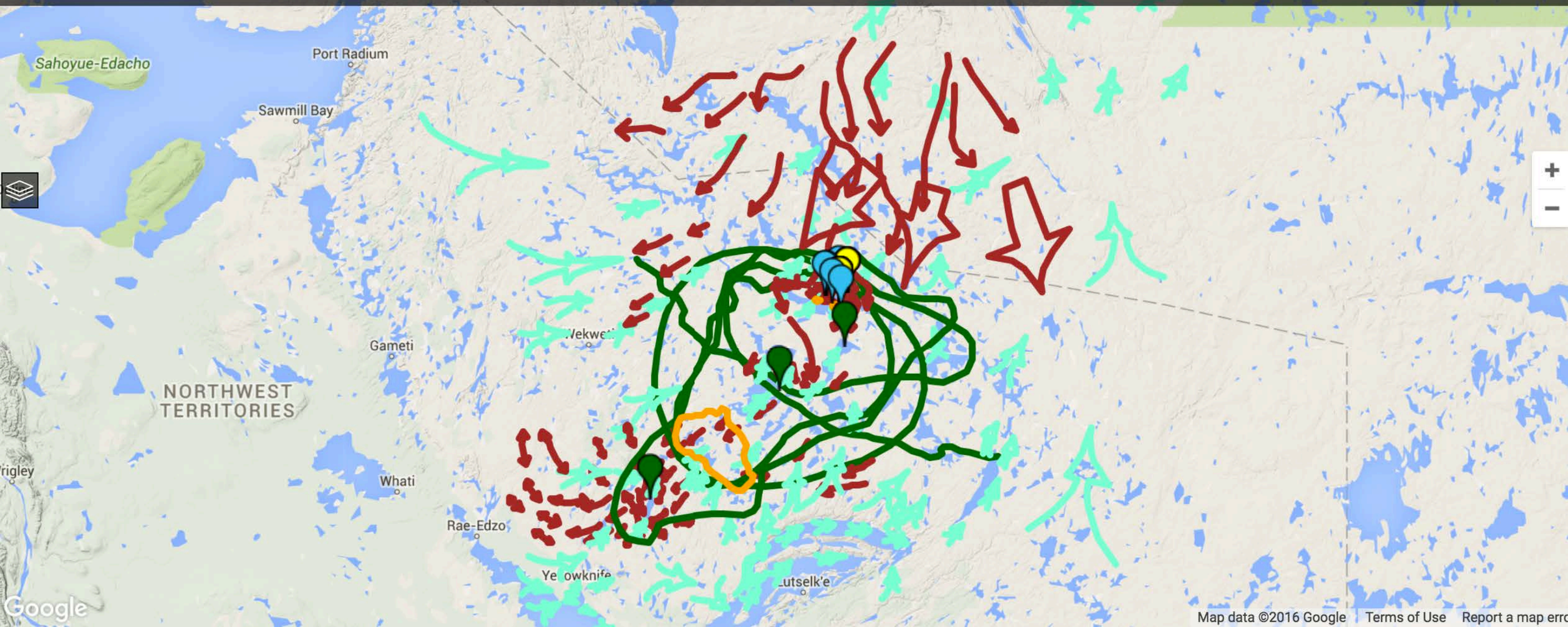

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Traditional Knowledge Website

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Appendix F

Summary of TK Panel Recommendations Relating to Caribou

DDMI TK Panel Recommendations and Response Tracking - Caribou						
NUMBER	REFERENCE	RECOMMENDATION	CONTEXT	TK VALUE/CONCEPT	DDMI RESPONSE	DDMI ACTION ITEMS
Assigned by DDMI unless otherwise indicated in report	*Be as specific as you think is appropriate; for example a section or page of the document, a recommendation #, general comment, etc.*	*Recommendations should be as specific as possible and explain an action that you believe is necessary; supporting information or rationale should be explained in the "context" column.*	*Context should contain all the information needed to understand the rationale for the accompanying recommendation.*	*Distinct values/concepts that are contained in Tr aditional Knowledge and can help to guide decision process*	*Responses should be as specific as possible, relating the issues raised in the "recommendation".*	*Actions should be as specific as possible, relating the issues raised in the "recommendation"; where possible, a timeframe may be included.*
1.1	A Way of Life, 25 Oct 2012, pg. 19	During July/August, a regular training session should be planned for Diavik staff in ways of properly respecting caribou and other animals	Cross-cultural learning is important when there are two ways of knowing wildlife. Scientists and Environment staff have a different way of doing work and understanding wildlife compared to that of TK holders. Respect for wildlife by TK holders means following the traditional laws that govern the relationship between humans and individual species. A successful monitoring program requires good communication and this can be challenging in a cross-cultural setting. Strong relationships and a special effort to understand the differences are key to success.	Respect Reciprocity Traditional Laws	Diavik staff and community assistants participating in the monitoring program undergo onsite and field training prior to initiation of the program. In addition standard operating procedures are revisited in the field throughout the process. In 2012 and 2013, Diavik invited community Elders and youth to participate in the monitoring program to observe staff performance and evaluate procedures. Minor changes were suggested and are currently being reviewed.	Involve community members in caribou monitoring and share knowledge of different practices relating to wildlife.
1.3	A Way of Life, 25 Oct 2012, pg. 19	The TK-Science camp at the mine site is an important place for developing skills and capacity in cross-cultural caribou monitoring	Elders feel that they can be creative in collaborating with Diavik in a cross-cultural setting that includes observations and knowledge exchanges at the TK/IQ Camp.	Reciprocity	Recommendation is outside the scope of the Caribou Behavioural Monitoring SoP. Such opportunities may be considered for future camps, depending upon the focus of the camp.	N/A
1.4	A Way of Life, 25 Oct 2012, pg. 19	The TK-Science camp (known as the CBM Camp) should be moved to a location north of Diavik on Lac du Sauvage. The setup must be in the Aboriginal way, not in a square, so that it's not threatening to the caribou.	In keeping with traditional laws governing relationship with caribou, the camp should be closer to the caribou migration route in order to develop skills and capacity in cross-cultural caribou monitoring. Aboriginal camps on the land have a specific way of being set up, and this should be respected for the set-up of the TK/IQ camp.	Traditional laws	The camp site has been established in consultation with community members under a land use permit with the WLWB and will not be relocated. The footprint of buildings and other infrastructure will not be changed significantly, in order to reduce further impacts on the environment.	N/A
1.5	A Way of Life, 25 Oct 2012, pg. 19	Monitoring results should be reported back to the communities on a consistent basis.	Participants expressed frustration at the lack of communication (and involvement) with community members relating to caribou monitoring at the mine site to date.	Reciprocity	Diavik prepares annual wildlife monitoring reports and an Environmental Agreement (EA) summary report. Additionally, EMAB produces an annual report that summarizes findings and recommendations. Wildlife monitoring updates are also included in annual presentations to communities. Diavik welcomes any further recommendations on how best to ensure that this information reaches individual community members.	Continue to distribute annual reports (which include executive summaries) to community organizations and visit communities as available. Investigate and request feedback on more appropriate methods for communication of monitoring programs & results.
1.6	A Way of Life, 25 Oct 2012, pg. 19	It will be valuable to "check nets" and synthesize what's already been done by Diavik to incorporate TK/IQ into its processes, and document/share lessons learned from these experiences in order to avoid repeating work already done.	Participants felt that they are often repeating themselves (to same and different companies) about many of these topics/concerns. A sign of being respected is 'being heard'; so to have to continually repeat themselves, TK holders feel disrespected. There is value in reviewing what Diavik has done to incorporate TK/IQ into their work.	Respect	Unclear if recommendation is addressed to the TK/IQ Panel or Diavik. Diavik is open to sharing information about current and upcoming TK/IQ plans and programs with the Panel for their review. Literature reviews have also been done to determine TK/IQ use for closure planning and vegetation.	Confirm if the recommendation is to Diavik or to TK Panel members/facilitators.
1.7	A Way of Life, 25 Oct 2012, pg. 20	Use pictures and/or other visual tools as part of the form for caribou behavioral scans.	Visual representation of the different behaviours of caribou is likely more accurate and would be helpful for people conducting the scans, especially new hires. People see things through a cultural lens and may interpret what is seen differently.	Reciprocity	An effort to take photos displaying various caribou behaviours was undertaken during the 2012 and 2013 monitoring seasons.	DDMI staff are evaluating opportunities to incorporate visual tools into the SoP.
1.8	A Way of Life, 25 Oct 2012, pg. 20	TK holders should be hired on a seasonal basis (i.e. spring through summer) to work with Diavik staff in caribou monitoring.	A TK holder on staff would be helpful in conducting cross-cultural training and monitoring considerations. Tradition requires TK holders to report their observations to each other and to discuss interpretation of those observations.	Reciprocity	Most caribou monitoring is completed from August - October. DDMI brings Elders to site to participate in these monitoring programs each year.	Investigate options for transitioning caribou behaviour monitoring to communities, while continuing to include Elders in current monitoring programs.
1.9	A Way of Life, 25 Oct 2012, pg. 20	Community meetings are a good way to gather more information on how caribou are doing	This can be a means of extending traditional monitoring practices to include scientists. Both parties are able to share their observations on caribou in a face-to-face meeting. Such an approach provides a good opportunity for community members to learn about what is happening at the mine in relation to caribou. And mine employees have a chance to learn what the communities are seeing in their areas.	Reciprocity	Recommendation is outside the scope of the Caribou Behavioural Monitoring SoP**.** Diavik hosts annual community meetings that include discussions on caribou and other wildlife. Diavik has also coordinated and participated in many wildlife forums to discuss caribou health and management with numerous stakeholders.	N/A

DDMI TK Panel Recommendations and Response Tracking - Caribou						
NUMBER	REFERENCE	RECOMMENDATION	CONTEXT	TK VALUE/CONCEPT	DDMI RESPONSE	DDMI ACTION ITEMS
1.10	A Way of Life, 25 Oct 2012, pg. 20	Caribou observation logs can also be used by community members when they are on the land	TK holders adapt and are willing to use new tools to carry out their stewardship responsibilities. Harvesters in the community may find the Diavik forms useful, and it may be helpful information for ENR.	Social	Recommendation is outside the scope of the Caribou Behavioural Monitoring SoP. Diavik can supply the field sheets to communities, if requested.	N/A
1.11	A Way of Life, 25 Oct 2012, pg. 20	Include more behaviors in the list for observation	Participants felt that there were other common behaviours not captured in the list. Community members are more familiar with different caribou behaviours and could help to expand the list and capture more detailed information. The intricate TK about caribou and caribou behaviour is required to inform good decisions. For example, caribou that are scared will often put their nose in the air, sometimes jump and then gallop fast; they are threatened because they do not know what is going on.	Reciprocity	Elders from the YKDFN, NSMA and Tlicho participated in caribou behavior surveys in the fall of 2012 and 2013. One additional behavior has been recommended so far: curious (approached).	Consider changes to SoP based on feedback from community members.
1.12	A Way of Life, 25 Oct 2012, pg. 20; Closure Reclamation & Landscape History Interim Report, 19-22 February 2013, pg.6	Include more categories for herd composition and behaviour; involve two individuals nominated by the TK Panel to assist with updating the SOP.	Community members see caribou herds differently than scientists. For example, there are leaders and followers within a herd. Participants felt this would be helpful information to record because the relationship between herd members is important to understand in making decisions to reduce impacts on caribou.	Reciprocity	Elders from the YKDFN, NSMA and Tlicho participated in caribou behavior surveys in the fall of 2012 and 2013. No additional categories have been recommended to date.	Plans to review suggestions and improve the information in these categories is being considered by Diavik.
1.13	A Way of Life, 25 Oct 2012, pg. 20	Utilize Aboriginal terms/concepts as identifiers	Participants expressed that there are Aboriginal terms that capture caribou activity or behaviour, perhaps more accurately than English terminology for them. Specific terms and concepts contain unique understandings important in governing the way we treat or 'manage' caribou. Specific terms and concepts contain unique understandings important in governing the way we treat or 'manage' caribou Addition of such terms to the data form may be helpful for community members participating in surveys.	Symbolism	This may be beneficial in the future, if caribou behavioural monitoring were to transition to communities.	N/A
1.14	A Way of Life, 25 Oct 2012, pg. 20	Injured animals should be sent to ENR for assessment	It would be helpful to have as much information as possible about injured or dead caribou, so that community members are made aware of the cause. TK holders may have other ideas about how to safeguard caribou in the future.	Stewardship Capturing knowledge	Recommendation is outside the scope of the Caribou Behavioural Monitoring SoP. Diavik has a specific policy and procedures in place for reporting and handling of injured or deceased wildlife, and this involves ENR.	N/A
1.15	A Way of Life, 25 Oct 2012, pg. 20	Scientists and TK holders analyze dead caribou together	It would be helpful to have as much information as possible about injured or dead caribou, so that community members are made aware of the cause, can share information and learn the way that government analyzes caribou carcasses. TK holders and scientists can exchange ideas on causes and ways to prevent future deaths.	Stewardship Recording knowledge Reciprocity	Recommendation is outside the scope of the Caribou Behavioural Monitoring SoP. Diavik has a specific policy and procedures in place for reporting and handling of injured or deceased wildlife. Diavik staff do not analyze dead caribou themselves; it is done by ENR.	N/A
1.16	A Way of Life, 25 Oct 2012, pg. 20-23	Four key areas for monitoring: 1. Behaviours 2. Herd composition 3. Caribou health 4. Environmental conditions	These were identified as the key concerns of community members that are all factors considered in the traditional monitoring system; they should be monitored by Diavik. Indicators or signs of herd condition were identified within each of these areas.	Stewardship	Many of the indicators recommended that relate to herd composition, health and environment are more appropriate to be studied by government at a regional level. Behaviours and local conditions are included in the current SoP.	N/A
4.1.1	Checking Nets, 23-25 Oct 2012, pg.8; Closure/Reclamation and Landscape History Interim Report, 23-25 October 2012, pg.8	The TK/IQ Panel should develop a report that more fully represents our knowledge and practice for maintaining the well-being of the caribou. TK assumes that all who live on the land of the caribou have stewardship responsibilities and must take these responsibilities seriously.	Many planning and monitoring gaps exist in relation to caribou and Diavik that have yet to be addressed, such as: Aboriginal monitoring approach (harvest camp), stewardship (traditional caribou laws), movement & cumulative impacts (monitor migration with youth), behaviour and herd composition (response to environmental influences, not just to mining). Preference is to monitor the herds when they are moving, north of Diavik.	Stewardship	Recommendation is to the TK/IQ Panel, however Diavik does not view this as within the mandate of the Panel. The Panel could recommend considerations for planning and observing caribou well-being in relation to the development of closure plans & post-closure monitoring programs.	A future Panel session to discuss closure monitoring is expected and caribou will be a part of that discussion.

DDMI TK Panel Recommendations and Response Tracking - Caribou						
NUMBER	REFERENCE	RECOMMENDATION	CONTEXT	TK VALUE/CONCEPT	DDMI RESPONSE	DDMI ACTION ITEMS
7.3	Re-vegetation Report, TK Panel Session #7, 14-18 August 2014	Use traditional techniques (e.g. flags, trees) to keep caribou away from areas that are unsafe (both near and far from site).	Caribou will find their old migration routes, but they also make their own trails that change over time. Some participants recognized that it is important to try to encourage caribou away from harmful areas far before they reach the mine site/East Island. Others felt that it would be impossible to prevent animals from coming to the mine site area. Consideration for guiding caribou on the mainland or around the island is a possible topic for future discussions.	Stewardship	DDMI proposes to hold a TK Panel session in the spring 2016 to discuss wildlife monitoring and management at closure. Further discussions to advance this concept would be well suited to this meeting.	Confirm TK Panel support for a 2016 spring session on wildlife monitoring and management at closure. If supported, DDMI to plan session for April/May 2016.
7.5	Re-vegetation Report, TK Panel Session #7, 14-18 August 2014	Create safe passage for caribou over the rock pile and through the site following their old migration routes on the north and south east sides (refer to map developed during session).	Panel members felt that it was not necessary to plan too much for the animals safe passage, as caribou will ultimately go where they want and will find the ramp, road or easy way. Preference was to align the path with the old migration route and to keep the slope similar to that of the test pile - as natural as possible. There are some big rocks at the bottom of the rock pile that would need to be covered. It was seen as important to think about the slope in the winter too - how wind will deposit snow - not just when it is snow free. The berms on top of the rock pile were viewed as a barrier to caribou movement, so it would be preferred to remove them and also to remove the berm around the top of the pile.	Stewardship Seasonality	This is very similar feedback to what community members said at a 2009 workshop relating to caribou at closure. Current closure plans, most notably for the rock pile, generally support this recommendation and the underlying reasons for the recommendation.	DDMI to consider design features that support this recommendation during the next major update to the ICRP (2016).
7.8	Re-vegetation Report, TK Panel Session #7, 14-18 August 2014	Allow more time for the TK Panel to discuss options for keeping animals away from certain areas (e.g. fencing).	Inuksuit are used to mark caribou crossings (nalluit) in Inuit culture. Other cultures use different techniques as well - e.g. flags, trees. More discussion on traditional and modern methods that can be used to prevent or deter animal presence in certain areas of concern may be useful. For example, some Panel members felt that a fence would be beneficial, while others felt it may be harmful and hard to maintain over time.	Stewardship Recording knowledge	DDMI proposes to hold a TK Panel session in the spring 2016 to discuss wildlife monitoring and management at closure. Further discussions to advance this concept would be well suited to this meeting.	Confirm TK Panel support for a 2016 spring session on wildlife monitoring and management at closure. If supported, DDMI to plan session for April/May 2016.
2.2	Renewing Our Landscape, 7 December 2012, pg. 22	Do not allow water to pool on top of the rock pile	Once a small pool of water forms, it gets bigger and becomes a lake that attracts animals. Animals then start to use it. Because the Panel is concerned with the quality of water within or flowing from the pile, there is concern for the health of caribou and other wildlife.	Stewardship	Diavik is not planning to have a water pond on top of the rock pile at closure.	N/A
6.1	Processed Kimberlite Containment Interim Report, 24-28 October 2013, pg. 5	Cover PKC area with a combination of natural sand and soil to ensure that the PKC is not over-heating the area (and melting permafrost) and to support natural re-vegetation	Concern was expressed that the dark colour of both the coarse PK and the liner would attract more sun (heat) that would result in permafrost melt. There was also a desire to see the area revegetated as Panel members expect that caribou and other wildlife will attempt to access the area after closure.	Stewardship Respect	The revised closure plan discussed in the October 2013 TK Panel session was approved by the WLWB in May 2014. The current plan includes a rock cover that would be lighter in colour and serve the same purpose as the sand and soil cover proposed by the TK/IQ Panel. The rock cover required to contain the Processed Kimberlite and protect it against wind & water could limit opportunities for revegetation.	Determine relative importance of overall function compared to specific material use with communities.
8.27	Reefs & Monitoring Water Report, TK Panel Session #8, 2-4 December 2015	Break-up the 1 km cliff on pit A418 with slopes (to make it safe for caribou).	There was a concern that a cliff feature at the edge of a lake could result in caribou or other animals being injured or killed, especially if it was used by predators as a hunting technique. Additionally, the length of the existing cliff would mean that caribou would have to swim up to 1 km to get out of the water. As such, it was felt that adding slopes at regular intervals would be helpful for animals to get in/out of the water safely.	Stewardship Experiential learning Sharing knowledge	Diavik plans to accommodate this request when finalizing closure designs for the A418 pit. A visit to this area is planned for May 2016, during TK Panel Session 9, and it would be helpful to have the TK Panel confirm that this recommendation still holds after seeing the area with their own eyes.	Plan to visit the pit shorelines during the May 2016 TK Panel meeting at the Diavik site and determine if the TK Panel reconfirms this recommendation.
8.28	Reefs & Monitoring Water Report, TK Panel Session #8, 2-4 December 2015	Leave current roads into the pits (e.g. A154).	Panel members found it acceptable to leave the ramps (that are currently used for vehicles to enter the pits) in place at closure, as they could provide safe access for wildlife into and out of the lake.	Stewardship	This recommendation aligns with Diavik's current closure plans.	N/A
4.1.4	Checking Nets, 23-25 October 2012, pg.20	Women to have opportunities to participate in TK/IQ Panel – especially for discussions on caribou and vegetation.	Women have specific roles in Aboriginal communities and the knowledge they can contribute is different from that of men. There needs to be respect for the distinct knowledge of women, as Elder women have special gifts and understandings that are important for carrying out stewardship responsibilities.	Respect Recording knowledge	Recommendation is to the TK/IQ Panel or their community organizations. DDMI does not select Panel participants but could request community organizations to include women participants, as recommended by the Panel.	A request to add women participants for the August 2014 re-vegetation Panel session was sent to communities, as this had been suggested by the Panel in the past.

Appendix G

Traditional Knowledge on Caribou: 1990s to Present (Presentation)

Presented to the TK Panel
TK Panel Session #9
May 13, 2016

Traditional Knowledge Insights about Caribou in the Lac de Gras Region

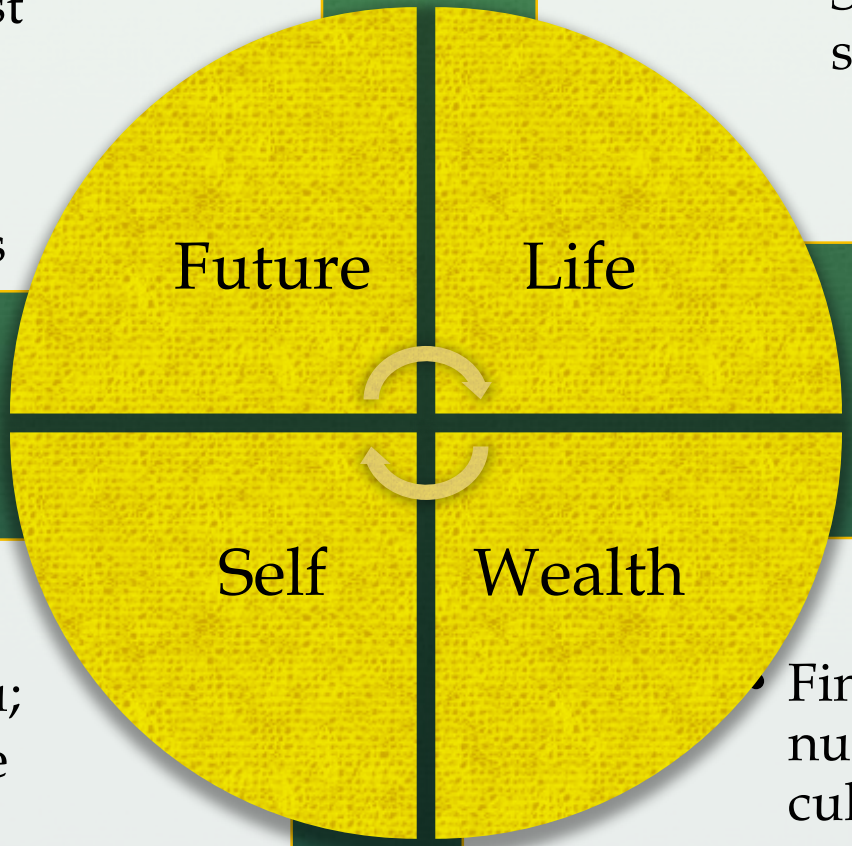
Since the 1990s …

- Caribou people from both NU and NWT say the same things . . . and they are the same over time
- Caribou people have always known the places important to caribou (crossings, calving grounds, land bridges)
- Caribou people forecasted changes in caribou and feel partially responsible for these changes
- Caribou people feel like their relationship with caribou has changed and needs to be repaired

Caribou are . . .

- People must safeguard caribou for future generations

- Subsistence and sustenance



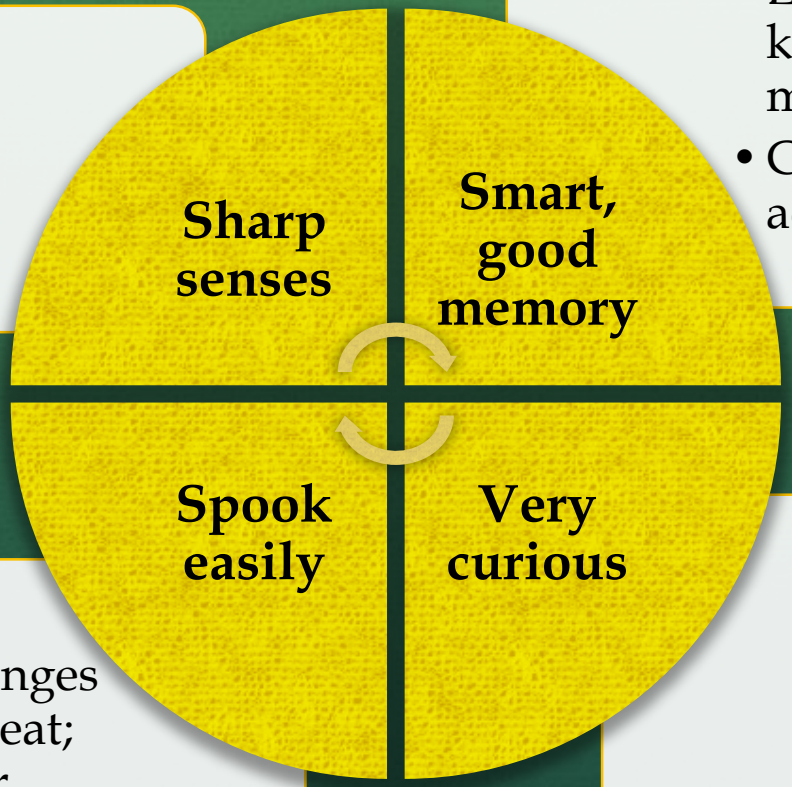
People are caribou; caribou are people

- Financial, material, nutritional, spiritual, cultural

We hear that . . .

- People and animals could speak the same language
- Caribou are a sacred animal that we all depend on
- Every human has a bit of *vadzaih* heart

Traditional Knowledge of Caribou . . .



- Sensitive to noise, dust, pollution, contaminants

- Learn, recall and know where to migrate and calve
- Can adapt/have adapted

- Stress changes taste of meat; behaviour

- Attracted to humans (relatives coming to visit)

Roads

Fragment habitat	Avoid if busy	Barriers to migration
Loss of habitat	Caribou won't cross steep snow banks	Create 'easy' walking
Allow good look-outs for predators	Provide escape from insects (wind)	Behaviour depends on time of year

Roads

No matter what you do, caribou will be affected by these mines and roads. The only way to not affect the caribou is to have no mines and roads. If there is a mine, there will be roads. And if you have a road, there will be trucks on it. If they put it through, you can't stop everything for the caribou. But maybe that is what the caribou need. (Pierre Catholique of Łutsel K'e in Parlee et al.2005: 35)

Now that there are mines with roads and high snow drifts on the sides, the caribou won't cross and their migration route is disrupted. The old people said if you pile up snow into drifts, the caribou would not cross them. They just move alongside of it. This is what is happening with the winter roads. They don't teach kids about this anymore. The white man does not know this. The way the caribou migrate has been disrupted. The roads bisect the migration routes and disrupt the natural behaviour of the caribou. (Liza Enzoe of Łutsël K'e in Kendrick and Lyver 2005: 183)

Vehicles and Aircraft

Run, gallop	Injuries, death	Stressed out
Isolation, dispersion, small groups	Heart pumps; panic	The meat changes
Collisions	Hunter access	Noise pollution, contaminants

Vehicles and Aircraft

- In a few years, the caribou will change their route again. They will go a different way; they will be disturbed by the winter road, planes, and blasting. You will see [these changes] in three to five years from now."(Louis Abel of Łutsel K'e in Parlee et al. 2005: 35).

- Although we have all seen ekwò in association with the ice road, the do not like to cross roads unless they are in the migration mode. They become very skittish when trying to cross roads, as they can smell the human scent. When they are not in migration mode and simply foraging during the winter, if the ekwò sniff our scent, they will turn back. (Romie Wetrade of Gamètì in Legat and Tłı̨chǫ 2001: 13)

Important Places

Water crossings

Land crossings (*tataa*)

Calving grounds (hospital, nest)

Post-calving

Key habitat / feeding

Important Places

- This crossing of the Coppermine ['The Narrows/Degha?à(?)'], by the way, is an important spot in the history of the Dog-Ribs and Yellow Knives. It has always been a favourite swimming-place for the caribou, and many a struggle took place for the possession of this hunting-ground in the old days when there was continual warfare between the two tribes. At present day it is a breach of etiquette for any Indians to camp here, as it is supposed that if the caribou are once headed back at this point they will not come south of Mackay Lake. This rule had evidently been broken lately, as we found signs of a recent encampment, and King considered that this amply accounted for our not finding the caribou before we reached the Lac du Rocher. -- Pike, Warburton The Barren Ground of Northern Canada, Macmillan and Co., London, 1892: 67

Important Places

- Somewhere on Egati [Ek'ati] is another camp that is like a small village; people returned to this camp every year to melt [caribou] fat; there are burials at this camp too. (Crapeau et al. Interview, Aug. 12, 1997 in YKDFN).

- Nàk'ooʔaa (the Narrows) between Ek'ati and [Nàk'ooʔaatı] Lac du Sauvage near here is considered to be an important area for the wildlife. We have to document that so that mines will not be developed near there. And along that area where there is a long stretch of sand (Misery Point), where there are grave sites, is the long stretch of esker that the wildlife use during migration season. Those are the areas that the mining companies want us to research and document so that those areas will not be used. They said, they don't want to use all the land, but they want this kind of information documented for future mine development. (Betsina et al. Interview, Aug. 11, 1997 in YKDFN).

Human Development

Avoid	No Influence	Attract
• migration detour • learn for ‘next time’	• migration instinct is strong • follow leaders	• predator refuge • shade • easy walking • security

Human Development

- The animals, after they come back from the calving ground area. Coming back this way [south], they are not rushing back into the tree line, while on the north side of Ek'atì [Lac de Gras]. But they still hang around over there, because they know that everything here is in front of them, it's really noise and they can't eat. So they hang around coming back slowly. With their babies, small ones, then they start moving away from these mines and from these [outfitter] hunting camps. They know that people are ready for them to shoot. The [caribou] have to watch all those things. But they don't rush themselves because they just walk slowly and eat, stop, eat, stop, eat, stop all the way from the Barrenlands. I don't know how many times it goes like that. That's when they start to get fat, in August, September. (Joseph Judas, February 6th, 2013 in TRI 2016: 36)

Human Development

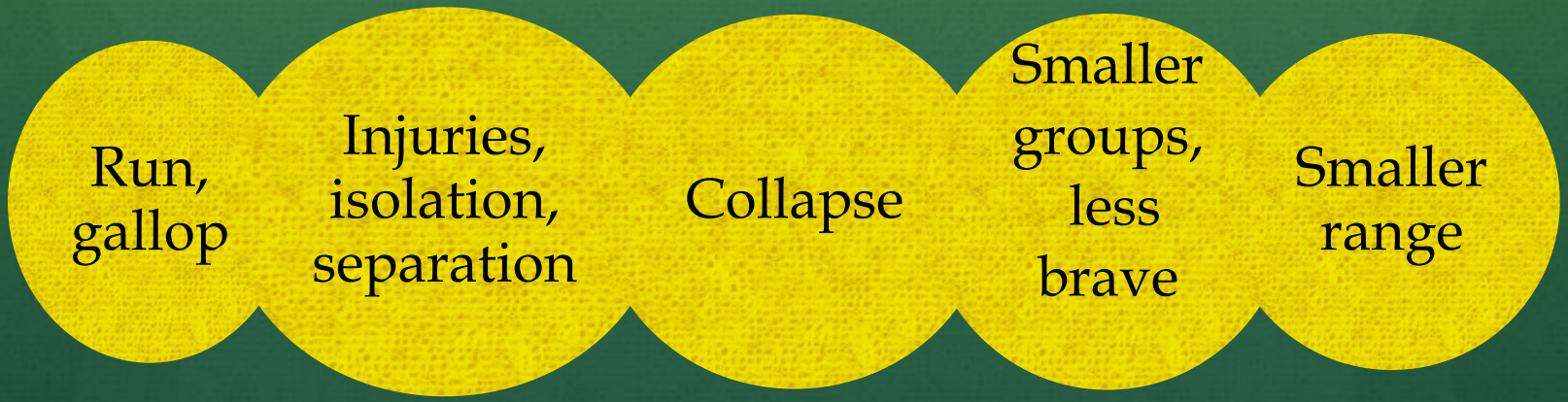
- There's roads and mines and all activities where all the caribou pass, I mean, that block the caribou…elders said that when something like that happens, caribou don't go there again. (Harvester in Parlee and Furgal 2010: 37).
- The caribou used to migrate to our land. But now there are mines in the way of their major migration route. That's the reason why caribou mind-spirit is weak – it is too weak to come toward our land now. The caribou feel like there is something in their path, so they turn the other way. The smell of fumes and smoke can blow far on the barren ground, and the caribou can sense that (Caroline Beaulieu of Behchoko in Legat et al. 2008: 28).

Human Development (cont'd)

- These caribou are growing accustomed to mines like a landmark…now they are using them in their travels. (Anonymous in KHTO and Golder 2011)
- There were caribou around the tank farms. They were hanging around in the shade. They love it! Hiding from the big tanks and building, I was surprised. (Colin Adjun in KHTO and Golder 2011)
- With human activity, they sometimes change their migration routes. Lac de Gras, before the diamond rush, caribou used to migrate through there in great big herds…today it is totally different. Only a few in a group, not like hundreds. (Anonymous in KHTO and Golder 2011)

Regional / Range Level

Local Level: Disturbance Means Stress

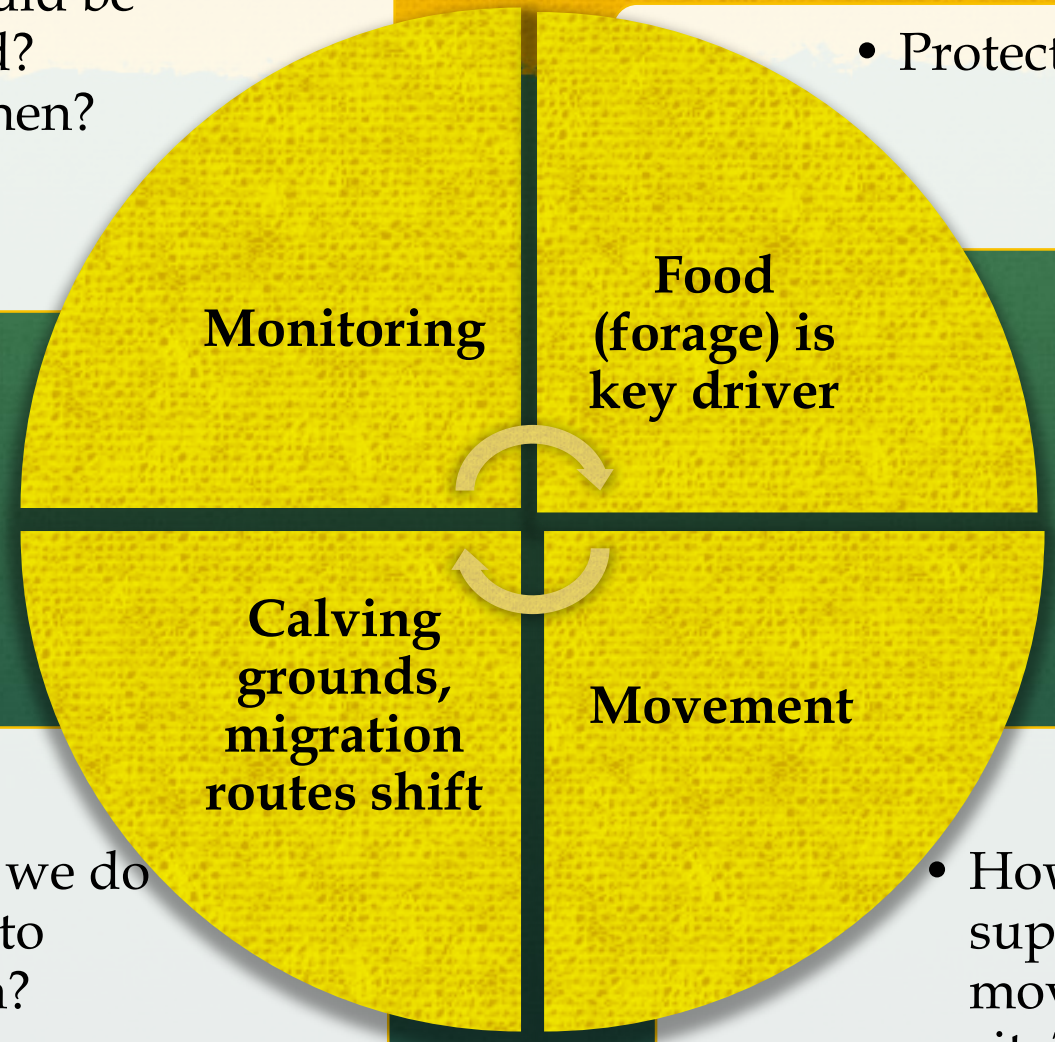


Cumulative Effects

Mining Closure

- What should be monitored? How? When?

- Protect key areas



- What can we do at Diavik to help them?

- How can we support safe movement through site?

Appendix H

Diavik Presentations: Closure Overview, Introduction to Session #9: Caribou, Response to Session #8 Recommendations, the NCRP Final Closure Plan and the Results of the PK Slimes Toxicity Study and PK Deposition Trial

Diavik Diamond Mines

Diavik Closure Planning Overview
TK/IQ Panel – May 2016

Closure Planning

Content
Closure Plan – How we got here
Session 8 Responses – Water Quality & Fish Habitat
Caribou – the focus for TK Panel Session 9

1998 Pre-feasibility

Closure Goals

- Land and water that is physically and chemically stable and safe for people, wildlife and aquatic life
- Land and water that allows for traditional use
- Final landscape guided by Traditional Knowledge
- Final landscape guided by pre-development conditions
- Final landscape that is neutral to wildlife – being neither a significant attractant nor deterrent relative to pre-development conditions
- Maximize northern business opportunities during operations and closure
- Develop northern capacities during operations and closure for the benefit of the north, post-closure
- Final site conditions that do not require a continuous presence of mine staff

Overview of Closure Plan by Area

North Country Rock Pile

PKC

North Inlet

Infrastructure

Open Pits & Underground

Response to Session 8 – Water Quality & Fish

Supported

- Maintain current TK camp site until at least 2018 (8.1)
- Ensure long term scientific monitoring of NCRP to determine if it remains frozen and stable (8.30)
- Do not breach dikes until the TK Panel is satisfied with the water quality through visual inspection and reviewing results from scientific analysis (8.9)
- Leave dikes as they are (i.e. do not modify the slope or current construction) (8.21)
- Vary depths of built reefs (8.22)
- Don't build, or minimize building reefs on previous lake bottom areas inside the dike area (i.e. protect undisturbed and naturally vegetated areas) (8.23)
- Ensure good fish habitat for rearing, feeding and resting on reefs inside dike (8.24)
- Provide opportunity for the TK Panel to view the present shoreline when snow-free to consider further recommendations (in spring) (8.26)
- Break-up the 1 km cliff on pit A418 with slopes (to make it safe for caribou) (8.27)

Response to Session 8 – Water Quality & Fish

Supported Cont'd

- Leave current roads into the pits (e.g. A154) (8.28)
- In future programs, document why certain fish are rejected by Elders (8.3)
- Water testing should be done by tasting fresh water and by boiling the water, letting it set overnight and drinking it the following day (observe scum and clarity) (8.4)
- Set fish nets on both sides of the island (north and south). (8.5)
- Consider additional water sampling locations from different areas. (8.8)
- Focus water quality monitoring on the NCRP. (8.10)
- Monitor fish spawning areas closely, especially in the SE part of island (i.e. area just south of the pits). (8.12)
- Monitor and test water in pits and around East Island regularly. (8.13)
- Test water (on East Island) scientifically and not by tasting. (8.15)
- Regularly measure heavy metals all around island. (8.16)
- Monitor water in late May and early June as these are critical times (i.e. melt). (8.17)
- Regularly measure water quality in all bays, drainage and run-off. (8.18)

Response to Session 8 – Water Quality & Fish

Supported Cont'd

- Annually check for algae growth around shorelines as too much can be an indicator that there is less oxygen for the fish. (8.19)
- Continue to provide the TK Panel with teaching and communication 'tools' (i.e. videos, books, photos), to share progress and findings on closure planning with communities. (8.31)
- Plan for climate change hundreds of years into the future. (8.32)
- Re-seed land and use dirt and safe sewage to facilitate re-growth. (8.33)

Response to Session 8 – Water Quality & Fish

Modify

- Consider options to donate camp facilities to people traveling to LdG after the mine closes (8.2)
  - DDMI prefers to close the camp, reclaim the land and relinquish the lease for liability reasons. DDMI would consider 'selling' or donating the camp equipment to community organizations or a coordinating body, pending legal review, for their own use.

- Monitor and filter two streams from the east and west sides of the PKC by Mother Nature through mosses, bogs; moss should be placed throughout the channel. In the short term, install an industrial filtering system. Monitor this water quality. (8.11)
  - DDMI agrees with the Panel that the distance PKC water flows before entering Lac de Gras will be an important consideration. However, options may be limited in some areas, particularly on the west side. Should site-specific treatment of PKC water be required, relevant options (both industrial and natural) to achieve the required performance would be evaluated.

Response to Session 8 – Water Quality & Fish

Modify Cont'd

- Leave the land between the pits and the dikes as it is for natural regrowth when flooding (8.20)
  - Engage other stakeholders to determine the preferred approach for re-vegetated areas inside the dikes prior to filling the open pits with water.

- Stock water in open pits with bugs to improve water quality (8.25) and Regularly stock on-island pond water with bugs to improve water quality (8.14).
  - Evaluate if it is possible to assist with the establishment of bugs on the bottom of the pond.

- Ensure two Elders and two youth from each group attend future camps and meetings. (8.6)
  - Evaluate camp accommodations and participant needs in advance of the 2018 AEMP TK Study and advise community organizations and the TK Panel on options for attendees.

- Sample fish and water from the Narrows (In both LdG and LdS) (8.7)
  - The current area identified for fishing in LDG includes the area of the lake below the Narrows. Any concerns or interest in sampling LDS in relation to the Jay Pipe should be directed to Ekati.

Response to Session 8 – Water Quality & Fish

Unsupported

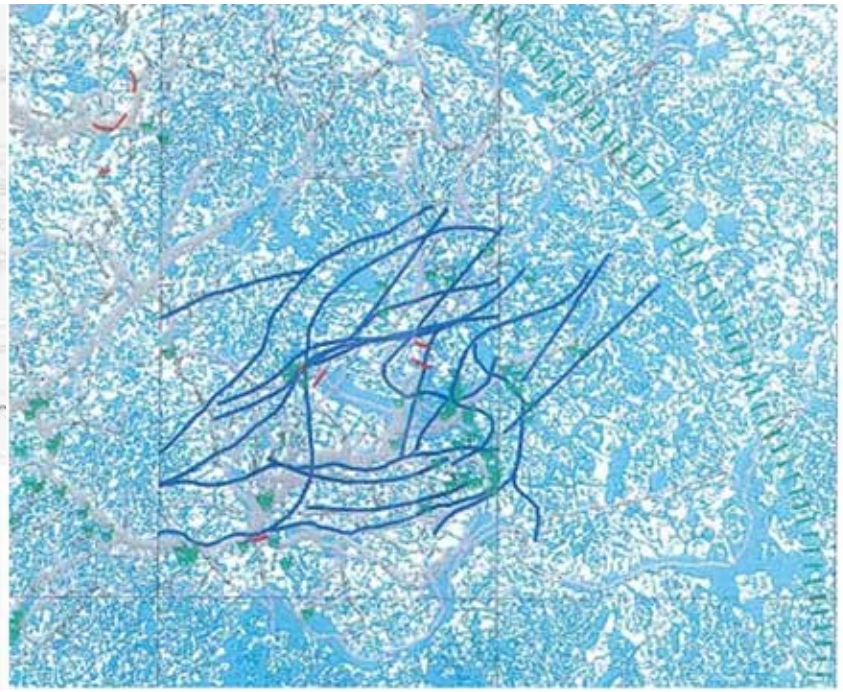
- Explore long term monitoring options including how to coordinate and administer an ongoing post-2030 program that continues to integrate TK and science and involves both Elders and youth trained in science. (Consider funding, and if some of the bond can be used) (8.29)
  - Diavik needs to plan for ultimate closure and relinquish ownership of the property back to the government. As such, any long-term monitoring plans past 2030 would need to be funded and coordinated by other parties.

Session 9: Caribou Management & Monitoring

- Regional vs Local Questions & Monitoring

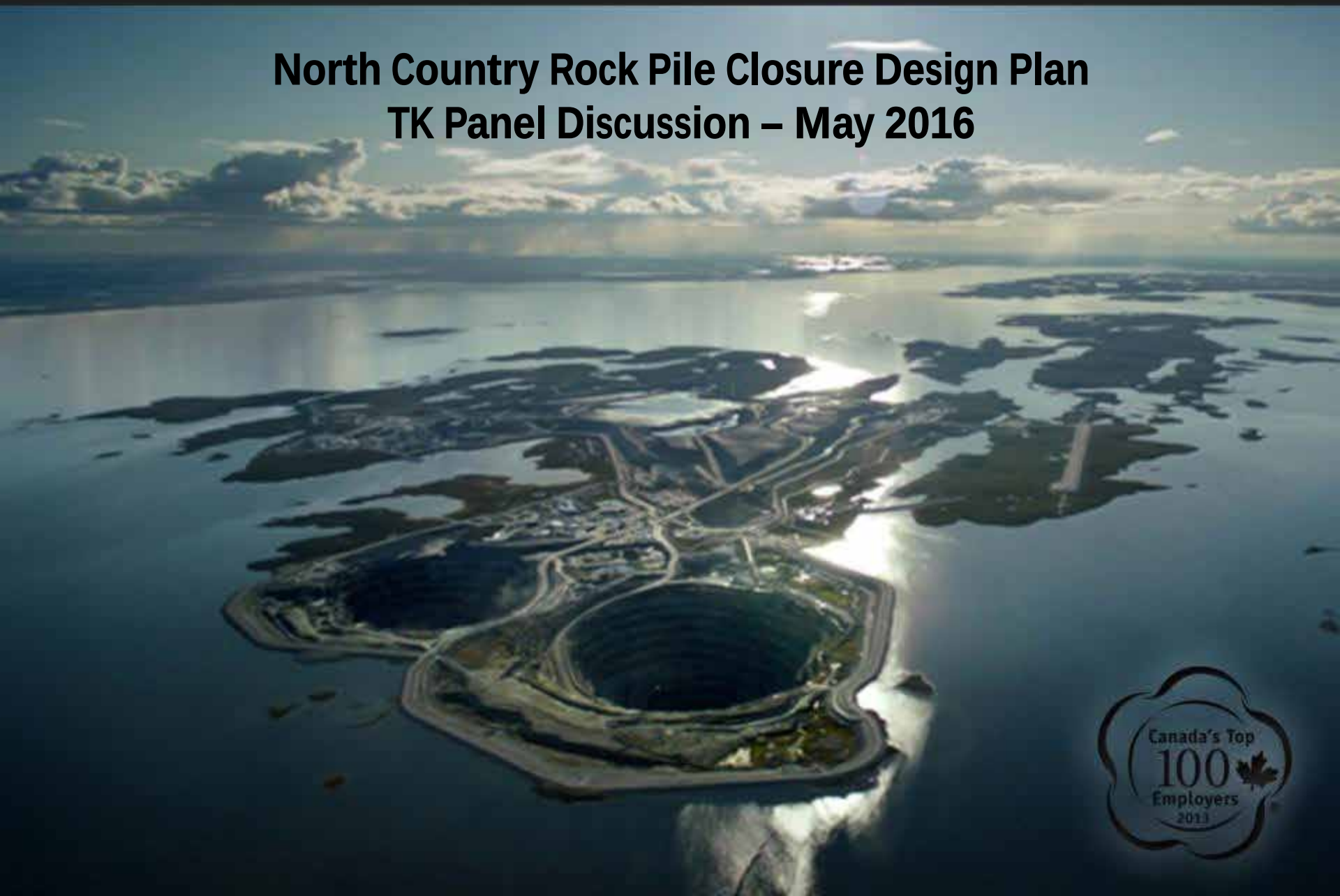
Session 9: Caribou Management & Monitoring

- How can we help caribou travel safely around the mine site after closure?
- How do we watch caribou to see if they are safe?



Diavik Diamond Mines

North Country Rock Pile Closure Design Plan
TK Panel Discussion – May 2016



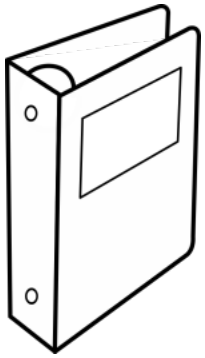
North Country Rock Pile (NCRP) – Closure Design

Content

- How does closure planning work?
- What is Progressive Reclamation?
- Closure Design Goals
- Closure Design Plan & Timeline
- You spoke, we listened – how your recommendations were included
- What will it look like at closure?
- What will be monitored once its closed?
- Key Questions for the Panel

How does closure planning work?

Initial Plan - 1999



Closure Guidelines & Site Plans

Interim Plan – v4, 2016

Current State of Closure Planning

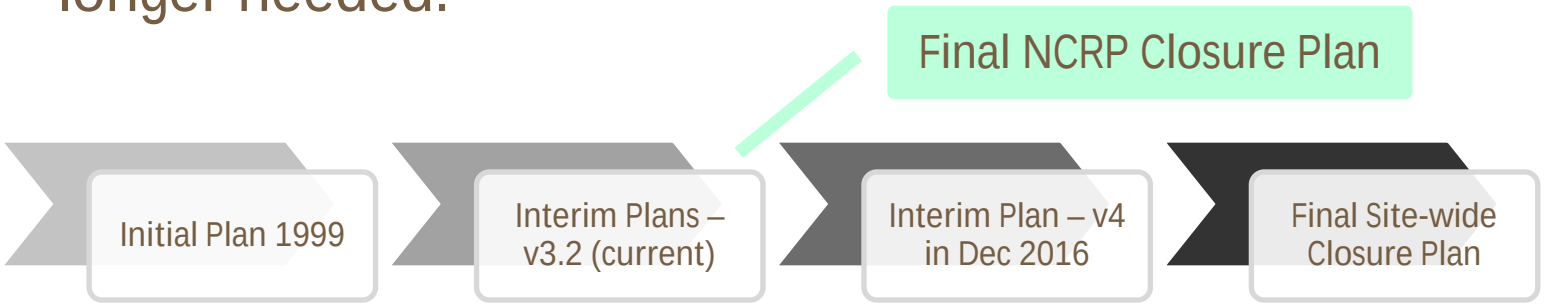
Final Plan - 2020

Plan for the End of the Mine

Mine construction… Mine operations… Mine closure.

Progressive Reclamation – what and why?

- **Progressive Reclamation** is the opportunity to 'close' and reclaim, or fix, specific areas of the mine that are no longer needed.

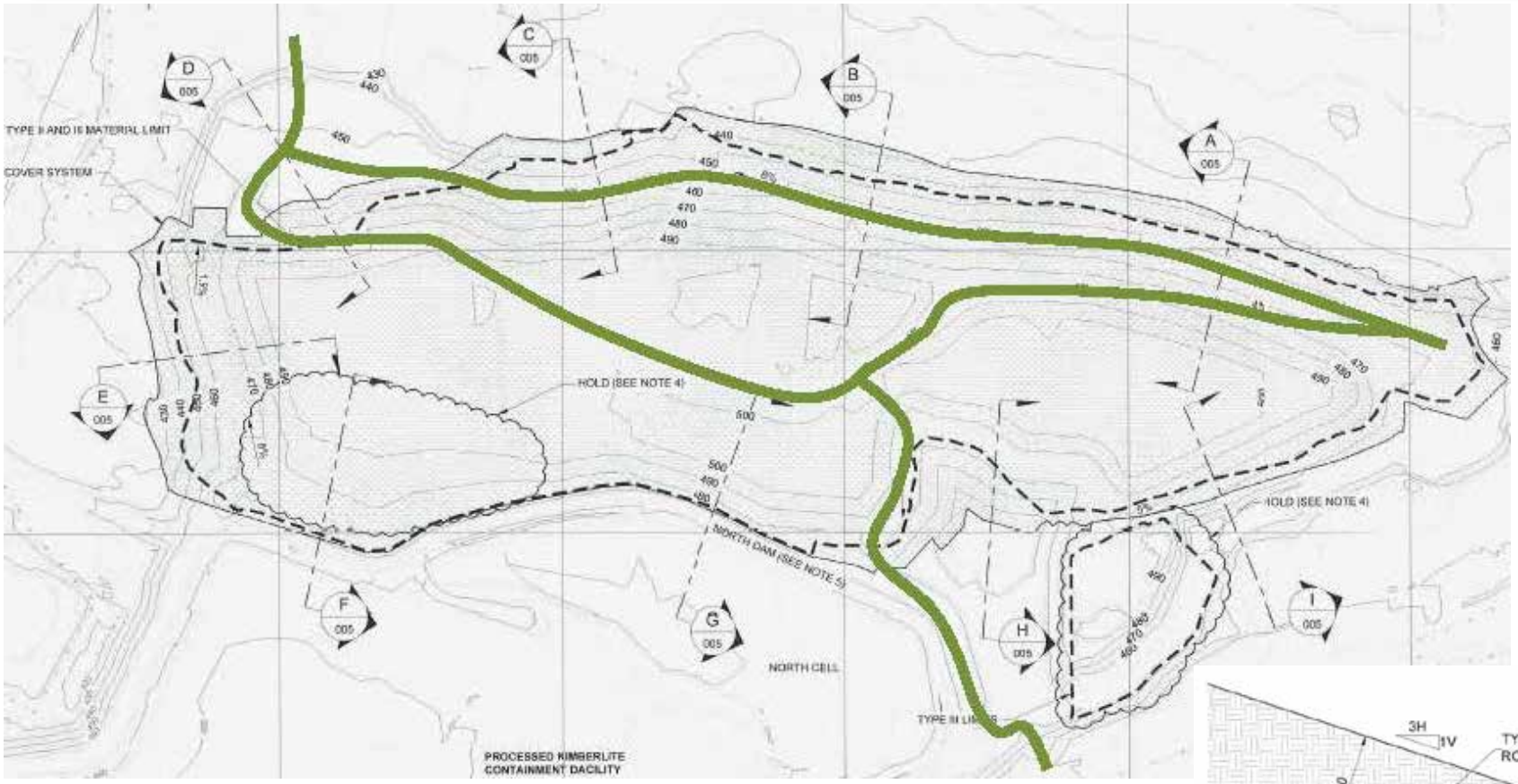


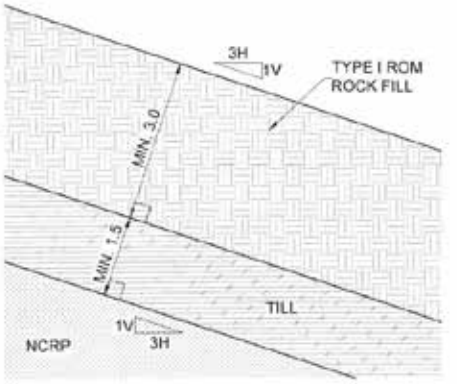
- **The Final Closure Plan for the North Country Rock Pile is being prepared in advance of the Final Closure Plan for the mine site, so that progressive reclamation of this structure can occur.**

Closure Planning Goals for the NCRP

TK Panel Goals	Technical Goals
Chemical stability & control of runoff water	Chemical stability
Safe use for wildlife	Physical stability
Minimize visual impact on the landscape	Future use & aesthetics (visual impact)

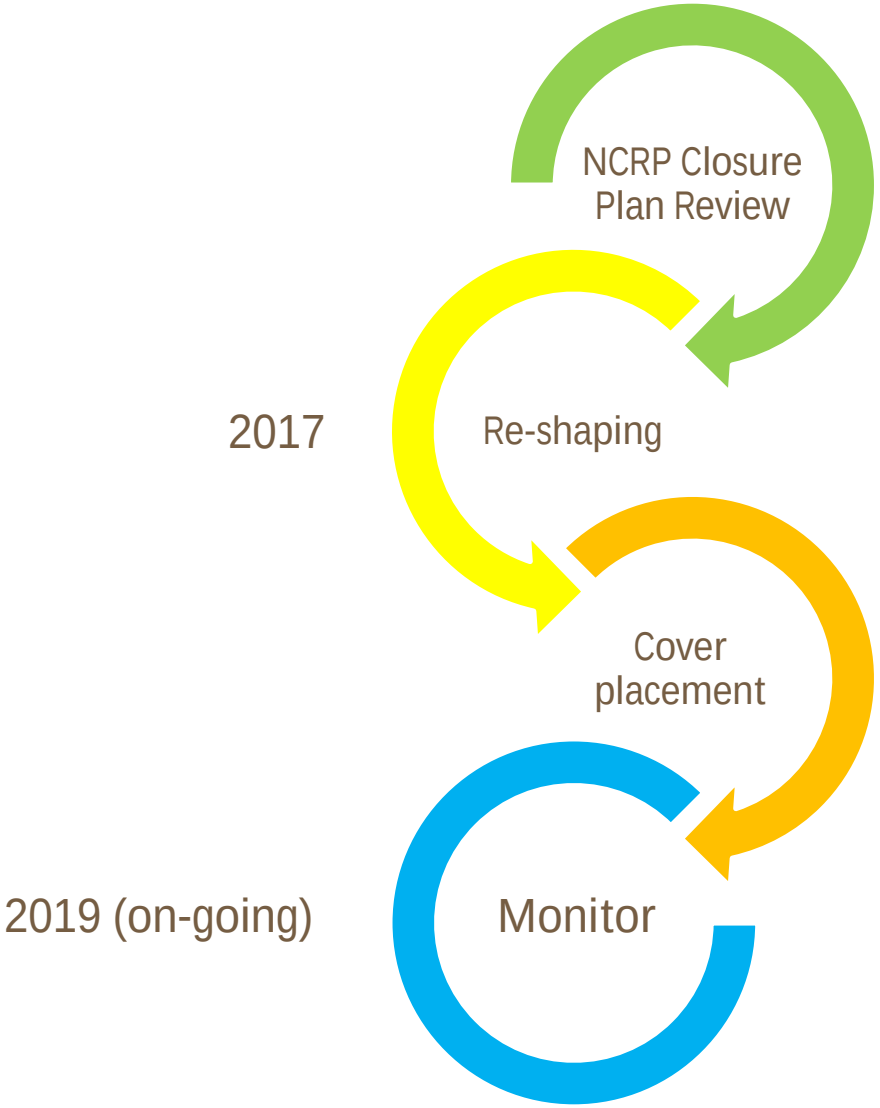
NCRP Closure: The Plan





SCALE 1:75 2 005 DETAIL - COVER SYSTEM

NCRP Closure Timeline



You spoke, we listened – TK Panel Recommendations

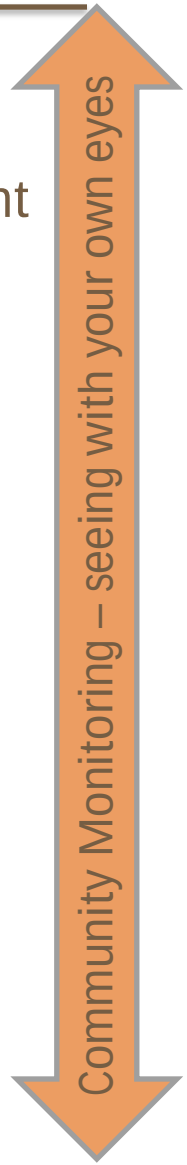
- Total of 15 recommendations from the Panel
- Of these:
  - 13 recommendations were supported ✓
  - 0 recommendations were modified
  - 2 recommendations could not be supported –

What will it look like at closure? NCRP

- Diavik Closure Visualization_May2016.pdf

What will be monitored after closure?

- *Geotechnical inspections (stability)*
  - geotechnical inspections including observations and measurement of settlement,
  - erosion, surface drainage and thermal condition
- *Runoff/Seepage Water Quality (chemistry)*
  - seepage quality and using a system similar to the Surveillance Network Program (SNP)
- *Dust and Dust Deposition*
  - TSP and deposition/quality measurements of any dust generated from the closed waste rock and till area
- *Wildlife*
  - wildlife use of the area



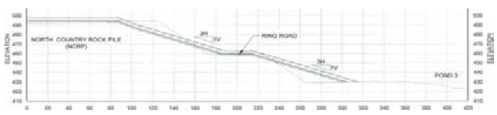
Questions for the TK Panel

1. Do you accept the responses to your recommendations as to what can and cannot be accommodated?
2. Do you support the north country rock pile closure plan?

TK Panel Recommendations for the NCRP

Recommendation	Actioned?	How Addressed or Why Can't it be Done?
Create safe passage for caribou over the rock pile and through the site following their old migration routes on the north and south east sides (refer to map developed during session).		A caribou trail has been planned to go up and over pile with 3 access areas that align with old migration routes on the north and south east sides of the island; the slope would be as natural as possible and similar to that of the test pile, with re-shaping work done on the pile in wildlife access areas.
Do not allow water to pool on top of the rock pile		Areas on the top surface of the pile are to be levelled out to minimize snow accumulation (and associated water infiltration) into the pile; berms around the outside of the pile would be removed; the top and slopes of the pile would be graded to prevent a significant volume of standing water.
Have a 'moat' around the rock pile as a way of being able to contain and monitor the water that is coming out of the pile.		A series of engineered ponds (Ponds 1, 2 and 3) currently surround the NCRP. They will remain as NCRP collection ponds until it can be confirmed that runoff/ seepage is of adequate quality to be released to Lac de Gras. At this time, the idea would be to construct outlets in the ponds so that they would still function as settling ponds but then would naturally drain back to Lac de Gras.
Some revegetation should be planned for the rock pile. Consider use of good, black soil from the tundra or other eskers in the area. Plant native shrubs such as dwarf birch and willow in the soil near the bottom and allow the remainder to revegetate naturally.		It is not practical to simulate the natural environment on the NCRP. The final design would use available mine materials and reduce further impacts to the environment during reclamation. Similar materials and methods used to cover the test pile will be utilized for the NCRP and Panel members seem satisfied with the look of the test pile.
Simulate an esker when considering the final shape of the rock pile.		With the exception of the PKC tie-in zone, all of the slopes planned for the NCRP at closure are 3H:1V, similar to the test pile. In keeping with Panel recommendations, the north side of the pile will be pushed out past the current airport road and will have some bench areas along the slope that would serve to simulate varying levels of steepness and reduce the effort required for an animal to climb the slope. The berms on top of the NCRP will be removed, as will those around the edge of the pile, so that the edges appear to be rounded with a relatively flat top.

Recommendation	Actioned?	How Addressed or Why Can't it be Done?
Safe wildlife access needs to be considered for all seasons when designing the final shape of the rock pile. There needs to be soft material in areas where caribou will be; consider the use of PK material for animal paths.		Access locations were aligned with old migration routes on the north and south east sides of the island, and the slopes of the pile are as natural as possible, and similar to that of the test pile. The placement and leveling of the cover will largely remove the boulder hazards at the bottom of the pile, and the designated pathway areas would be free of obstacles to allow for safe caribou movement. Panel members have stated that the test pile surface is good for caribou to walk on safely and the need for placement of specific materials on the pathways may not be necessary or suitable. Therefore, placement of PK or other materials on the pathways has not been confirmed.
Channel water flow to prevent contaminants from reaching Lac de Gras.		A series of engineered ponds (Ponds 1, 2 and 3) currently surround the NCRP. They will remain as NCRP collection ponds until it can be confirmed that runoff/ seepage is of adequate quality to be released to Lac de Gras. At this time, the idea would be to construct outlets in the ponds so that they would still function as settling ponds but then would naturally drain back to Lac de Gras. Water quality criteria will be established for runoff/seepage.
Preference is to lower the height of the rock pile. However, if that is not possible, keep the rock pile height as low as possible while ensuring that contaminants within the Type II and III rock areas are contained.		DDMI has been undertaking research on the chemical, physical, biological and thermal aspects of waste rock piles with a team of university researchers since 2004. The construction of a thermal cover is a recognized best practice to minimize the generation of poor quality seepage water from waste rock in permafrost environments. Only areas that contain Type II/III rock will be capped with additional materials.
Cap the rock pile with the best materials for biodiversity based on TK and science, using nearby hills as a reference.		It is not practical to simulate the natural environment on the NCRP. The final design would use available mine materials and reduce further impacts to the environment during reclamation. Similar materials and methods used to cover the test pile will be utilized for the NCRP and Panel members seem satisfied with the look of the test pile.
Create slopes on the rock pile similar to that on the test pile to support safe travel for animals.		The test pile structure closely resembles the slope ratio (3H:1V) and cover material that will encapsulate the NCRP at closure. The north slope of the NCRP will be re-sloped to 3H:1V to enable placement of a closure cover.

Recommendation	Actioned?	How Addressed or Why Can't it be Done?
Ensure long term scientific monitoring of NCRP to determine if it remains frozen and stable.	✓	Planned monitoring for the NCRP includes: geotechnical inspections (observations and measurement of settlement, erosion, surface drainage and thermal condition), seepage quality using a system similar to the Surveillance Network Program (SNP), dust deposition measurements from the closed waste rock and till area and wildlife use of the area.
Leave some areas steep to encourage snow accumulation for wolverine and other denning wildlife (e.g. wolf, bear, fox, ground squirrel, etc.)	✓	The slope between the NCRP and PKC will be designed steeper than other areas of the pile (see below). All other slopes will be 'stepped' at a 3H:1V slope (similar to the test pile) and should still provide some denning opportunities. 
Create barriers and other means between the rock pile and PKC to discourage animals from going into the PKC area	✓	The final slope between the NCRP and the PKC surface is designed to remain at a steeper 1.5H:1H ratio, in order to deter animal movement into the PKC area. 
Focus water quality monitoring on the NCRP	✓	The potential for poor quality seepage/ runoff is the potential effect of greatest concern for NCRP Closure. Construction of the closure cover is expected to mitigate this risk and research has shown that seepage from drainage basins with an active zone completely within a 3 m cover of Type I waste rock would have a lower concentration of metals and circum-neutral pH, compared to an active zone in uncovered Type III waste rock. Estimates of runoff/seepage quality have been compared against closure objectives and criteria for wildlife, human health and aquatic life in Lac de Gras. Estimated post-closure runoff/ seepage water quality is expected to be of acceptable quality, and a monitoring program would be conducted to test against criteria.
Plan for climate change hundreds of years into the future	✓	Under the predicted and accepted climate change scenarios, models show that the active zone in a covered pile would be limited to 3.9 m (11.7 ft) of depth, which means that freeze/thaw processes would stay within the cover zone and the Type III material below this zone would remain frozen.

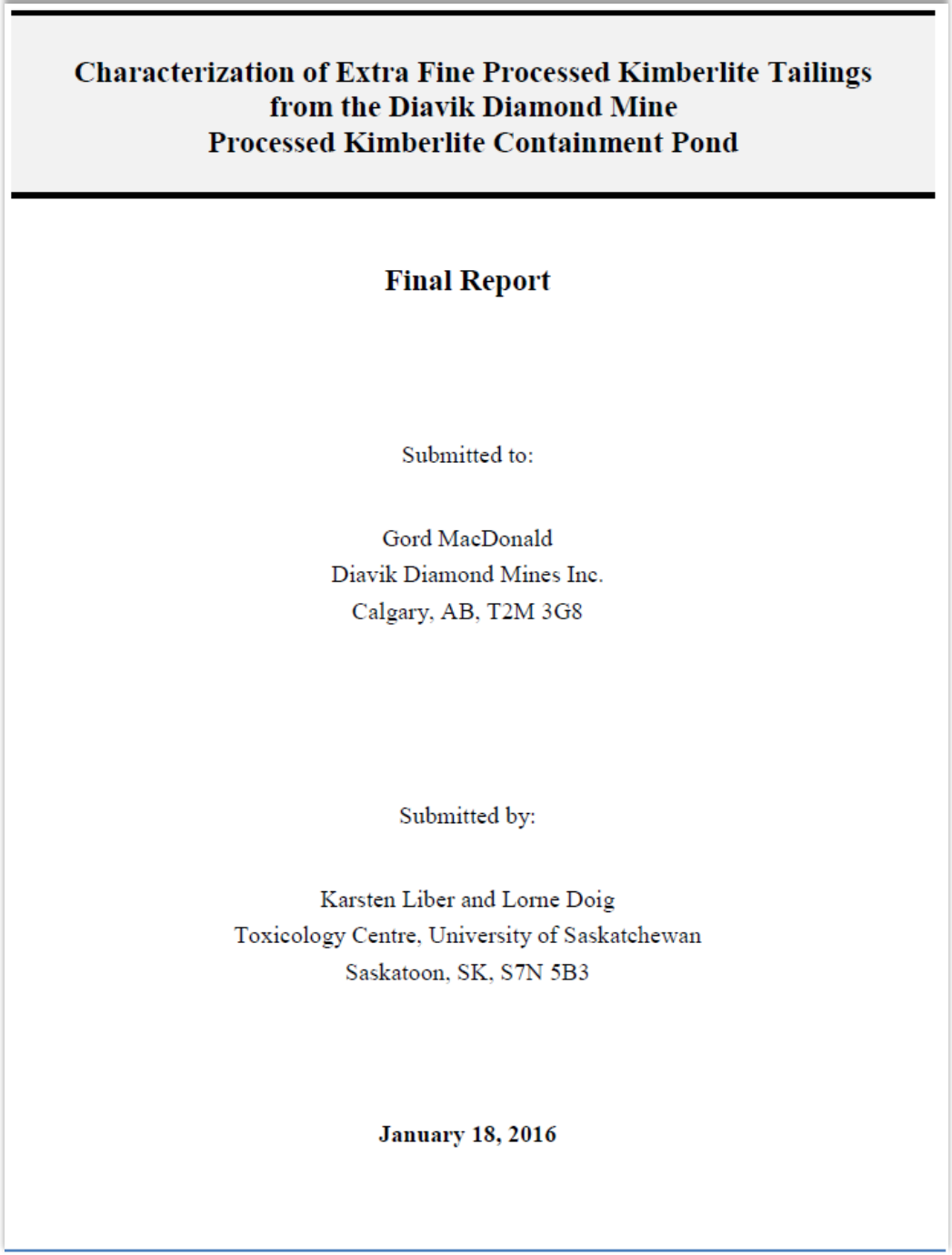
Characterization of Extra-Fine Processed Kimberlite

TK Panel May 15, 2016

Document Control #:
Template #: DCON-029-1010 R7

TK Panel Recommendation

Upon discussion, Panel members stated that should the slimes prove to be non-toxic, they would be more willing to assess on-site containment options for this material. TK holders need to see for themselves that something is not harmful to the environment. Participants would want to be confident in the results of the scientific testing.	Stewardship	Should the material prove to be non-toxic to people and wildlife, Diavik plans to leave the slimes on site and determine the preferred method for containment that allows for safe use or passage of wildlife in the PKC area.	Diavik plans to begin a toxicological study on PK material in 2015.



Characterization of Extra Fine Processed Kimberlite Tailings from the Diavik Diamond Mine Processed Kimberlite Containment Pond

Final Report

Submitted to:

Gord MacDonald
Diavik Diamond Mines Inc.
Calgary, AB, T2M 3G8

Submitted by:

Karsten Liber and Lorne Doig
Toxicology Centre, University of Saskatchewan
Saskatoon, SK, S7N 5B3

January 18, 2016

DDMI asked the Toxicology Center at the University of Saskatoon to propose a toxicological testing program.

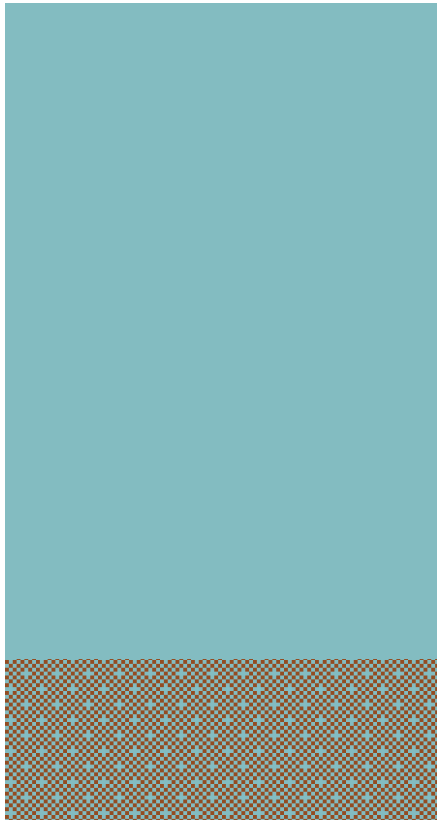
DDMI accepted their proposal and provided research funding of $116,000

The report was completed January 2016 and has been distributed for review/comment.

DIAVIK DIAMOND MINES INC.

What was tested

15 L



PKC Pond Water – (“Containment Pond”)

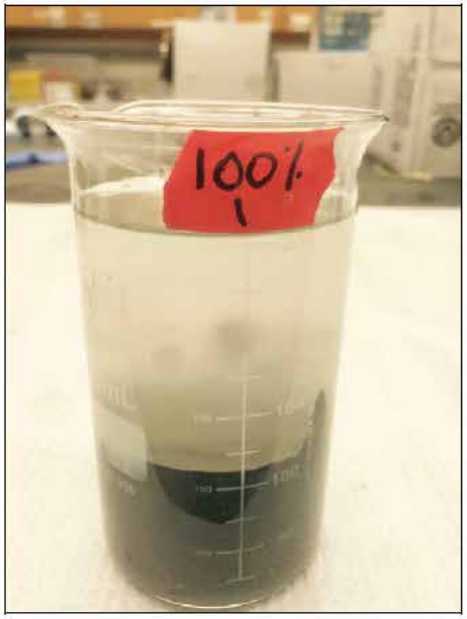
17- 20 L Pails

- PK Slimes (“EFPKT”)
- “Pore Water” – water seperated from slimes
- “Leachate” - water from a slimes mixture

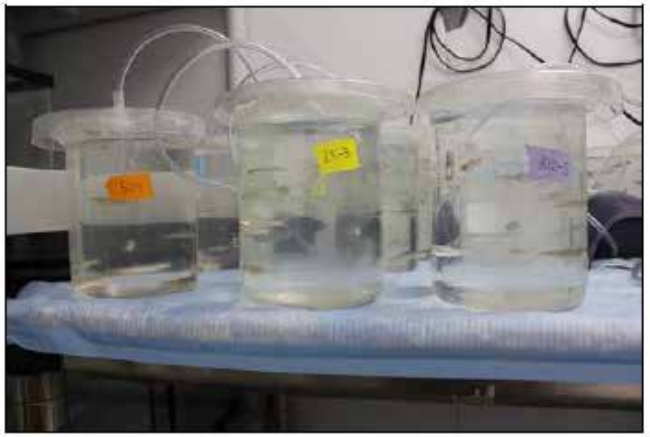
How was it tested?

1. Physical
   - Particle size
   - Total organic content
   - Moisture content
2. Chemical
   - 24 metals/trace elements
   - Major ions
3. Toxicity
   - fish – trout
   - water flea
   - algae species
   - 2 benthic invertebrate species

Extra Fine Processed Kimberlite Tailings

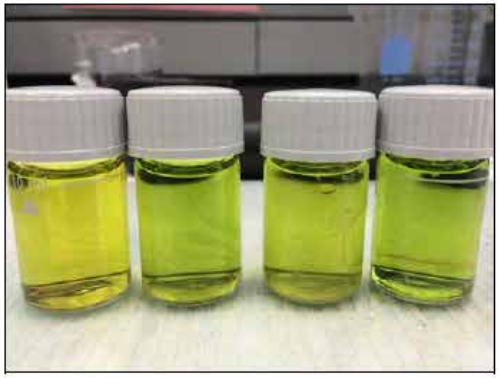


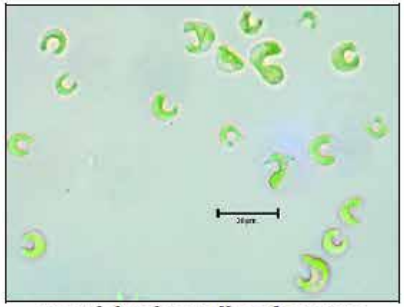
Rainbow Trout Toxicity Test



Oncorhynchus mykiss

Algae Toxicity Test



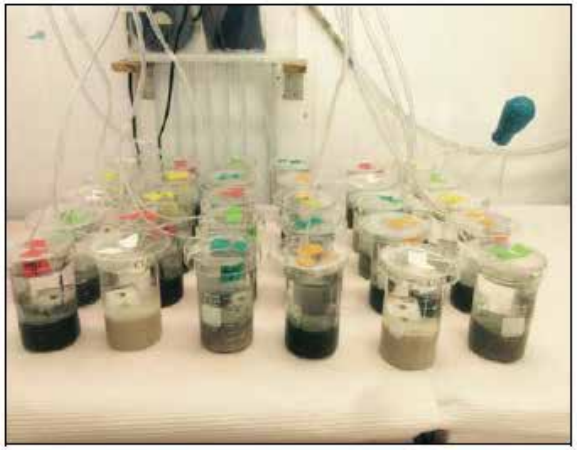


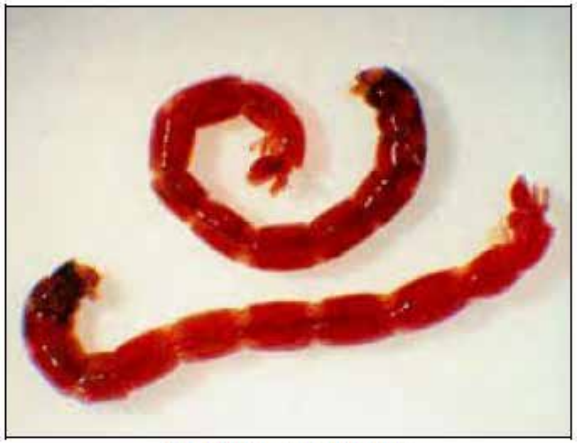
Pseudokirchneriella subcapitata

Daphnia Toxicity Test

Daphnia pulex

Chironomid Toxicity test





Chironomus dilutus

Hyalella Toxicity Test

Hyalella azteca

Results

Toxicity Test	PK Slimes	Pore Water	Leachate
Fish 			OK
Water Flea 		OK OK	OK
Algae 		OK	OK
Benthic (1) 	Reduced survival in 100%		
Benthic (2) 	Reduced growth in 100%	Reduced growth in 100% and 50%	Reduced growth in 100%

1. Fish in “leachate”- 28 days

Table 26. Mean survival, length (mm) and growth (dry weight) of *Oncorhynchus mykiss* in a 28-d bioassay conducted with leachate extracted from EFPKTs collected from the Containment Pond, Diavik Diamond Mine, NT. All data are ± SD.

		% EFPKT					
Endpoint	Control	3.12	6.25	12.5	25	50	100
Surivial (%)	100	98 ± 4.9	96 ± 5.4	86 ± 8.3	100	100	100
Length (mm)	33.1 ± 2.0	33.5 ± 1.6	33.4 ± 1.8	33.4 ± 1.9	33.7 ± 1.8	34.2 ± 1.8	34.4 ± 1.9
Biomass (mg per animal d.w.)	48.2 ± 10.9	50.4 ± 9.7	50.2 ± 13.2	50.5 ± 11.1	51.0 ± 11.9	53.7 ± 12.3	58.1 ± 12.8

2a. Water Flea in “pore water” and “leachate” – 48 hrs

Table 16. Mean survival (± SD) in the 48-h *Daphnia pulex* bioassays conducted with pore water and leachate extracted from EFPKT collected from the Containment Pond at the Diavik Diamond Mine, NT.

EFPKT Manipulation	Concentration of solution (%)	Survival (%)
Pore water	Control	100
	3.12	100
	6.25	100
	12.5	100
	25	98 ± 4.4
	50	98 ± 4.4
	100	80 ± 10
Leachate	Control	94 ± 5.4
	3.12	92 ± 8.3
	6.25	100
	12.5	100
	25	100
	50	96 ± 8.9
	100	94 ± 8.9

2b. Water flea in pore water – 21-days

Table 19. Survival and reproduction (mean ± SD number of neonates per replicate) in the 21-d *Daphnia pulex* bioassay conducted with pore water extracted from EKFPTs collected from the Diavik Containment Pond, Diavik Diamond Mine, NT.

		Concentration of pore water (%)					
Endpoint	Control	3.12	6.25	12.5	25	50	100
Survival (%)	90	90	40	10	20	60	90
Neonates per replicate	51 ± 9	55 ± 9	41 ± 9	15	34 ± 5	59 ± 10	64 ± 13

3. Algae in “pore water” and “leachate”

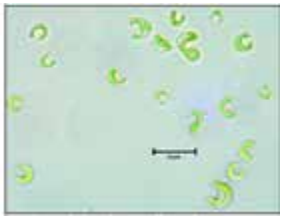


Table 14. Mean (± SD) number of cell divisions in the 72-h *Pseudokirchneriella subcapitata* bioassays conducted with pore water and leachate extracted from EFPKTs collected from Diavik Containment Pond, Diavik Diamond Mine, NT.

EFPKT Manipulation	Concentration of solution (%)	Mean cell growth	Coefficient of Variation (%)	Mean (± SD) cell divisions
Pore water	Control	634,000	21.3	51 ± 18
	3.12	831,000	14.8	61 ± 12
	6.25	664,500	25.5	61 ± 15
	12.5	593,750	37.4	43 ± 22
	25	487,500	35.1	35 ± 16
	50	475,625	36.2	34 ± 9
	100	414,500	38.7	28 ± 7
Leachate	Control	553,500	23.6	46 ± 19
	3.12	644,000	30.6	51 ± 21
	6.25	704,000	33.0	49 ± 14
	12.5	719,500	27.5	61 ± 18
	25	784,000	40.4	68 ± 32
	50	812,500	37.3	65 ± 24
	100	520,500	22.7	38 ± 7

1. Bethic invertebrate (1) in Slimes

Table 21. Survival (± SD) and mean (± SD) biomass (dry weight) of *Chironomus dilutus* larvae in a 10-d bioassay conducted with EFPKTs from the Containment Pond, Diavik Diamond Mine, NT.

		% EFPKT				
Endpoint	Control	6.25	12.5	25	50	100
Survival (%)	82.0 ± 20.1	76.0 ± 18.2	84.0 ± 8.9	82.0 ± 19.2	64.0 ± 18.2	38.0 ± 23.9*
Biomass (mg d.w. per animal)	0.10 ± 0.06	0.23 ± 0.14	0.15 ± 0.03	0.11 ± 0.02	0.12 ± 0.05	0.19 ± 0.08

* Statistically significant.

Benthic invertebrate (2) in slimes

Table 23. Mean survival (± SD) and growth (± SD) (dry weight) of *Hyalella azteca* in the final 10-d bioassay conducted with different manipulations of EFPKTs from the Containment Pond, Diavik Diamond Mine, NT.

Overlying medium	Reconstituted Containment Pond water		Saskatoon municipal Water		Containment Pond water		50% pore water	100% pore water	100% leachate
Test substrate	Sand	100% EFPKTs	Sand	100% EFPKTs	Sand	100% EFPKTs	Sand	Sand	Sand
Endpoint									
Survival (%)	70 ± 20	44 ± 26	82 ± 24	74 ± 13	58 ± 15	46 ± 17	72 ± 19	76 ± 13	68 ± 23
Biomass (µg d.w. per animal)	20.3 ± 5.7*	18.9 ± 6.9*	43.0 ± 3.8	22.7 ± 3.2*	26.0 ± 1.8*	14.0 ± 4.2*	22.3 ± 7.5*	24.0 ± 2.7*	20.9 ± 9.7*

* Significantly different from the positive control ($p \leq 0.05$).

DDMI Conclusions

- Acceptable water and slimes quality for aquatic life – good indicator.
- Next step will be to evaluate water chemistry and slimes chemistry with possible exposure scenarios for wildlife and human.

Other Related Activities

The TK Panel requests that DDMI starts to remove any new slime from site, effective immediately	The Panel felt it important to stop adding to the volume of slimes that has already accumulated on site.	Stewardship	DDMi is unable to immediately start removing slimes from site, as there is no alternative storage options available or permitted, nor is there an acceptable method of transport available.	N/A

- Engineered a Process Plant change to create more coarse PK and less FPK
  - Currently 70% FPK – 30% CPK
  - Trial 30% FPK – 70% CPK
  - Trial to start in June 2016

- Initiating engineering and regulatory feasibility studies of putting some PK back into underground/pit once mining completed.
  - Viewed as better long-term option

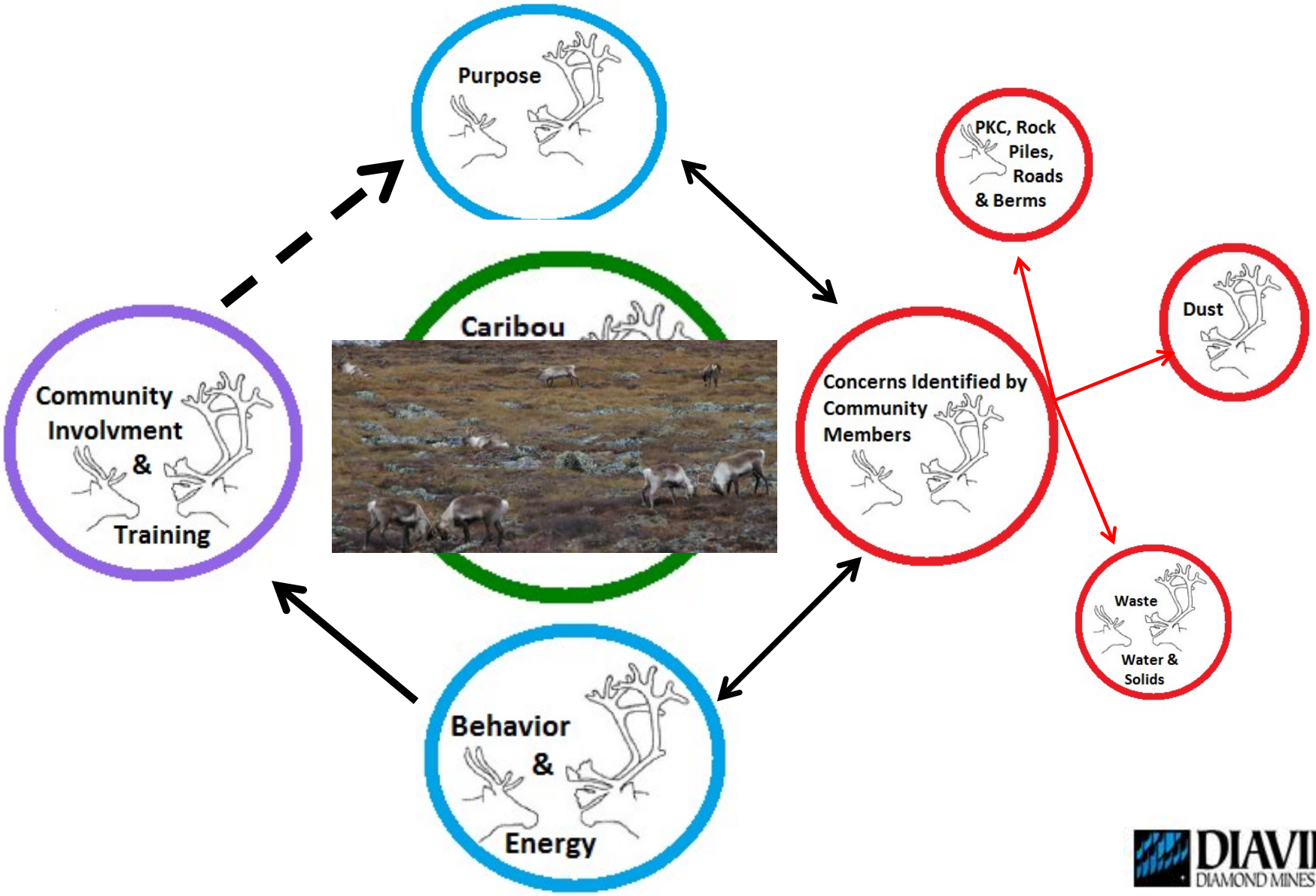
Appendix I

Diavik Caribou Monitoring Presentation

TK Panel Caribou Monitoring

May 13, 2016

Activity Budgets – Behavioral Observations



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PURPOSE

Gather information on caribou

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Mining Concerns from Community Members

Causing injury to wildlife and creating noise

Injury / Predation from Rock Piles

Dust fall out from Blasts

Roads & Berms injuring wildlife

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Mining Concerns from Community Members

Dust Contaminating Vegetation

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Mining Concerns from Community Members

Drinking From or Getting Stuck in Tailing Ponds

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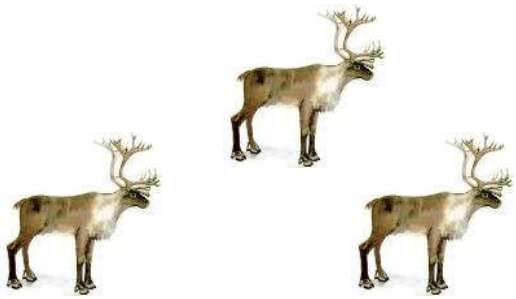
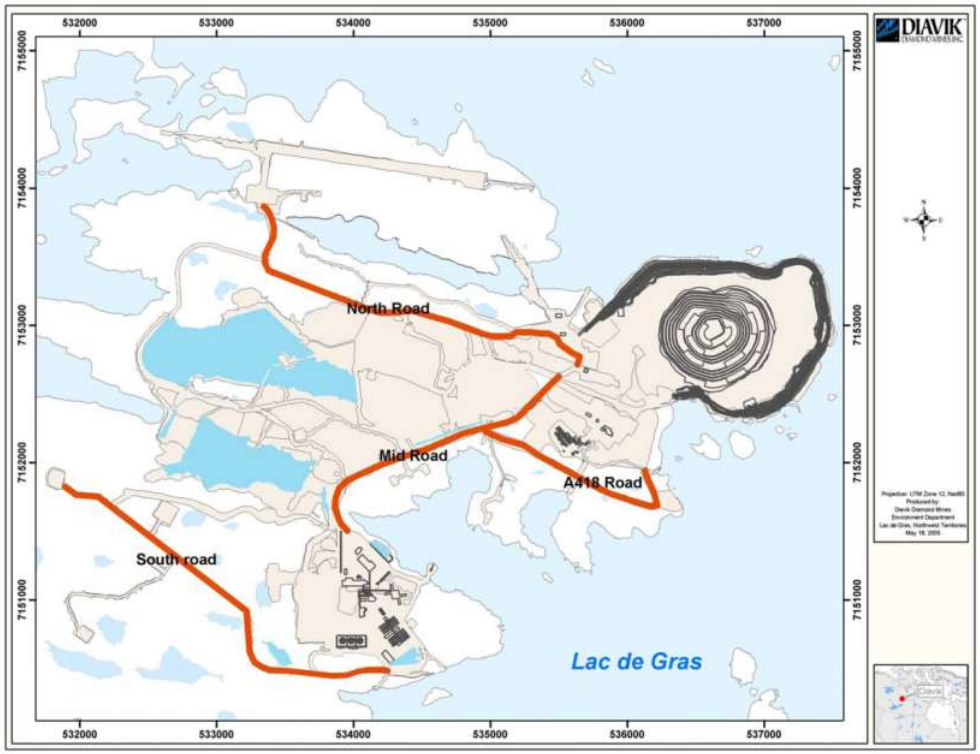
PKC, Rock Piles, Roads & Berms



Observations
3 day Intervals



2014 Trigger Action Plan

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Waste Control

Mine water

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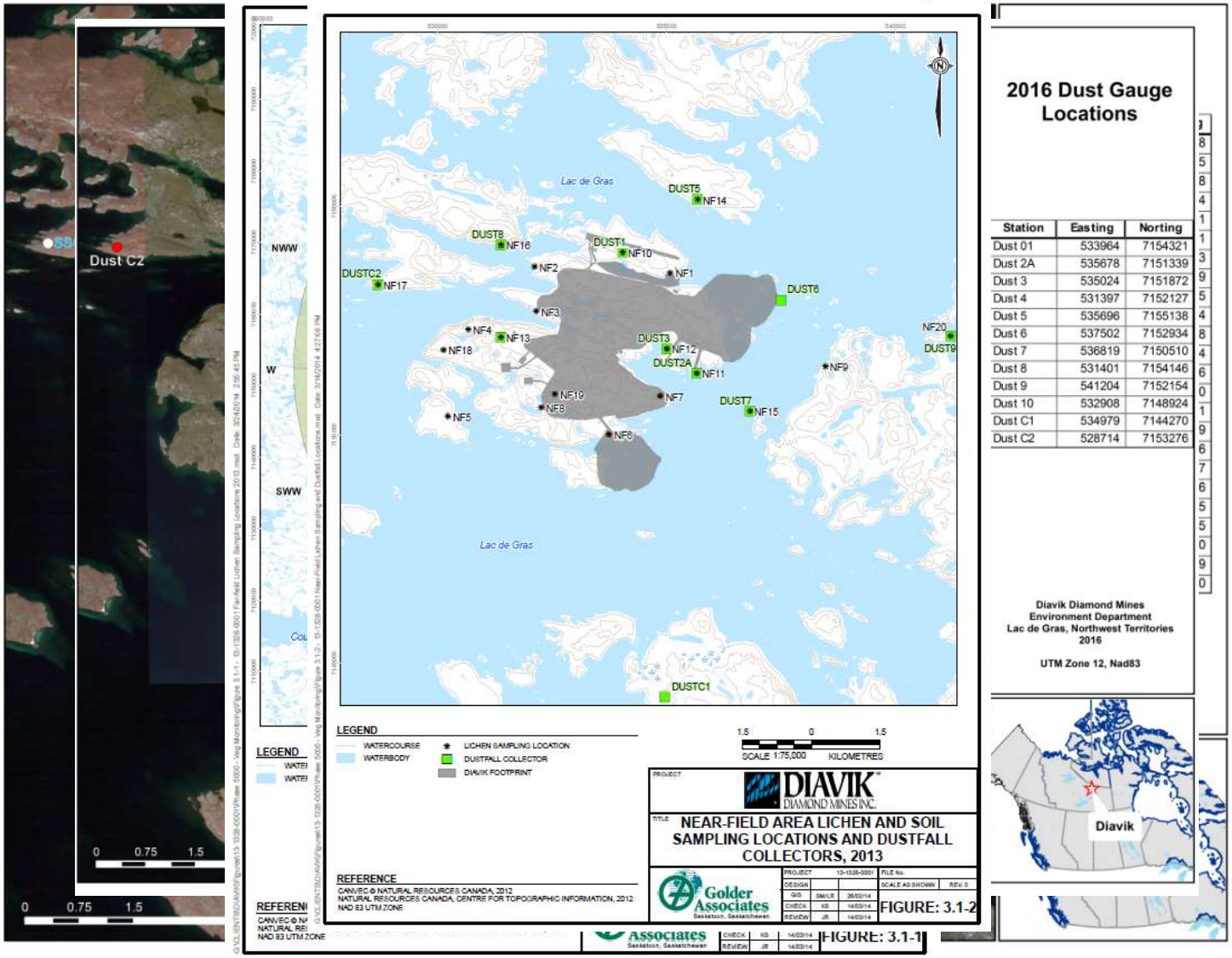
Dust



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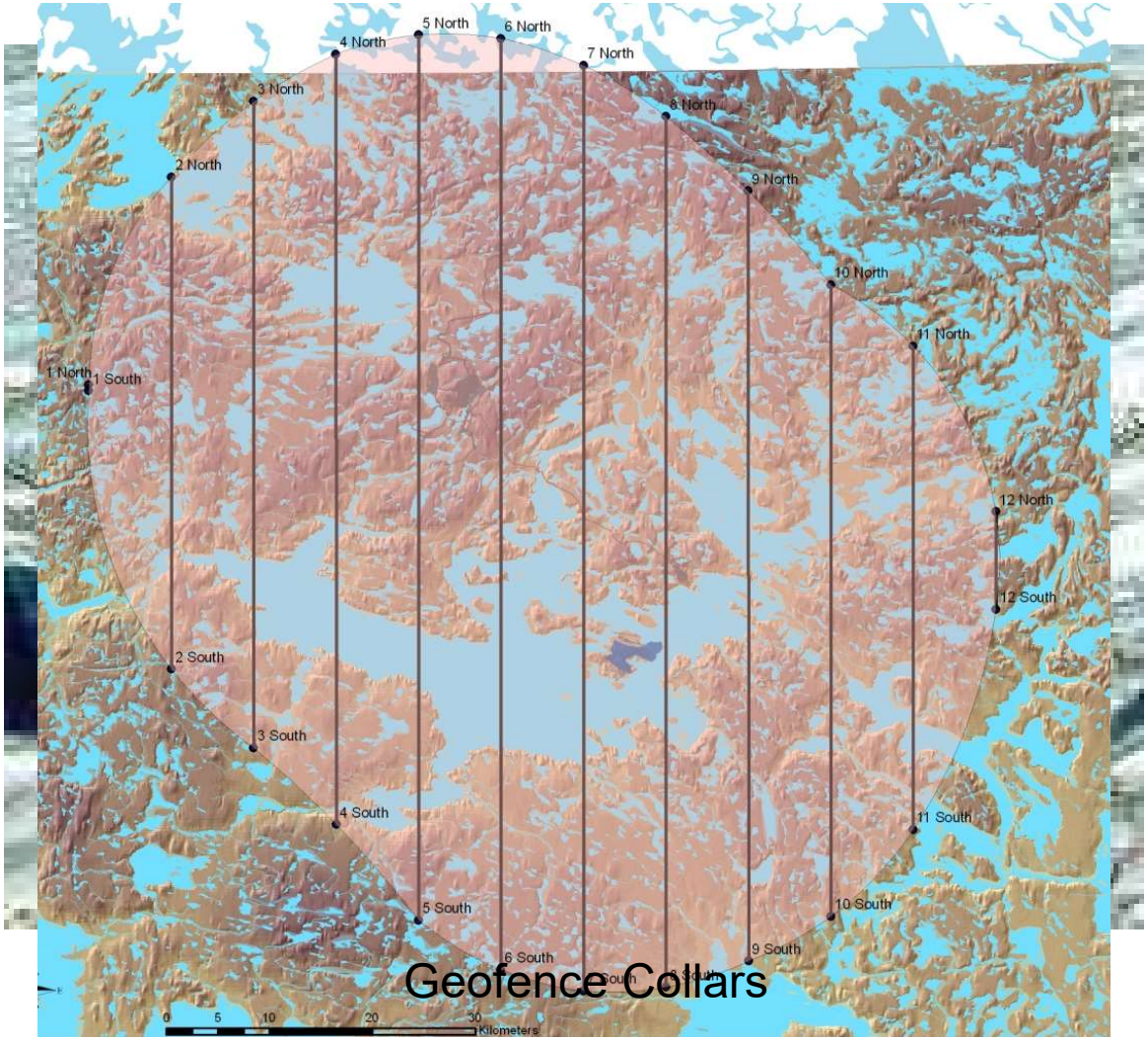
Regional Caribou Monitoring



Geofence Collars

Aerial Caribou Surveys - ZOI

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Activity Budgets –Behavioral Observations

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Location of 2015 Scans – LDG Area

38 Behavioral Scans in 2015

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Location of 2015 Observations – East Island

Table 4: Caribou Incidental Observations on East Island, 2015

Date	Number	Location	Comments
2015-Feb-18	1	outside of E wing	
2015-Feb-18	1	west of airport	
2015-Apr-10	1	south of Mine site on lake	observed during snow core collection
2015-Apr-20	1	between H dorm and process plant	
2015-Jun-03	35	north of Mine site on lake	on ice being chased by wolves
2015-Jun-22	2	emulsion plant area	young bulls
2015-Jun-24	2	west of pond 3	
2015-Jun-24	1	pond 3	large male
2015-Jun-28	1	south of A418 dyke	grazing
2015-Jun-30	1	rose garden	observed in shallow bay area later in the day
2015-Jul-01	1	below south tank farm	

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Previous Observations – East Island

2014

Species & Number									
REFO	Wolverine	Wolf	Grizzly	Caribou	Peregrine	R. L. Hawk	Gyr Falcon	Snowy Owl	Other
29	1	5	69	58	7	8	1	1	5

10 Different sighting		
1~30		Emulsion Plant
1~18		By MF3-4
1~2		North Inlet
8~8		Various locations

2015

Species & Number									
Red Fox	Wolverine	Wolf	Grizzly	Caribou	Peregrine	R. L. Hawk	Gyr Falcon	Snowy Owl	Other
11	120	23	134	47	4	3	0	0	15

2016

Species & Number									
Red Fox	Wolverine	Wolf	Grizzly	Caribou	Peregrine	R. L. Hawk	Gyr Falcon	Snowy Owl	Other
7	84	24	29	2	3	0	0	0	2

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Findings to Date from Behavior Monitoring

997 Caribou groups observed for behavioral activities 1998-2015

Distance from the mine does influence caribou with calves

Distance from the mine does not influence caribou without calves

– they spend less time feeding/resting closer to the mine (i.e. within 7 km)

– they are influenced by environmental factors (temperature, rainfall, insects)

DIAVIK DIAMOND MINES INC.

Community Participation

Community Members participate in the Behavioral Monitoring Program

Monitoring remains focused on western scientific approach

Diavik is always looking for ways to improve the program

DIAVIK DIAMOND MINES INC.

Photographs Activity Budgets

Thank you/
Mahsi/ Masi/
Marsi /Koana

DIAVIK
DIAMOND MINES INC.

Appendix J

GNWT Environment and Natural Resources Presentation: Bathurst Caribou Range Plan and Current Wildlife Research

Bathurst Caribou Range Plan

Diavik TK Panel workshop

May 14, 2016

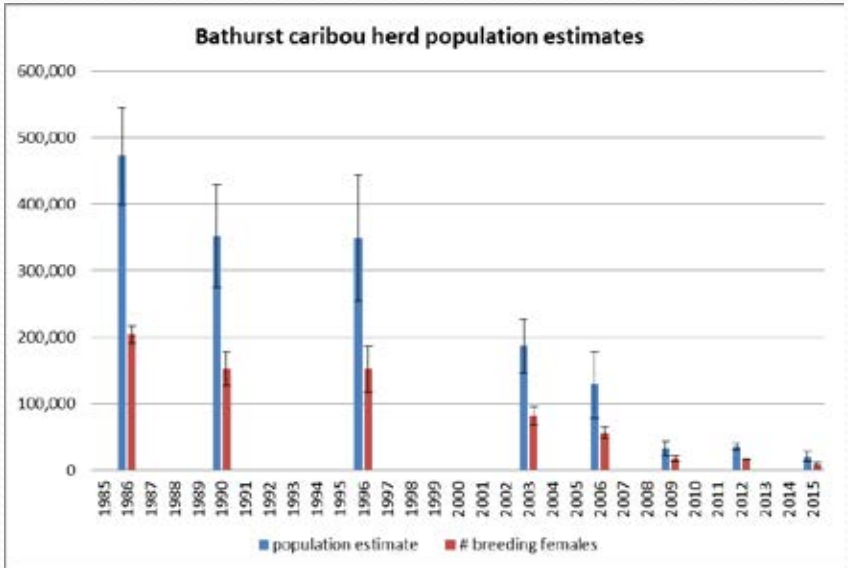
Karin Clark,
Wildlife Division, ENR

Habitat management

- food
- water
- shelter
- space

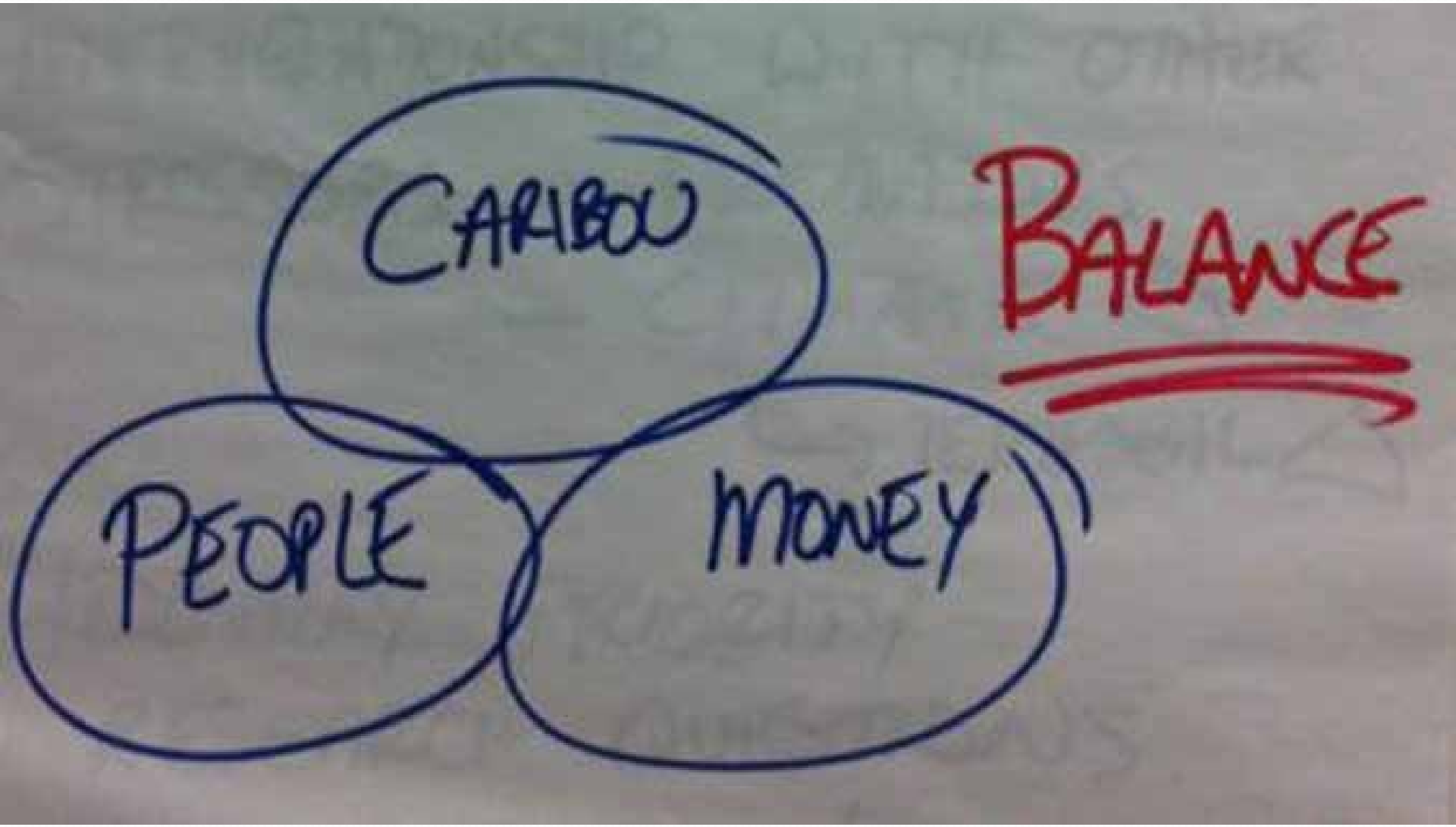
Bathurst Caribou Herd

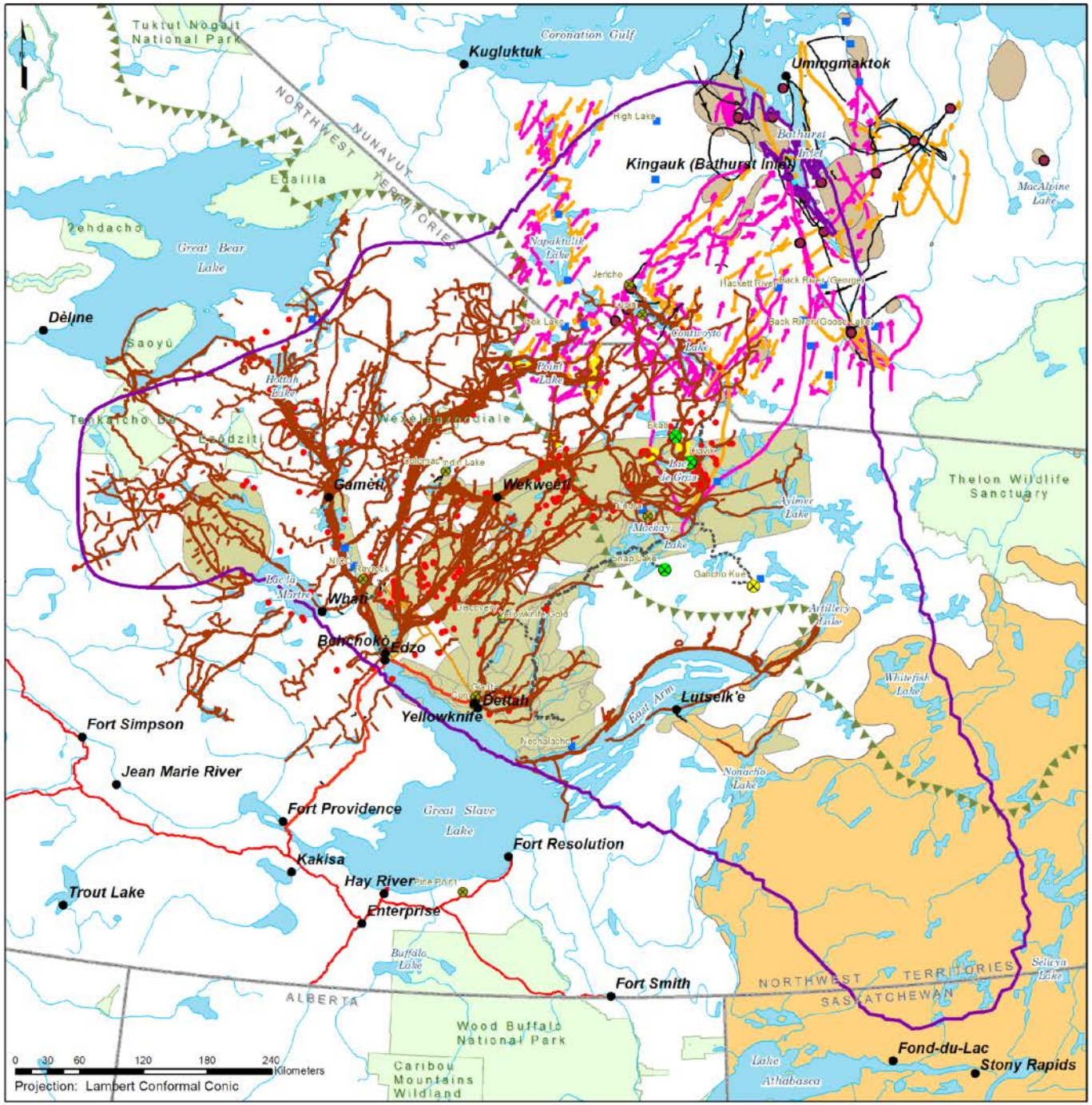
- Population decline of 96% over 30 years
- cumulative effects concerns in recent EAs
- take action in areas other than harvest restrictions



Working Group – diverse interests

1. Tłı̨cho Government
2. Łutsel K'e Dene First Nation
3. Athabasca Denesuline
4. North Slave Métis Alliance
5. NWT Métis Nation
6. Yellowknives Dene First Nation
7. Government of Nunavut Environment
8. Government of Nunavut Economic Development and Transportation
9. Chamber of Mines – Mineral Development
10. Chamber of Mines – Mineral Exploration
11. Kugluktuk HTO
12. Kitikmeot Inuit Association
13. Kitikmeot Regional Wildlife Board
14. Nunavut Tunngavik Inc.
15. GNWT – Lands
16. GNWT – ITI
17. GNWT – ENR
18. AANDC (Nunavut)
19. CPAWS
20. Barrenground Outfitters Association
21. NWT Wildlife Federation
22. Wek'èezhìı Renewable Resources Board


CARIBOU
PEOPLE
MONEY
BALANCE



Bathurst Caribou Herd Range Plan

Bathurst Caribou Traditional Knowledge

FOR DISCUSSION

Working Group Meeting #4, May 2015

LEGEND:

Tłı̨chǫ Information
- Caribou Trails
- Caribou Water Crossings
- Caribou Harvesting

KIA Information
- Spring Migration
- Fall Migration
- Other Bathurst Information
- Other Bathurst Information

Athabasca Denesuline
- Culturally and Ecologically Sensitive Area

North Slave Métis Alliance
- Carbou Harvesting

Planning Boundary
- Range Planning Boundary

Major Mining Projects
- Producing Mine
- Proposed Mine *(Under Construction)*
- Past Mine
- Advanced Exploration
- Proposed Port

Base Features
- Communities
- Highway
- Access Road
- Tibbit to Contwoyto Winter Road
- Other Winter Road
- Major Power Transmission Line
- Provincial Border
- Protected or Conservation Area
- Treeline
- Major River
- Major Lake

Project Sponsor:
GNWT ENR, Karin Clark

Consulting Team:
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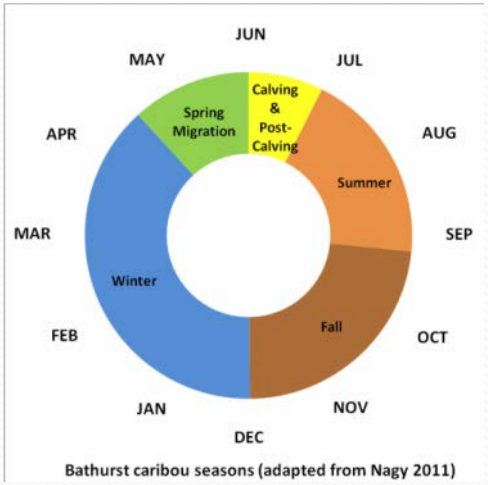
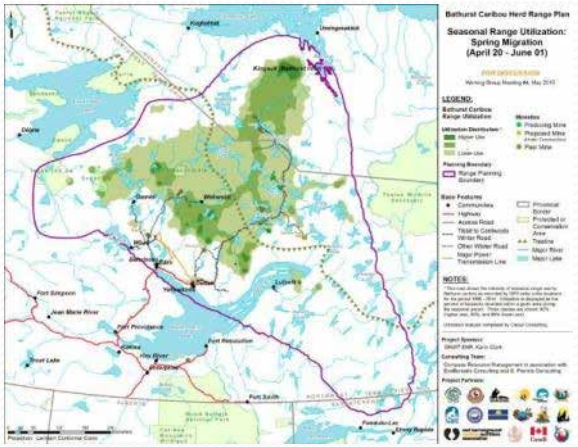
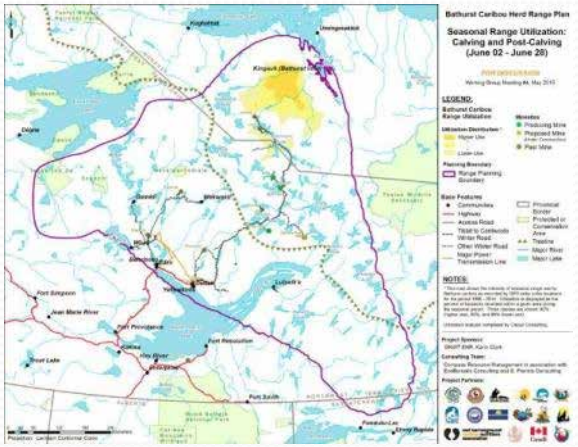
Project Partners:

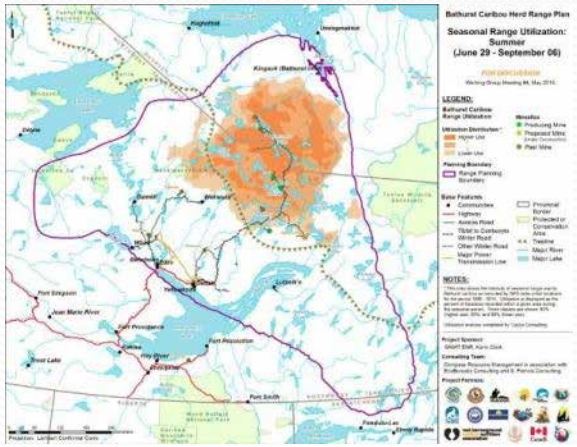
Seasonal Ranges

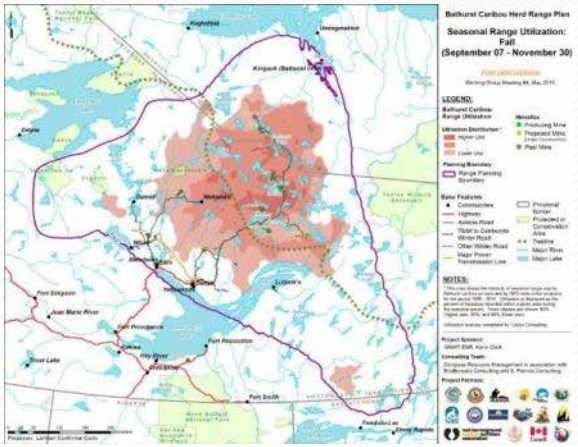


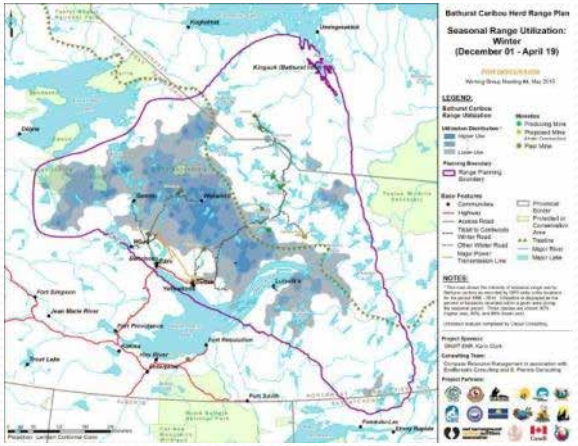
Bathurst caribou seasons (adapted from Nagy 2011)



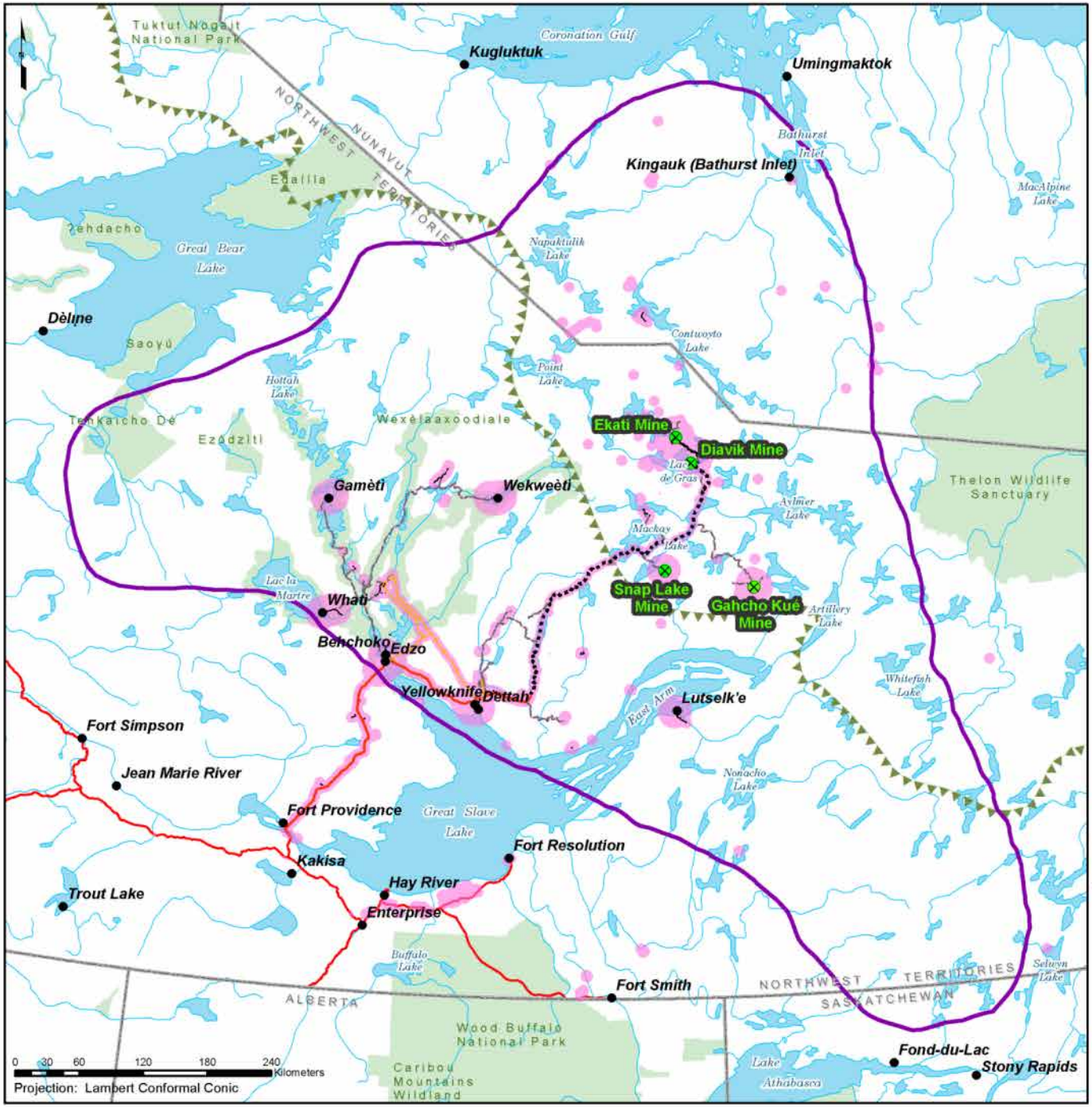








Looking ahead...



Bathurst Caribou Herd Range Plan

Development Scenarios: CURRENT SITUATION

FOR DISCUSSION

Updated November 10, September 2015

LEGEND:

Planning Boundary

- Range Planning Boundary

Direct Human Development Zone of Influence (ZOI) *

- Potential Human ZOI
- Active Minesite

Land Use Features

- Community
- Highway
- Access Road
- Main Haul Road
- Tibbit to Contwoyto Winter Road
- Other Winter Road
- Major Power Transmission Line

Base Features

- Major River
- Major Lake
- Treeline
- Provincial Border
- Protected or Conservation Area

NOTES:

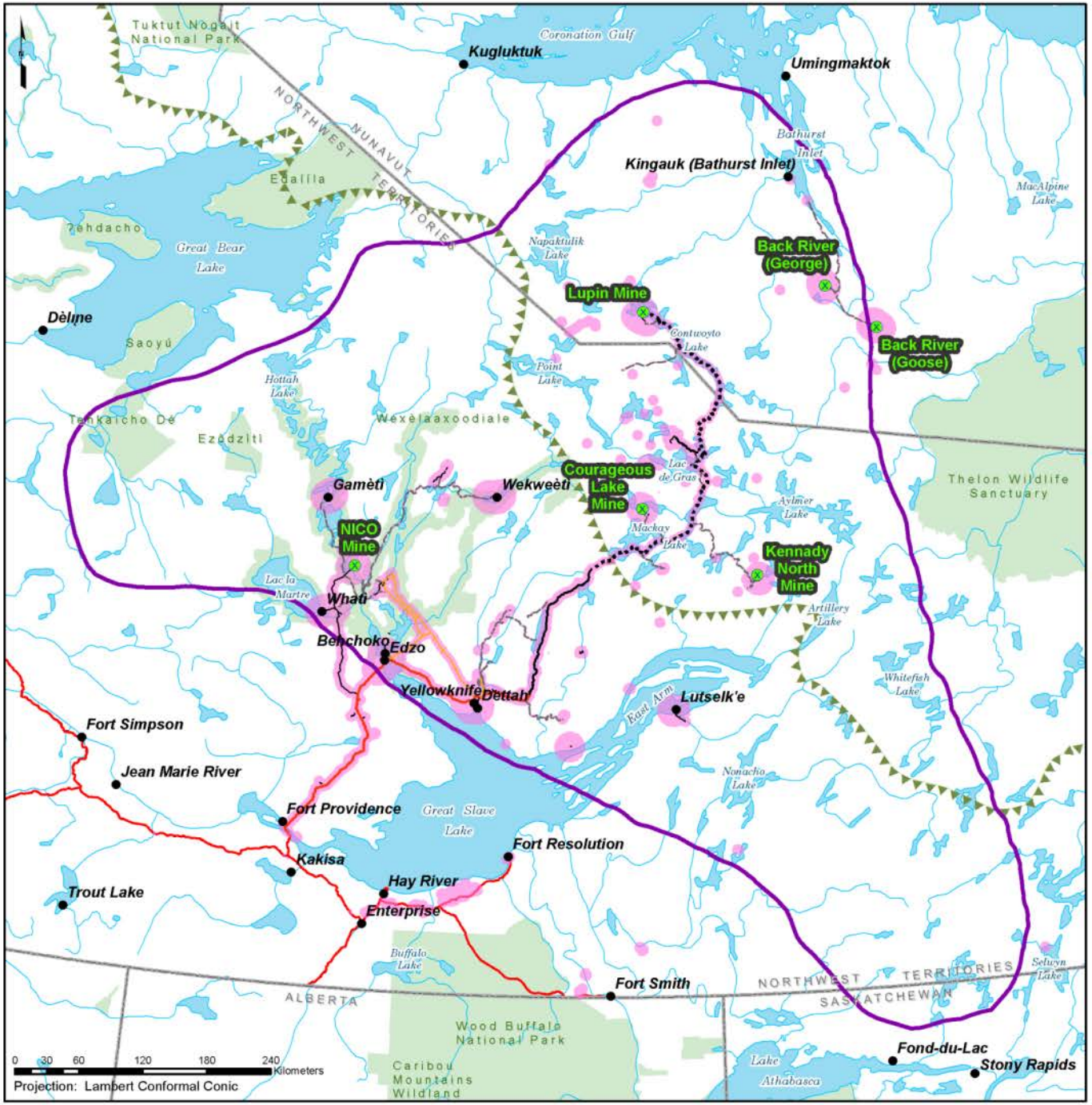
* This map shows potential ZOI around mapped human land use features (i.e., direct footprint).

Many human land use features and their corresponding zones of influence are not active all-year. Some mineral exploration activities occur in the late-spring, summer and fall periods, and winter roads are only present and used in the late-winter period.

Project Sponsor:
GNWT ENR, Karin Clark

Consulting Team:
Compass Resource Management in association with EcoBorealis Consulting and S. Francis Consulting.

Project Partners:



Bathurst Caribou Herd Range Plan

Development Scenarios: FUTURE - Case 1

FOR DISCUSSION

Updated November 10, September 2015

LEGEND:

Planning Boundary

- Range Planning Boundary

Direct Human Development Zone of Influence (ZOI) *

- Potential Human ZOI
- Active Minesite

Land Use Features

- Community
- Highway
- Access Road
- Main Haul Road
- Tibbit to Contwoyto Winter Road
- Other Winter Road
- Major Power Transmission Line

Base Features

- Major River
- Major Lake
- Treeline
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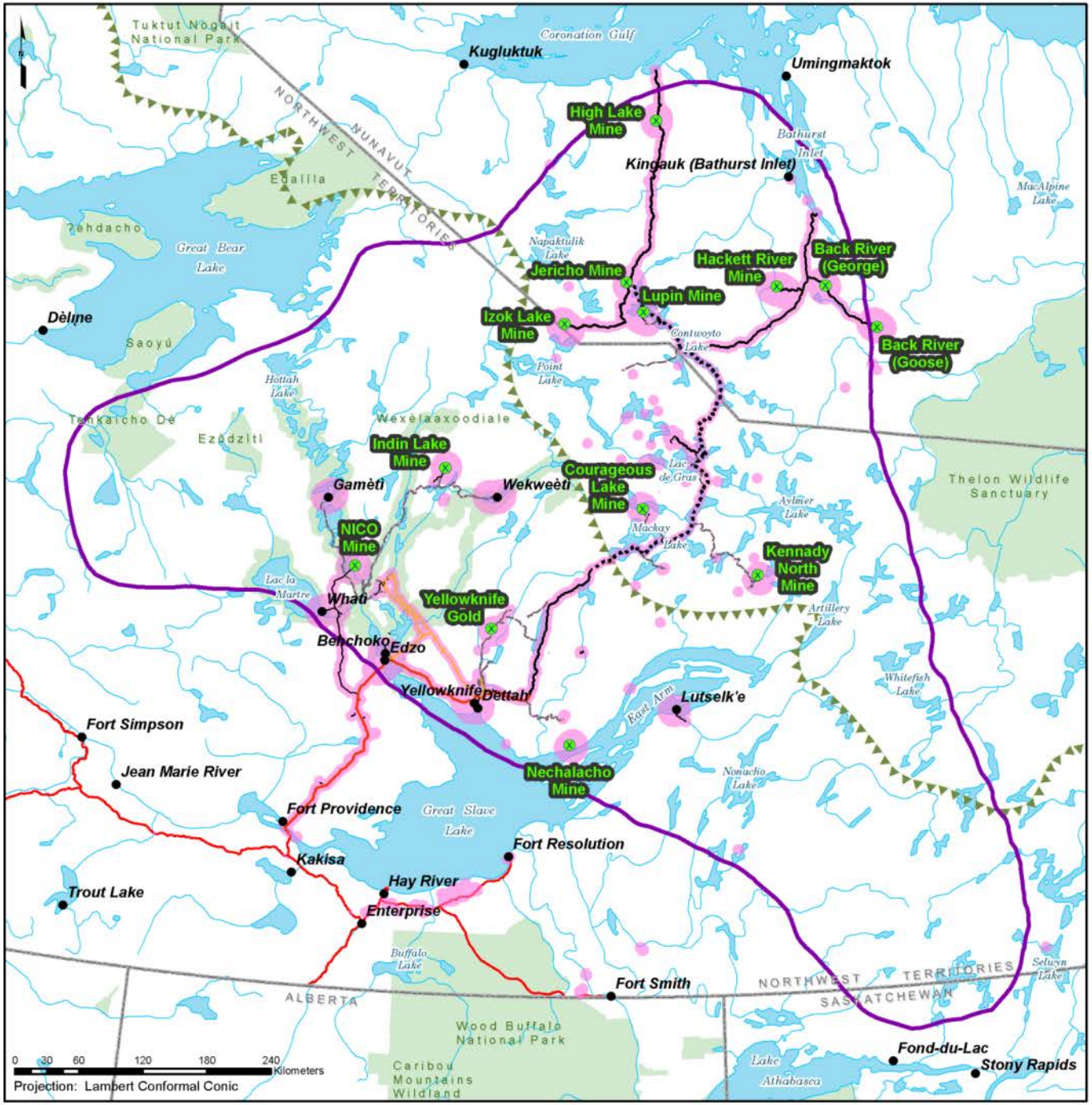

Bathurst Caribou Herd Range Plan

Development Scenarios: FUTURE - Case 2

FOR DISCUSSION

Updated November 10, September 2015

LEGEND:

Planning Boundary

- Range Planning Boundary

Direct Human Development Zone of Influence (ZOI) *

- Potential Human ZOI
- Active Minesite

Land Use Features

- Community
- Highway
- Access Road
- Main Haul Road
- Tibbit to Contwoyto Winter Road
- Other Winter Road
- Major Power Transmission Line

Base Features

- Major River
- Major Lake
- Treeline
- Provincial Border
- Protected or Conservation Area

NOTES:

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Many human land use features and their corresponding zones of influence are not active all-year. Some mineral exploration activities occur in the late-spring, summer and fall periods, and winter roads are only present and used in the late-winter period.

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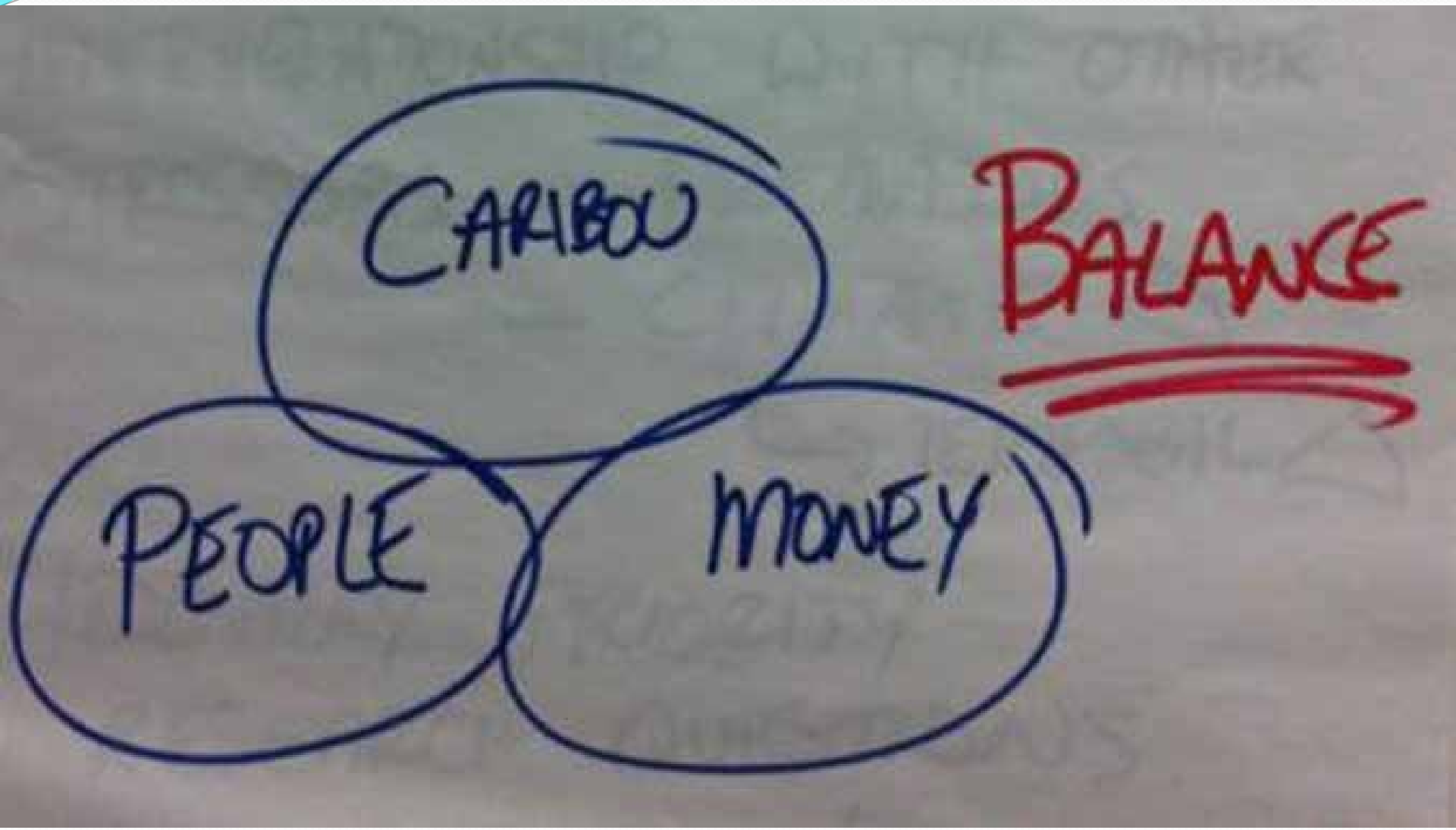
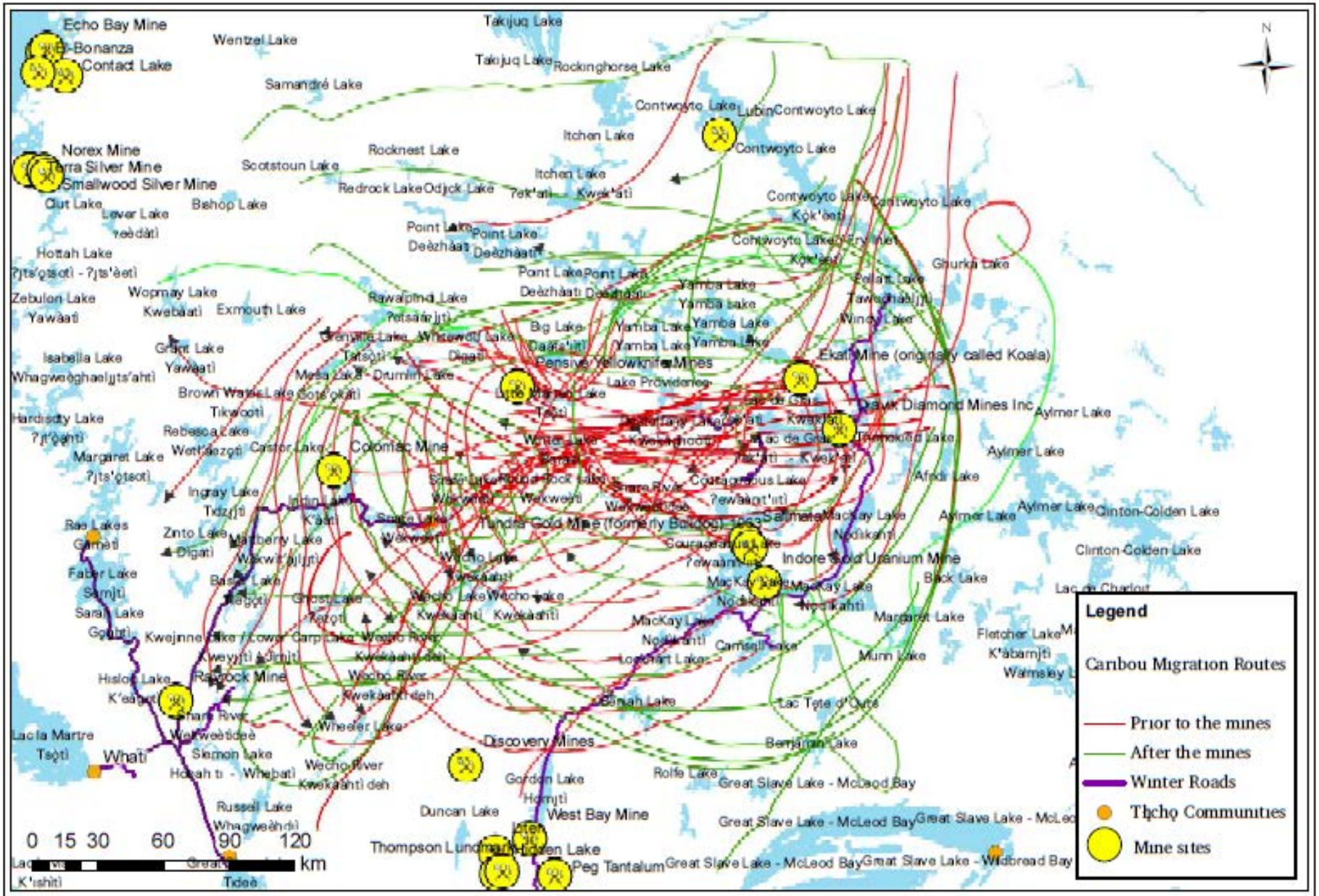

CARIBOU
PEOPLE
MONEY
BALANCE

Caribou response



Overview Map - Bathurst Caribou Migration Routes - Tłı̨chǫ Traditional Knowledge Study for Cumulative Impact Monitoring Program

Caribou responses

- # times contact development
  - Small amount of stress
  - More running/walking
  - Less feeding

Types of recommendations:

- limits to amounts of disturbance (how much is enough)
- Special management of features such as land bridges and water crossings
- Shutting down during certain times
- Protection of calving grounds
- Fire management

Recommendations directed to:

- Land Use Planning
- Environmental Assessment
- Permitting / Licensing
- Wildlife management and monitoring

Next Steps:

- Continued Working Group meetings:
  - Build habitat management alternatives
- TK guidance
- Community engagement – fall 2016
- Completed Plan by March 2018

Questions?

Karin Clark

867-767-9237x.53225

Karin_clark@gov.nt.ca

Northwest Territories Environment and Natural Resources

Summary of ENR Caribou Monitoring Initiatives

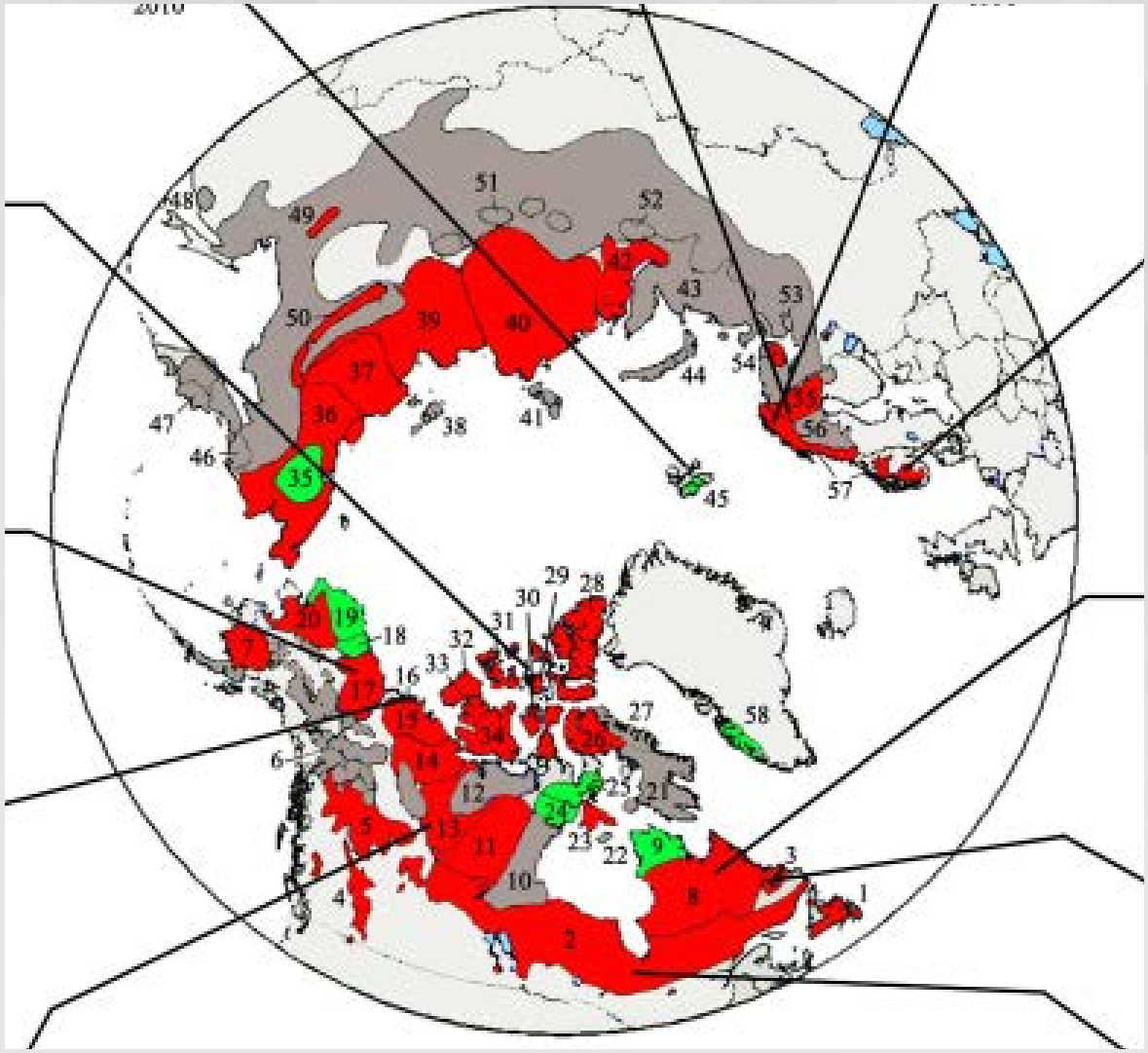
Diavik TK Panel Workshop

May 2016

Northwest Territories

Environment and
Natural Resources

Global Trends



- Declining
- Increasing
- Uncertain

(From Vors and Boyce. 2009. Global declines of caribou and reindeer, Global Change Biology 15: 2626-2633)

Northwest Territories
Environment and Natural Resources

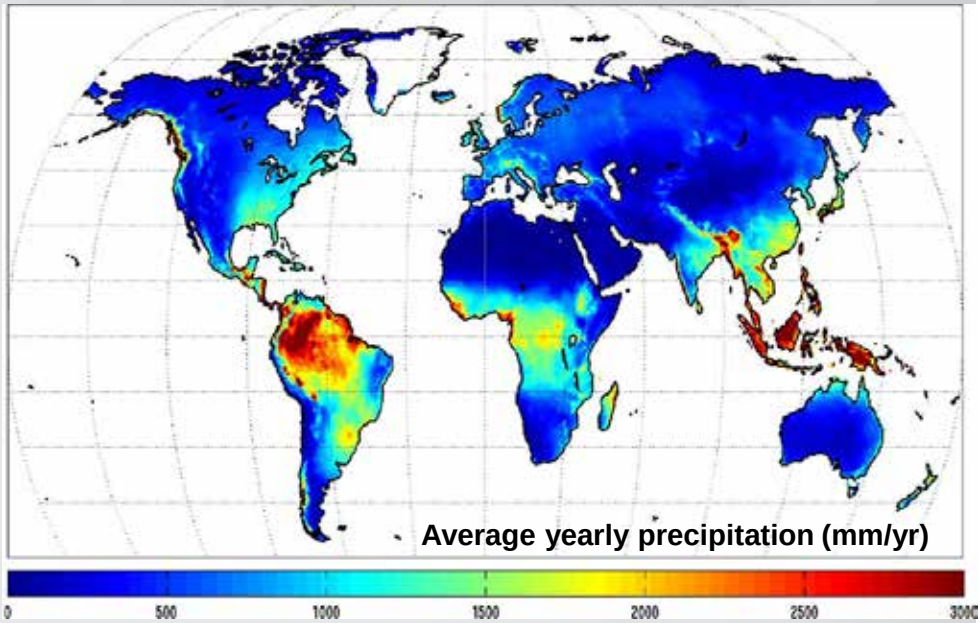
Cumulative effects on caribou

Photo J. Adamczewski, ENR

- Weather
- Fire
- Predators
- Development (Range Plan)

Weather trends

- Weather maps derived from satellite images (1979 onwards)
- Daily values for:
  - Temperature
  - Precipitation
  - Snow depth
  - Rate of snow melt
  - Wind speed
  - …..lots more



Weather trends

- Increasing:
  - fly harassment
  - temp/drought

- Decreasing:
  - mushrooms
  - Snow depth

* 2014 particularly severe….

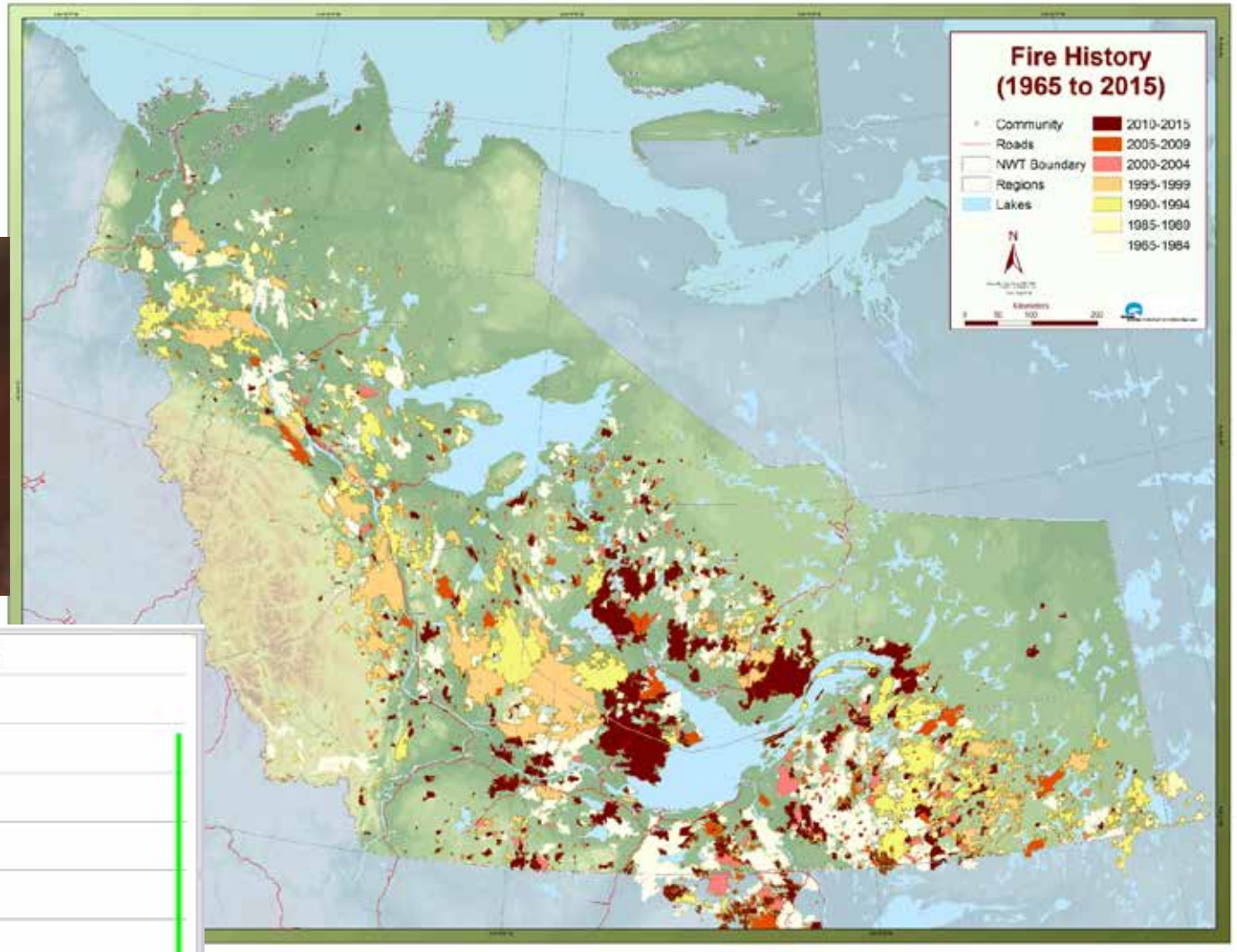
Northwest Territories
Environment and Natural Resources

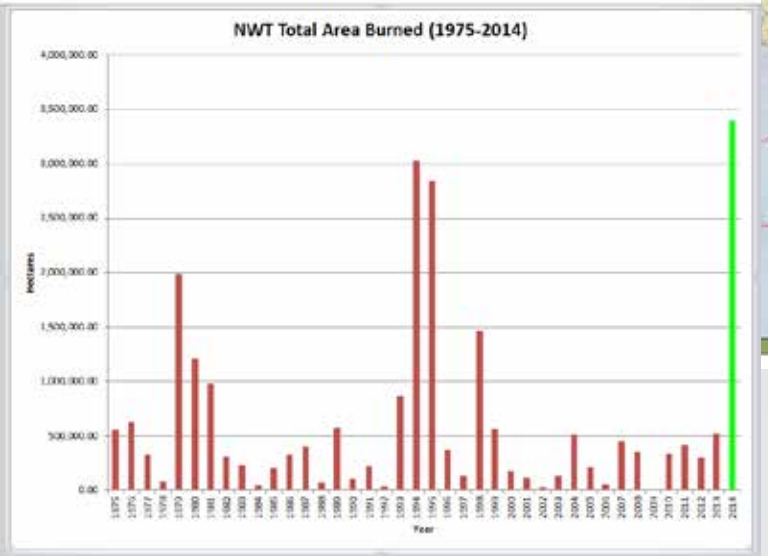
Breeding females in 2015

- Decreasing
  - Pregnancy
  - # calves

* 60% females had calves in 2015

Fire





* 38% of Bathurst winter range has been burned in the last 50 years

Northwest Territories
Environment and Natural Resources

Predators

?

- Decreasing:
  - Wolf abundance

  (Based on aerial and ground den surveys)

Estimated Wolf Density on Bathurst Summer Range 1996-2014 (Klaczek 2015)

Internet Photo

Proposed Actions 2016-2019: Wolves

1. Pilot TG project – Wolf Harvest by Tłı̨chǫ hunters on winter range.

2. ENR-led collaborative feasibility assessment of predator reduction options.

3. ENR: Increased wolf harvest incentives (all hunters)

Northwest Territories
Environment and Natural Resources

Wolf Harvested

No Handling

A harvester brings an intact wolf to any ENR office throughout the Territory.

Harvester Receives: $200

Total: $200

Traditional Handling

A harvester brings a wolf pelt prepared to traditional standards.

Harvester Receives: $ 400

Processed Skull: $50

Total: $450

GMVFP Handling

A harvester brings a good quality, prime, well-handled and properly prepared wolf pelt.

Harvester Receives: $ 400

Processed Skull: $50

Prime Fur Bonus: $350*

Total: $800

* If the pelt sells for more than $200 at auction, the harvester receives the prime fur bonus.

Northwest Territories
Environment and Natural Resources

2016-2019: Monitoring

1. Calving photo survey (every 3 years) - 2018
2. Aerial surveys on calving grounds (annual)
3. Spring calf:cow survey (annual)
4. Movements (Collars - 30 females, 20 bulls)
5. Environmental trends updated annually
6. Wolf harvest (annual)
7. Wolf abundance
8. Monitor compliance in Bathurst mobile zone
9. Calving ground composition surveys (every 3 years)
10. Fall sex ratio composition survey (every 2-3 years)
11. Cow survival rate estimation (every 3 years)

Photo J. Adamczewski, ENR

Collaboration with Industry in Caribou Monitoring

- ENR is working with Industry to develop common approaches to:

  - caribou behaviour monitoring
  - Zone of Influence monitoring (aerial surveys)
  - Caribou movements close to minesites (geofencing collars)

Appendix K

TK Panel #9 Recommendations Presented to DDMI

Traditional Knowledge Panel Guidance and Recommendations

Session #9: Caribou
May 12-16, 2016

Guidance

North Country Rock Pile

- The TK Panel supports the 3:1 slope and ‘caribou ramps’ up and down the NCRP
- The TK Panel supports the current closure plans for the NCRP with conditions (see following recommendations)

Helping Caribou

- Learn from other countries about how they are trying to bring back caribou populations
- Contribute to educational programs that teach traditional practices based in respect for caribou, including predator harvesting practices, using all parts of the caribou, processing hides for clothing and other traditional uses
- Recognize and honour the real sense of urgency regarding caribou health and the desire of caribou people to slow and/or stagger industrial development

Directing Caribou Movement

- Consider boulder fences to block access to areas (recognizing that caribou may use them for shade)
- Consider traditional fencing (e.g. inukshuks, trees, traditional flags) to guide movement
- Consider decoys (such as owls are used to scare away birds) and/or devices that emit high pitch frequency, noise, or wolf sounds to discourage caribou from going to specific areas on the mine site. Determine if there are larger versions of vehicle "deer whistles" that can be used with wind power to keep caribou away from certain areas.
- Consider controlled burns of vegetation to discourage wildlife from going to specific areas and to encourage natural re-growth over the long term

Monitoring Caribou

- Install motion-sensitive wildlife cameras on the north and west sides of East Island and at important caribou crossings. The north side camera(s) would point to the lake and mainland, the west side camera would point towards the mine. Other possible locations on East Island: 1 on top of the rock pile as it is a high point like a lookout (determine if the camera could rotate around); 1 on the south dike of A21; 1 on the west point (near the accommodations); 1 on the south dike of A418 (these 3 would face southeast). Cameras should also be located at both sides of important caribou crossings of water and land.

Fostering Stewardship

- Explore transferring ownership of the TK Camp to the GNWT or another designated organization (e.g. EMAB?) for use by community monitors after 2025
  - Provide transportation, accommodation and equipment to meet monitoring needs of community monitors at the TK Camp
- Participate in the development of a Stewards Program with industry/government/community/academic partners that would assume long term monitoring and management of the site in the Lac de Gras area (i.e. similar to the Haida Watchman model)

Recommendations

North Country Rock Pile: Additional Recommendations

9.1 Re-vegetate the base of the NCRP around the ponds.

9.2 A limited number of boulders (e.g. 3-4) should be placed on top of the NCRP to provide some shade for caribou, create habitat for small mammals and encourage natural re-vegetation.

9.3 Study the wind and snow accumulation on caribou ramps/trails as well as the top of the NCRP before finishing/finalizing the sloping/grading of the NCRP.

9.4 Ensure a gradual slope on the top of the NCRP so that there is a slight dome down the centre.

Helping Caribou

9.5 Sponsor (or co-sponsor) a contest to gather ideas from communities on how to help the caribou to get strong

9.6 Recognize and honour the importance of ceremony in healing the relationship to caribou and contribute to healing events that are currently being planned by communities

Directing Caribou Movement

9.7 Place boulders along the southern edge of the NCRP, along the edge of where the steep slope between the NCRP and the PKC will meet to keep caribou away (refer to map).

9.8 Place a circle of boulders around the PKC pond, in an area that is stable enough to support the weight and where they won't sink into the slimes, and around the shore of the North Inlet (refer to map).

Monitoring Caribou (General)

9.9 Contribute to training community monitors in using both traditional knowledge and western science so that common approaches across communities are used and results can be pulled together from many places

9.10 Work with Ekati on developing monitoring plans for caribou after 2025

Monitoring
2023 - 2025

9.11 Recognizing that Aboriginal communities are committed to their traditional responsibility to take care of the environment, participate with Diavik and other partners (e.g. Dominion Diamonds) to explore ideas and develop capacity to establish a Cumulative Effects Monitoring and Management Station (CEMMS) using the TK camp as a base that has program links to the GNWT Daring Lake Research Station

9.12 In partnership with communities and the GNWT, begin planning a joint TK and WS monitoring program that would begin in 2023 to be ready for implementation in 2025 by building on and expanding the current Diavik monitoring program

Monitoring
2023 - 2025

9.13 Offer monitor training to provide traditional land users with new skills and techniques to monitor from mine closure through to when Diavik completely leaves the site (expected to be 2030) and beyond for long term monitoring

9.14 Focus monitoring on wildlife health and safety and possible impacts of other mines in the Lac de Gras area

9.15 Design monitoring training with the objective of understanding what is happening in the eco-system with cumulative effects

9.16 Employ community monitor trainees and ensure they have a meaningful role in the design of various aspects of closure work, including the building of wildlife ramps; the reclamation of the PKC, the North Inlet and contaminated sites; and any re-vegetation work on site.

Monitoring
2025 - 2030

9.17 Employ and ensure opportunities for high level employment/career advancement of trained community monitors (graduates of the training program) funded by Diavik and/or others. In addition to community members, a minimum of one Elder and one youth from each community should participate in the training program.

Monitoring
2025 - 2030

9.18 Focus monitoring to determine if steps taken/closure and reclamation actions are working the way they were intended, through the following measures:

- Slopes for safe passage of wildlife, boulders for keeping wildlife out of areas, the use of natural water filtering systems, the use of video cameras to detect wildlife presence, the testing of water from the North Inlet and PKC area, understanding ecosystem dynamics and the linkages between components, cumulative effects
- Include plant growth, plants dying, fur & antler condition, and presence/absence of injuries or spots on the side of caribou as some of the indicators of caribou well-being
- Caribou presence identified on cameras, collars, and sightings would trigger monitoring
- Other animals can be indicators that the land is not healthy (e.g. smaller rodents, birds, fish can tell of change happening in larger animals like caribou, bears, etc.)

Caribou Monitoring & Cameras: Recommendations

9.19 Ensure that all communities are involved in choosing where to establish monitoring locations for the cameras, etc. -- building on the locations and concepts identified by the TK Panel (i.e. refer to map). Train community members to operate monitoring technologies. Start using cameras now and continue to 2030.

9.20 Check to see if Ekati has a camera at the caribou crossing at the Narrows; if not, Diavik should install one there.

.

Supporting Stewardship

9.21 Support the focus of long term monitoring goals of CEMMS on natural re-vegetation, return of caribou and other wildlife, and water quality in Lac de Gras area

Supporting Ceremonial Traditions

9.22 Respect spiritual beliefs and the importance of healing ceremonies of Aboriginal communities, work with the TK Panel to plan spiritual gatherings on site now through 2030;

- One would be held early/soon to help people on-site understand Aboriginal ceremonial ways, possibly timed with a TK Panel session (e.g. 2017);
- Second would be to start healing the environment (e.g. land) (e.g. 2020);
- Third would be designed to seek guidance on the finalization of the closure plan (e.g. 2023);
- Fourth would be large and involved to formally invite the spirits to return to the Island before Diavik leaves (all communities invited, drumming, etc.) (e.g. 2030)

Supporting Ceremonial Traditions

9.23 Whenever the TK Panel and community members come on-site, allow opportunity, time, space, etc. for the TK Panel to practice 'feeding the land or water' by Panel members and others (visitors or workers) travel to/from the site and consider other ways to raise awareness (e.g. signage).

Other

9.24 Do not reconnect the North Inlet, open pits and PKC area with the lake/land; keep dams and dikes intact unless the water and sediments in those areas is proven to be clean and the same as Lac de Gras

9.25 Given that the pits are going to be refilled with water, that Diavik is considering putting processed kimberlite and 'slimes' into the pits and underground shafts and concerns about tremors and seismic activity, the TK Panel requests a tour of the pits and underground shafts to see the 'receiving environment' with their own eyes.

Appendix L

TK Panel Process Presentation

Responses for Questions to Diavik

- What is the approximate volume of slimes and dimensions of slime area in the pond right now?
  - **End of mine estimate: 38 m deep, ~200 m wide E-W, ~100 m wide N-S, 50-70 m deep**
- How much will the lake water level go down when Diavik fills the pits?
  - 0.033m (**1.3 inches**) if fill both pits in the same summer
- Who are the community liaisons for Diavik?
  - **Helen Tologanak** (KIA), **Lesley Ann Evans** (YKDFN), **Grace MacKenzie** (Tłı̨chǫ), others currently vacant
- How many Aboriginal employees are there in Environment and at the mine in total?
  - **Environment: 5** (50%, 10 employees); **Diavik (end of 2015): 280** (25%, 1134 people)
- What do the rocks on the shoreline of the North Inlet look like?
  - See following slides

Next Steps

Session	Original Plan (2013)	Completed & Revised Plan
6	PKC	PKC
7	Re-vegetation	Re-vegetation
8	Review of Closure Landscape	Fish Habitat Design & Water Quality
9	Post-closure monitoring: Wildlife & Water	**Post-closure Wildlife Monitoring**
10	Fish Habitat Design Reviews	**Closure Plan Update & Landscape Overview**

- Reached the end of the topics you originally suggested
- Need to plan for future sessions – 1/year is realistic
- DDMI Interests: South Country Rock Pile design, building disposal plans, 2018 AEMP TK Study, North Inlet closure plans

Appendix M

TK Panel Session #9 Evaluation Summary

2016 Diavik TK Panel, Session 9: Evaluation Form Summary

Question	Very Good	Good	Neither Good nor Poor	Poor	Very Poor	Total Responses	Comments
How would you rate the session for working and communicating together?	13	2	0	0	0	**15**	
How would you rate the session for mutual respect among participants?	11	4	0	0	0	**15**	
How would you rate the recording of TK during the session?	10	4	1	0	0	**15**	
How would you rate the facilitation of the session?	12	3	0	0	0	**15**	Excellent job of helping us pull our ideas together
How would you rate the outcomes and findings of the session?	8	7	0	0	0	**15**	
How would you rate the venue and food for the session?	10	4	1	0	0	**15**	
How would you rate the logistics for the session (e.g. hotel, travel, honoraria)	8	3	3	0	0	**14**	1 unanswered
Overall, how would you rate the session?	11	3	0	0	0	**14**	1 unanswered

Question	Too long/ many	Enough	Too short/few	Total Responses	Comments
How would you rate the opportunities for you to share your knowledge and experiences?	2	13	0	**15**	
How would you rate the amount of time to discuss the topics during the session?	2	13	0	**15**	

What were the strengths of the session? What did you enjoy most about the session?

- Helping each other in our ideas
- Being with people from other communities
- Sharing stories related to subjects (2)
- Enjoyed everything about the session
- Everyone respects one another so that each person can have their say
- Excellent tours: guides very informative
- Facilitators were good & brought issues and ideas forward
- Supportive session with good people working together (x2)
- Enjoyed the consideration of ceremonial practices and open discussions
- Opportunity to participate and discuss thoughts and concerns
- Job well done
- Very well organized

How could the session be improved?

- More time outdoors
- Panel members should be involved with other mines, too
- Increase the honoraria for Elders (x3)
- Good the way it is
- More involvement of Elders and youth
- Go underground
- Provide written material to translators ahead of time
- Weekends don't work great
- More storytelling

DDMI Traditional Knowledge Panel Session #11

OPTIONS FOR PROCESSED KIMBERLITE

Diavik Diamond Mine, NT
May 10–14, 2018

Thorpe Consulting Services

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Diavik Diamond Mines (2012) Inc.
Traditional Knowledge Panel Report

Session #11: *Options for Processed Kimberlite*

Diavik Diamond Mine, NT
May 10–14, 2018

Facilitation

Joanne Barnaby, Joanne Barnaby Consulting
Natasha Thorpe, Thorpe Consulting Services

Participants

Kitikmeot Inuit Association	Bobby Algona, Nancy Kadlun, Regan Adjun (youth)
Łutsel K'e Dene First Nation	Doris (Terri) Enzoe, Cecelia Sarazine (Sara) Boucher, Kohlman Enzoe (youth)
North Slave Métis Alliance	Kathy Arden, Wayne Langenhan
Tłı̨chǫ Government	Dora Migwi, Louis Zoe, Mason Beaverho (youth), Peter Huskey (interpreter), James Rabesca (interpreter)
Yellowknives Dene First Nation	Rose McKenzie, Angus Martin

Observers/Presenters/Visitors

Environmental Monitoring Advisory Board	John McCullum, Allison Rodvang (observers on May14)
Tłı̨chǫ Government Lands Department	Joline Huskey (observer)
Diavik Diamond Mines Inc.	Peter Gillies, Steve Rowles, Shelby Skinner, James Sovka, Nathan Wolfenden
C&E Consulting	Colleen English
Thorpe Consulting Services	Kaylee McKinney (transcriber)

Interpreting equipment provided by Pido Productions.

Background

Since 2011, the Traditional Knowledge (TK) Panel has guided Diavik Diamond Mines (2012) Inc. (Diavik) to appropriately and meaningfully consider of Traditional Knowledge (TK) in operations, environmental management and monitoring as well as closure planning at the Diavik Diamond Mine. The TK Panel has been meeting since 2012 and continues to gather at least once a year to discuss select issues and concerns related to the Diavik Diamond Mine (Figure 1). The most recent gathering was held at the Diavik Diamond Mine from May 10–14, 2018 to consider various options for handling processed kimberlite on-site through operations and closure.

Session Purpose and Overview

The purpose of TK Panel Session #11 was for participants to explore options for processed kimberlite (PK) for operations and closure/post-closure, "see with their own eyes" the open pit and underground mining areas (A154 and A418) and processing plant, and respond to Session #10 recommendations around the South Country Rock Pile and watching/monitoring made by TK Panel members.

The possibility and technicalities of placing PK into the A418 mine workings—possibly moving much of the PK from the current containment facility (i.e., the processed kimberlite containment, or PKC) as well as the option to put PK from the process plant in the mine areas without emptying the PKC—were discussed. Finally, the TK Panel considered the implications of continuing PK disposal within the current containment. Panelists were asked about their comfort around each option.

During previous sessions, TK Panelists suggested that an underground and open pit tour would help them to understand the nature of mining kimberlite for diamonds to better provide guidance on closure options for PK. During this session, DDMI accommodated this request. These learnings built upon previous session discussions around PK, PKC and closure and enabled people to provide informed guidance and recommendations. In particular, the TK Panel revisited findings from Session #6 which focused on the PKC.

A short presentation highlighted PK disposal at other mines (e.g., Ekati) and spoke of diamond mines facing similar challenges around waste rock throughout the world. The Diavik mine is unique given that the kimberlite pipes are located under a lake. This background information provided additional context for the Panel members when evaluating PK disposal options on-site.

Diavik also presented revisions to the site-wide Closure and Reclamation Plan (CRP V4) which informed the subsequent discussions around the proposed flooding/filling of the open pits, inert waste disposal in pits and PK to underground/pit options, focusing on A418.

In addition, details on underground dewatering were highlighted in a presentation that also touched on fault systems, the water table and drill holes to manage water in the underground. These explanations provided context for individuals and aided in the discussions around potential impacts from filling pits with water, PK, waste, etc. at closure.

Finally, the TK Panel reviewed responses from Diavik to recommendations from the TK Panel Session #10 Focus on ‘Watching’ and the South Country Rock Pile. In addition, they developed new recommendations for review and consideration by Diavik, including suggestions for future TK Panel sessions. This format is the same as that of previous sessions and provides strong consistency, feedback, and communications between the TK Panel members and Diavik staff.

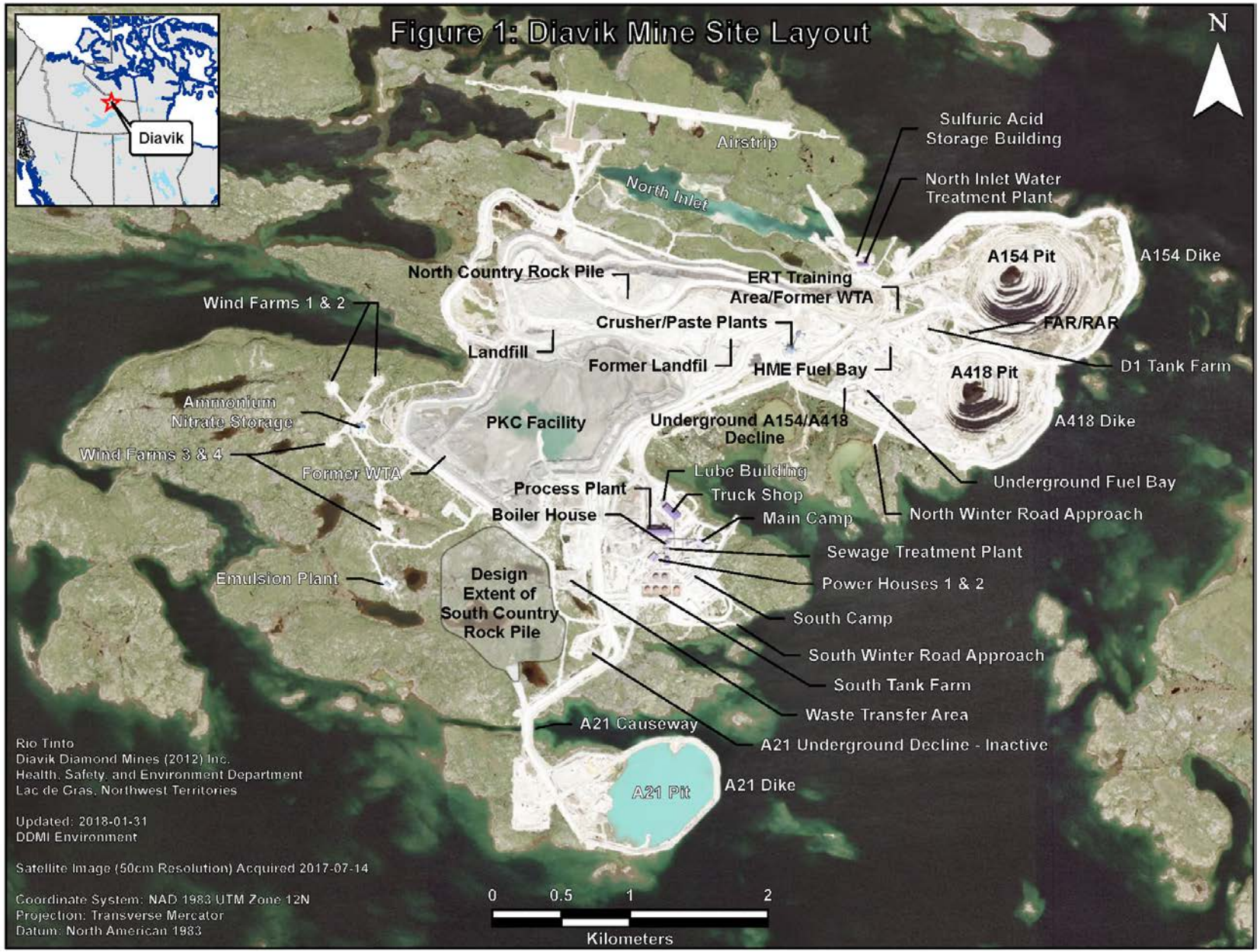


Figure 1: Diavik Mine Site Layout
N
Diavik
Airstrip
North Inlet
Sulfuric Acid Storage Building
North Inlet Water Treatment Plant
A154 Pit
A154 Dike
North Country Rock Pile
ERT Training Area/Former WTA
Wind Farms 1 & 2
Crusher/Paste Plants
FAR/RAR
Landfill
Former Landfil
HME Fuel Bay
D1 Tank Farm
A418 Pit
Ammonium Nitrate Storage
PKC Facility
Underground A154/A418 Decline
A418 Dike
Wind Farms 3 & 4
Former WTA
Lube Building
Underground Fuel Bay
Process Plant
Truck Shop
Boiler House
Main Camp
North Winter Road Approach
Sewage Treatment Plant
Emulsion Plant
Design Extent of South Country Rock Pile
Power Houses 1 & 2
South Camp
South Winter Road Approach
South Tank Farm
Waste Transfer Area
A21 Causeway
A21 Underground Decline - Inactive
A21 Pit
A21 Dike
Rio Tinto
Diavik Diamond Mines (2012) Inc.
Health, Safety, and Environment Department
Lac de Gras, Northwest Territories
Updated: 2018-01-31
DDMI Environment
Satellite Image (50cm Resolution) Acquired 2017-07-14
Coordinate System: NAD 1983 UTM Zone 12N
Projection: Transverse Mercator
Datum: North American 1983
0
0.5
1
2
Kilometers

Session Goals and Activities

The TK Panel reviews closure plans for various areas of the mine, shares their knowledge in relation to each topic, and presents recommendations to Diavik. In this way, they are continually building their understanding of the mine site and its closure challenges, while also directly influencing Diavik's closure plans.

The goals for Session #11 were to:

- Review input incorporated to date and provide an opportunity for input on progressive reclamation opportunities (i.e., North Inlet, WRSA-NCRP, PKC, infrastructure, pits and underground);
- Review options for PK disposal and provide input to the proposed plans for disposal of PK in the pits and underground;
- Visit the pit/underground at A154/A418; and
- Review and suggest future session topics for the TK Panel.

The session format followed an established routine, modified according to participant feedback and learnings over the previous ten sessions. At the outset of each session, the group reviews and approves the proposed format and agenda. An evaluation process held at the end of the session then helps to inform and improve future sessions.

As with previous sessions, participants took a brief surface tour of the mine upon arrival to re-familiarize with the site and to have recent changes to the site highlighted by Diavik. On the third day of the session, participants visited the A154 open pit and then selected to go underground or visit the process plant.

The tour of the process plant included an explanation of how the kimberlite moves through the plant, diamonds are extracted, technology automates both recovery of the diamonds and the entire process throughout the plant and safety precautions to keep workers safe. TK Panel members climbed seven stories high into the plant in order to look down at the impressive labyrinth of conveyor belts, crushers, screens, video cameras and platforms.

The tour underground began with a thorough safety briefing and gearing up for going underground. Participants tagged in with their host and learned about the tracking, communication and retrieval systems in place for workers underground. Diavik's hosts took participants to the area where the A418 underground mine connects to the open pit and they were able to see across the space where the kimberlite used to be present. They also visited an area deep in the A418 mine where backfill was being placed into a drift that had been mined out, in addition to visiting two different sump stations to see how water is managed underground. They were able to meet some of the underground employees and see firsthand the type and size of vehicles that operate underground. They travelled across one of the connecting drifts over to the

A154 mine and ultimately exited the underground into the A154 open pit before returning to the mine dry.

As in previous sessions, staff from the Environmental Monitoring Agency Board (EMAB) attended the last day in order to hear the TK Panel present their recommendations to Diavik. EMAB distributed a one-pager, inquired about how EMAB could best support the TK Panel, and asked whether it would be appropriate for EMAB staff to attend future sessions in their entirety rather than just on the final day.

Report Outline

This report outlines key themes related to PK disposal options considered by the TK Panel and presents their subsequent recommendations.

Appendix A includes photos from the session and field trip. Appendix B contains the session agenda while Appendix C provides a blank copy of the informed consent form that was signed by participants or observers new to the TK Panel. Session notes were reviewed and verified by the speakers and included in Appendix D. Appendix E contains a background presentation on PK and highlights previous recommendations related to PK and the PKC made by the TK Panel. Appendix F contains presentations given to the TK Panel by Diavik related to the CRP V4, underground dewatering, and the proposed PK to A418 water licence amendment.

The TK Panel gave their guidance and recommendations on options for PK disposal as shown in Appendix G. Diavik presents their response to TK Panel Session #10 recommendations on watching/monitoring and the South Country Rock Pile in Appendix H. A short presentation used for discussion on the next steps and session topics is included in Appendix I, followed by participant evaluations summarized in Appendix J.

Proceedings: Key Questions and Themes

The TK Panel was tasked with exploring guiding questions during this session. The original questions proposed by the facilitators as well as the general direction of the session were modified with input from the TK Panel over the course of the session. Key guiding questions included:

- What other information do you need to feel comfortable with PK material being placed in mine areas? What questions do you have that you want answered?
- Can you share your knowledge of how fish use deeper waters to help predict fish behavior in the pits once they are filled with water?
- If Diavik goes ahead with putting the PK in the pits and the mineshafts, what would you want to watch at closure to know that it is good? For example, once the pits are filled with water and before connecting back to Lac de Gras as well as once reconnected.

Throughout discussions to consider these questions, the following key observations emerged:

- Seeing A154 was important in helping the TK Panel to think about and consider the option to put PK in the mine area;
- Results presented from the PK toxicology study previously recommended by the Panel helped people feel more comfortable about various disposal options for PK in mine areas;
- Stability of the pits (cracks, fissures) and underground areas are a significant concern, particularly around the potential for water leakage;
- Contamination in the mine areas remains one of the biggest concerns, particularly around water; and
- When considering options for PK, the significance of climate change impacts must be acknowledged and part of any plan.

This session slightly differed from previous sessions in that time for plenary discussion was reduced in order to facilitate the process plant and underground tours and the technical discussions and presentations that were invaluable in providing a strong understanding for members considering underground disposal of PK.

The TK Panel made a total of 16 recommendations, as outlined above and presented in Appendix G.

The resulting recommendations centred on the following themes as detailed above and summarized below:

- Closure Planning (PKC versus Pits)—Three recommendations pertained to moving the PK and PKC slimes from the PKC into the pits.
- Fish—Three recommendations spoke directly to fish, fish habitat, and movement particularly if the pits and underground were to be filled with PK.
- Water—The quality of water in the North Inlet and the pits were highlighted in two recommendations. However, water quality was at the core of almost all of the recommendations made during this session.
- Watching (Monitoring)—With caring for and protecting the land for future generations at the forefront of people's minds, the TK Panel put forth six recommendations specific to monitoring PK.
- Wind—Two recommendations related to how wind behavior could affect water quality and overall mixing of lake waters both inside and outside the dikes.

Recommendations are numbered to reflect the TK Panel session identification (i.e., Session 11) and to subsequently identify each specific recommendation (i.e., 11.1–11.16). Diavik will consider these and add them to their Recommendations Tracking Table. Diavik's response will be presented back to the TK Panel at the next session.

1. Closure Planning

Diavik gave an overview of the updated site-wide Closure and Reclamation Plan (V4) after which Panel members spoke about their observations of change and concerns about planning for climate change during reclamation. There was also discussion about how scrap metals and materials should be sorted. Diavik responded that a demolition inventory will be created. Community members continue to want to know what materials will be left behind upon closure and what might be donated or taken off site. It was suggested that this could be the topic of a future session.

Comments around onsite monitoring were made, in particular with respect to the importance of watching wildlife and reporting types observed and their behavior. The Environment Department explained that there is ongoing monitoring of wildlife, as well as water quality as part of the AEMP and SNP programs. The TK Panel had questions around caribou safety near the pits and on roads, contaminants and nutrient loading in water, dust and mercury levels in both fish and water. The TK Panel was pleased to learn that Diavik has adopted the TK Panel recommendation to leave the wall between the North Country Rock Pile (WRSA-NCRP) and the PKC steep as a barrier to prevent wildlife from moving from the top of the pile down into the PKC area at closure.

Questions were asked around whether there were other examples of diamond mine closure in Canada, but there isn't yet and there are no other examples in the world where closure of pits in a lake has taken place. A backgrounder on diamond mine closure was presented the next day and discussions followed noting that mining practices in Canada have changed over the years such that companies can no longer simply walk away. Diavik is required to carry out closure and reclamation. As a safeguard, Diavik was required to post a multi-million dollar security deposit with the government.

In the words of one TK Panel member, specific ideas around closure were offered since "we need to help the company make the right decisions and do the best clean up and reclamation so we aren't leaving the problem for future generations."

Processed Kimberlite and Pits/Underground

Another Diavik presentation followed, detailing the possibility and logistics of putting PK into the underground and pit mine areas, starting with A418, and then possibly A154 and A21. It was acknowledged that timing is an issue in terms of filling pits given that A418 will be ready to be filled while A154 and A21 will still be in operation. Follow-up discussion provided clarification on groundwater, connectivity between underground chambers, monitoring, PK properties and more. The TK Panel weighed the options of placing PK in the PKC versus A418. Much of the session was spent exploring details around this concept which required considerations such as the size of the pit and underground voids, stability, groundwater, physical and chemical properties of PK. Specifically, the TK Panel explored the question: *What other information do*

you need to feel comfortable with PK material being places in mine areas? What questions do you have that you want answered?

The TK Panel was interested in learning about the dimensions and volume of A418 compared to the volume of PK generated for operations and closure. For A418, there is approximately 7.5 million cubic metres in the underground and when combined with the pit volume, the total is approximately 25 million cubic metres. The volume of materials presently in the PKC has not yet been calculated. The operational slurry is expected to be approximately 5 million cubic metres.

Other participants questioned whether the PK might generate heat or at least conduct heat thereby not freezing when placed in the underground/pits. Diavik confirmed that the PK does not generate heat, and that they don't expect it to freeze in the mine working areas.

The TK Panel discussed whether there was anything different that should be planned or monitored around the pit given the new proposal to put PK in the mine areas and cover it with water. The group was reminded of their recommendations to convert the road going into the pits into wildlife ramps in particular places (see Session # 6). One member suggested that there should be gentle slopes of the pits while another recounted previous discussions of the PKC where large boulders would be placed at the edge of the pond to prevent wildlife from falling or jumping in and not being able to get out and wondered if the same should be applied at the dike. The TK Panel generally agreed that the wildlife ramps would remain and that the break in the 1 km cliff on A418 was still important. Further discussion may be required to provide additional clarification or direction.

Panel members weighed the options of disposing PK into the PKC versus the pits/underground, considering the potential effects on wildlife, fish and the environment. As discussed during previous sessions, Diavik reminded the Panelists that a concern about the PKC are the slimes that form a consistency like toothpaste and can be harmful to wildlife or people that may get stuck in it owing to its physical properties. After much consideration, the TK Panel put forth the following recommendations:

- 11.1 If the PK goes to the mine area, the TK Panel recommends that all of the PKC slimes also be put into the pits. There is interest in moving as much of the slimes as possible from the PKC into the mine area and away from the surface where wildlife might gain access.
- 11.2 If Diavik moves ahead with putting PKC slimes into the mine areas, the Panel requests to review any changes to the PKC closure plan. For example, if it is not possible to move all of the slimes in the PKC to the mine area and some of the slimes remain in the PKC, the TK Panel may recommend that the PKC is topped with large boulders to discourage wildlife and people from entering.
- 11.3 The beach materials and rough kimberlite should stay in the PKC area (i.e., anything that can support a rock cover).

2. Fish and Water

Discussions around fish were guided by the question: *Can you share your knowledge of how fish use deeper waters to help predict fish behavior in the pits once they are filled with water?*

Panelists were particularly interested in knowing whether PK would affect fish and water, and expressed significant concern that fish might ingest PK or that PK may affect fish gills. The differences between the types of PK were reviewed (e.g., slimes, fines, coarse), and Diavik presented results from the PK toxicology study that found that PK does not contaminate water or chemically harm fish.

Panel members advised Diavik that sunlight doesn't penetrate to deep water so that fish generally remain in water where nutrients can grow, where the pressure is not too great and where oxygen is plentiful. Panelists expressed concern that the PK could create a "dead" lake given that PK does not support much growth.

When considering filling the underground and pit with PK, Diavik is interesting in learning from the Panel how far from the surface of the water the PK should be filled, if that option is preferred and approved. The Panel discussed at length what this level might be and did not come to a consensus. However, they talked about setting nets 6–7 metres deep since that is where fish can be found. One panel member said that they have set nets 12–14 metres deep on an extremely hot day. One suggestion was to make sure PK was at least 30 metres below the surface of the water, as this is deep enough and fish will not go that deep without a food source to attract them. However, the Inuit contingent suggested that fish can go much deeper, up to roughly 100 metres, which may be a regional difference.

Another suggestion was to spread the PK into each of the three pits rather than filling only one pit, or one pit followed by another. This approach would mean that the PK would not be as deep in each pit in case fish wanted to go into extremely deep water. One suggestion from the women's breakout group was to put PK from operations into the mine areas first and then PK from the PKC afterwards into another pit. Most TK Panel members expressed concern about PK coming in contact with aquatic life. However, if it is decided that PK will be put in the underground/pits, then it was recommended that the PK from the PKC also go underground. In general, the idea that all PK slimes should be removed from the PKC was supported if it is decided that PK will go into the underground/pit.

The TK Panel discussed ways to make the lake bottom more hospitable to fish if the pits were filled with PK. The suggestions to add sediment, sand or rocks/pebbles were made but it was explained that these would just sink into the PK slimes.

The TK Panel recognizes the importance of water to life. The TK Panel questioned whether PK might affect water quality. Discussions centred around how PK may affect fish and how PK in the pits might create a dead lake given that PK does not support much growth. These same

concerns have been expressed in previous sessions and prompted Diavik to fund a toxicological study. Once new participants at the session were informed of the results of these studies, the issue was less of a concern.

Questions around fish (e.g. minnows) returning to the pits once the dikes are breached were also asked. The closure plan is for water to flow freely back and forth from inside the dike areas and within Lac de Gras.

Following much discussion and weighing options with fish in mind, the TK Panel put forth the following:

- 11.4 TK holders know that fish generally go where there is food (nutrients) and oxygen so they are unlikely to go to the depth where PK would be.
- 11.5 The Panel would like additional scientific research to see what the effects of PK (ingestion) might be on fish specific to Lac de Gras.
- 11.6 If PK were to go in any mine area, the Panel requests an opportunity to learn more about the depth of water for fish habitat to cover PK (TK and western science).

3. Watching PK

Building on recommendations expressed at TK Panel Session #10, the TK Panel discussed watching (monitoring) requirements for PK whether in the PKC or pits/underground guided by the following question: *If Diavik goes ahead with putting the PK in the pits and the mineshafts, what would you want to watch at closure to know that it is good? For example, once the pits are filled with water and before connecting back to Lac de Gras as well as once reconnected.*

The TK Panel discussed ways of minimizing the suspension of PK once it is put in the underground/pit ranging from installing screens to covering pit walls to adding soil, sediment or aquatic vegetation to try to stabilize the lake bottom. The TK Panel suggested that the PK should be monitored for a time before the dikes are breached to ensure the PK is as expected.

The TK Panel put forth the following recommendations related to watching / monitoring:

- 11.9 The TK Panel recommends that their members are present for at least some of the time when the slimes are moved from the PKC into the A418.
- 11.10 The TK Panel wants to monitor how water behaves when placed on PK. They would like to see the PK and water in the A418 as soon as it is safe to do so and when there is a good visual of the material, as well as at regular intervals afterwards.
- 11.11 The TK Panel recommends that they monitor the fish habitat within the pits, shoreline modifications (e.g., ramps) for wildlife as well as the stability of the dikes on a regular and ongoing basis.

- 11.12 The TK Panel recommends that they monitor freeze-up and break-up within the contained areas (i.e., within the dikes) to see if the formation and melting is any different—with a view towards safety for people and wildlife.
- 11.13 The TK Panel would like to see the PK vegetation plots again.
- 11.14 The TK Panel recommends that we test slimes/PK in a fish tank to see if any water plants would grow on the PK.

4. Wind

Concerns were expressed about the effects of wind on the pit areas at closure, particularly nowadays with climate change and winds becoming stronger. If PK were stored below the water and the pit areas were connected back to Lac de Gras, they want to be sure that the PK would not be stirred up by the movement of the water on windy days. People expressed interest in better understanding wind patterns in and around the contained pits/dikes both now and when they are filled with water as well as in Lac de Gras over a period of time (e.g., throughout all seasons). There were discussions around how wind could affect water movement and mixing, for example, after the pits were closed. Some participants expressed concern that churning waters might mix the slimes. It was discussed that wind can travel across a big lake but some people thought that the dike would protect the filled pits from these big winds. Some participants thought that wind might pose a problem whereas other members expected that the wind wouldn't be much of a problem given the height of the dike walls. The TK Panel decided that they needed to have a clearer understanding of the prevailing winds to understand the potential impact of wind on the pits at closure. One member commented on how the weight of the water above the lake bottom of the pit once it is refilled would be so heavy that there would not be much sediment mixing regardless of the wind.

- 11.15 The TK Panel would like to see wind behaviour on water within the contained pits/dikes over a period of time (i.e. throughout all seasons).
- 11.16 The TK Panel would like to see wind behaviour on Lac de Gras in and around the dikes. [How is the water on the outside of the dikes and breach areas affected by wind?]

5. Tours of the Underground, Pits and Processing Plant

On the third day of the session, TK Panel members first went on a tour to the A154 pit together and then people divided and went either on a tour of the underground or the process plant. The group pit tour included a drive along the dikes of A418 and A154 with an extended stop at the viewing trailer in the pit of A154. From this station, people could visualize the "ice cream cone/carrot" and "ice cream" analogy they had been discussing when considering the PK to pit/underground options (i.e., the cone/carrot is the underground and the ice cream is the open pit). People observed the rock faces and got a sense of the scale of the operations. While driving along the dikes, TK Panel members were able to revisit the areas slated for special fish habitat

construction (e.g., shoals and reefs discussed in Session 8) as well as viewing the areas where the dike will be breached upon closure.

There were five Panel members plus two facilitators that took a tour of the underground mining areas at A418 and A154 led by Peter Gillies and Steve Rowles from Diavik. People commented on water seepage, water in the underground, the grouting process that Diavik uses to mitigate water flowing and the extensive network of sumps, pumps and piping systems to move water to the surface (i.e., North Inlet) from the underground. Some people talked about the feeling that it was a wet environment deep in the underground while others talked of it being cold and dry higher up in the pit. People were happy to see some kimberlite as well as garnets and to learn more about the dust suppression (water sprayed in dry areas) so that silica is not inhaled. Everybody who went on the tour commented on how it helped them better understand or visualize what filling up the underground and pit might look like upon closure. Some members talked about the sensors underground that monitor any movement. One member commented on how it seemed to dispel a lot of fears on what could happen underground and that containment of the PK underground would be the best approach. There was also recognition of the strong safety protocols in place.

The group that viewed the process plant commented on the complex conveyor belts and multiple sorting screens. One participant was concerned about the dust within the plant, particularly for employees breathing in fine material, while another suggested that it was less dusty than any other mines he had visited. People spoke of the various screens filtering different sizes of kimberlite and holding PK in their hands to feel the consistency.

TK Panel Next Steps

During each TK Panel session, participants typically re-visit the list of session topics carried out to date and those suggested for the future (Appendix I). During this session, the TK Panel reviewed the list of potential future TK Panel topics:

- Watching / monitoring at Closure
- Updates on PKC closure options
- North Inlet – fish and water health
- Closure Details: building demolition, metal disposal, waste disposal, contaminants, laydown areas, airports, roads, etc.
- Closure Inspection Criteria
- 2018 Aquatic Effects Monitoring Program (AEMP) TK Camp

Further to the EMAB presentation, another topic was to look at how the TK Panel functions and possibly conducting a more thorough review of the recommendations to date. EMAB's presentation also revisited the idea of hosting a women's panel on vegetation. In reviewing the possible future topics list, the following questions were asked: *Are there any questions on these topics? Did we miss anything? Are any not important? Do any of them stand out as a priority?* The TK Panel members reviewed each possible topic and raised their hands in support of all of them.

Other general discussions included the suggestion that both a male and female youth from each group could attend future sessions and to hold the TK Panel meetings during times when the youth are off school. One participant suggested that the next Aquatic Effects Monitoring Program (AEMP) contain a focus on rivers so that people can look at the rivers draining into Lac de Gras. During the session, it was suggested there be a colour code applied to the Recommendations Tracking Table to show which ones have been accepted, in-progress or rejected.

In conclusion, the following recommendations were put forth:

- 11.7 The TK Panel recommends a future TK Panel session dedicated to the health of the North Inlet upon closure and to decide if there is anything to address with the sediments.
- 11.8 The Panel requests that Diavik provide a list of items/equipment that will remain and be removed from underground before flooding or filling the mine with PK/water.

Appendix A

TK Panel Session #11 Photos

Throughout the sessions, caribou gathered outside the sleeping quarters.

Front: Peter Huskey

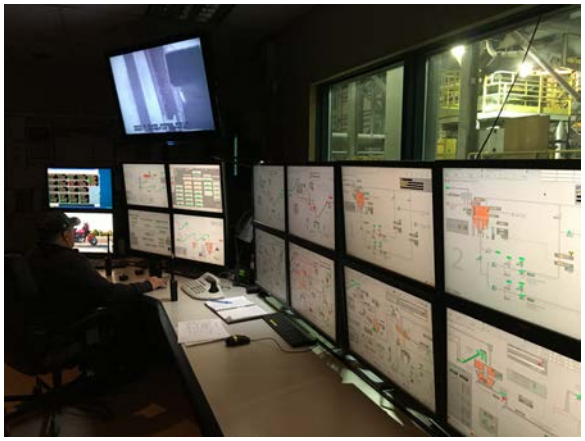
Middle (L to R): Colleen English, Terri Enzoe, Kathy Arden, Nancy Kadlun, Dora Migwi, Joline Huskey, Bobby Algona, Natasha Thorpe, Angus Martin

Rear (L to R): Rose McKenzie, Joanne Barnaby, Louis Zoe, Regan Adjun, James Rabesca, Mason Beaverho, Wayne Langenhan

Processing Plant Tour

Conveyor belts move crushed rock.

Inside the plant. Note the large covered square pipe on the right where mined rock enters the plant.



Cameras and sensors make for an efficient, automated and safe process.

Mason inspects a piece of kimberlite.

Processed kimberlite ready to go to the processed kimberlite containment.

Multiple screens separate out crushed rock.

Underground Tour

Photo by Regan Adjun

Preparing to enter the underground.

Photo by Colleen English

The group learns about diamond mining underground.

Photo by Colleen English

The group views kimberlite.

Photo by Colleen English

TK Panel members underground.

Photo by Regan Adjun

Managing water in the underground.

Photo by Regan Adjun

Driving underground. Note the green lights indicate where the location on the winding road underground.

Photo by Regan Adjun
Common sightings underground.

Photo by Regan Adjun
Looking out of the underground and into the pit.

Viewing A154

Peter Huskey walks with Dora Migwi.

Dora Migwi and Regan Adjun.

View into A154. Note road into pit.

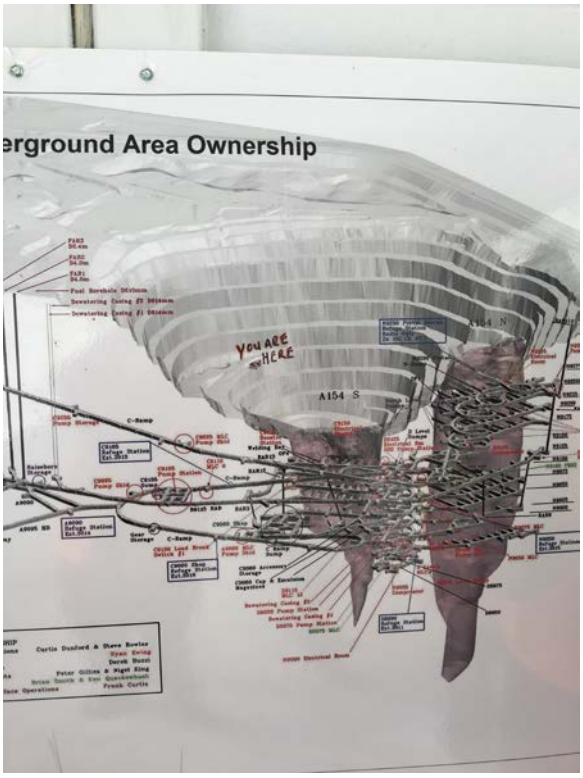
Colleen English points out key features.

Kathy Arden and Rose McKenzie.

Angus Martin And Wayne Langenhan.

TK Panel in the viewing container.

Natasha Thorpe and Nancy Kadlun.



"You are Here" located the viewing container.

Note:
All photos Natasha Thorpe unless otherwise indicated

Appendix B

TK Panel Session #11 Agenda

Final Agenda

Diavik Diamond Mines Inc.
Traditional Knowledge Panel
Session #11: Options for Processed Kimberlite (PK)
May 10–14, 2018

Thursday, May 10

3:00 pm	Arrive onsite - quick surface tour en route to camp (~1.5 hr) Security, Orientation & camp tour (~1 hr) Saturday Tour Preference Discussion Rooms & Luggage assistance

Friday, May 11

8:30 am	Opening Prayer, Welcome, Round Table Introductions, Review Draft Agenda, Workshop Purpose Overview
9:00 am	Presentation: Site overview, Closure and Reclamation Plan, community engagement, Responses to previous session recommendations
	Group Discussion
10:40 am	Presentation: Processed Kimberlite to A418
	Question 1: What other information do you need to feel comfortable with PK material being placed in mine areas?
11:30 am	Lunch
12:30 pm	Group Discussion
	Presentation: Review of TK Panel Discussions of Processed Kimberlite
	Question 2: Can you share your knowledge of how fish use deeper waters to help predict fish behaviour in the pits once they are filled with water?
	Break-Out Discussion
	Report to Plenary
4:30 pm	Close

Saturday, May 12

8:30 am	Presentation: Summary of TK Panel Recommendations Related to PK
10:30 am	Surface Tour (A154) and Underground or Process Plant Tours
4:30 pm	Close

Sunday, May 13

9:30 am	Opening
9:45 am	Debrief from Site Tour
	Plenary or Break Out Group Discussion
	Question 3: If Diavik goes ahead with putting the PK in the pits and mine shafts, what would you want to watch at closure to know that it is good?
11:30 am	Lunch
12:30 pm	Plenary or Break-Out Group Discussion
3:30 pm	Next Steps / Next Sessions, AEMP Camp, EMAB request
4:30 pm	Close

Monday, May 14

7:30 am	Bags & belongings out of rooms, store under stairs in lobby
8:30 am	Opening
8:35 am	Facilitators present draft of TK Panel recommendations for discussion
	Group Discussion: Finalize recommendations
11:20 am	Next Steps/Next Session Group Discussion
11:40 pm	TK Panel Presentation to Diavik: TK Panel recommendations,
	Diavik Response and Group Discussion
12:40 pm	Closing Circle and Prayer
1:00 pm	Lunch
3:00 pm	Check out for return flight

Note: Frequent breaks will be scheduled throughout the day, as needed. Each day will close at 4:30 pm.

Appendix C

TK Panel Session #11 Informed Consent Form

Diavik Diamond Mines Inc. Traditional Knowledge Panel

Informed Consent Form

I, _____ _____on May 11, 2018 give permission for Diavik Diamond Mines (2012) Inc. and its Contractors (i.e., Thorpe Consulting Services, Joanne Barnaby Consulting, PIDO Productions) to take notes, photographs and / or audio and video recordings related to my participation in meetings, workshops and events related to the Traditional Knowledge Panel established for the Diavik Diamond Mine. I understand that my participation includes meetings and workshops held throughout each year either in communities in the NWT or NU or at the Diavik Diamond Mine.

Through my signature below, I understand that:

1. I consent to have my words, activities and responses regarding and related to my knowledge recorded on maps, in notes and photographs, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data);
2. I am free to choose not to respond to any questions asked or participate in any discussions without prejudice or penalty;
3. I can choose to be anonymous in my participation without penalty;
4. My representative Aboriginal Organization, DDMI and / or its contractors may use the information collected to contribute to operations and closure planning at the Diavik Diamond Mine;
5. DDMI and its contractors may share my information which I have verified and given permission to share in either reports and/or photographs and provide such information to my Aboriginal organization and other regulators:
6. I agree that my contributions may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the TK Panel and that my representative Aboriginal organization, DDMI and/or its contractors will make all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

7. I will receive financial compensation for my participation in accordance with DDMI policy;
8. I am free to request that any information I share is removed, erased or deleted and that I will have the opportunity to verify draft video-documentaries, reports and maps to make edits before I sign them off and that final copies will be provided to me;
9. I also understand that DDMI cannot ensure the protection of the Traditional Knowledge from public release once the reports are released (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites);
10. The Traditional Knowledge Data will be summarized and included in a report which will be publicly available.

Signed on May 11, 2018 in Diavik, Northwest Territories.

Signatures:

_____	_____
Participant	Aboriginal Organization
_____	_____
Diavik Diamond Mines Inc.	Witness / Contractor

Appendix D

TK Panel Session #11 Daily Notes

TKP Diavik Friday, May 11th 2018

KEY:

Kitikmeot Inuit Association;

BA- Bobby Algona

NK- Nancy Kadlun

RA- Regan Adjun

Łutselk'e Dene First Nation;

CSB- (Sara) Cecilia Sarazine Boucher

DTE- (Terri) Doris Therese Enzoe

KE- Kohlman Enzoe

North Slave Métis Association;

WL- Wayne Langenhan

KA- Kathy Arden

Tłı̨chǫ Government;

LZ- Louis Zoe

DM- Doris Migwi

MB- Mason Beaverho

PH- Peter Huskey

JH- Joline Huskey

JR- James Rabesca

Yellowknives Dene First Nation;

AM- Angus Martin

RM-Rose Mackenzie

THORPE;

JB- Joanne Barnaby

NT- Natasha Thorpe

DIAVIK;

CE- Colleen English

SS- Shelby Skinner

Elder Opening statement prayer

DM: Thank you for giving me the opportunity to say the opening prayer this morning, due to the fact that we are becoming elders have made us hard of hearing but prayer is still important. Since we met last year and it has been good to see all the changes taking place the only thing we see kind of different is that some people that used to participate aren't here with us today and it's important to remember them in our prayers. It has been nice to see the new faces participating here in their place especially the youth. The momentum is always with us and growing, the main importance is the future and the future generations and it is great to see the youth and the elders working together we know the history of the land and it's important to be participating with the industry and that the government supports us to advise them in this capacity. We bring our history to the industry and to our youth and hope that our experiences can teach them and help guide them to their destiny. These are important experiences. On Monday we have the elders gathering with our youth in Behchoko to discuss what the future looks like for us all, elders, youth, and our relationships with the government and industry. We are working hard at getting language workshops to make sure we help our youth keep their language, they aren't keeping it as much as they should so elders are training more with them to understand their language and keep the language strong. We came a long way from the Tłı̨chǫ region, we see representation from all over the north, we are all one nation, it is good to see we all share the revenue coming off the land, we all live off of and how we share the animals and resources the land provides us so it is important we thank the creator and ask him to give us a future and good relationships. As I age I have difficulty walking but at least I made it this far and I am so grateful to be here. *Prayer*

PRESENTATION: Site overview, Closure and Reclamation Plan, community engagement, response to previous session recommendations ONLY QUESTIONS TRANSCRIBED, SEE ATTACHED MATERIALS

CSB: Where did they drain the water from A21?

CE: A good part of is goes back into LDG, so they set up a pumping system that runs from the pond over the dyke and back into the lake. That whole area is fished it out before they start doing any of that so they take the fish and put them back into LDG as well, then they pump that water directly over. They have numbers they have to meet from the water license and the inspector is up here all the time to make sure they keep the water quality within that range so they are testing it all the time. At some point, the water quality starts to go down because the pumps are low and you get that turbulent water and a bit of sediments in it. When that starts happening, when they start approaching those number, they turn off those pumps to the lake and then all of that water gets pumped to the North Inlet. It goes into the North Inlet, settles out, goes through the treatment plant and then gets put back to LDG so they split how they pump the water out of there. And then there is still water in the open pits and in the underground when they are mining and so they have little pools at the bottom or in certain areas and pumps and piping systems that also keep putting that water into the North Inlet so that it settles and gets treated to go back to LDG.

CSB: Do they have pipes from that pond to the inlet where they are going to bring that water to?

CE: Yes, they have a whole pumping system, a big pipeline system that runs from underground and the open pits. *continued with slide*. So, at closure in these areas the plan is to go in reverse direction and take the water from LDG while those dykes are still fully intact, pump it back into the open pits before that there would be some of the fish habitat that we talked about, reefs established at the edges of these pits, the water would be pumped back in and then it would sit so we have the opportunity to test it while it is still separated from LDG and make sure that everything is okay. And then there would be cuts/breaches made at certain points in the dyke to reconnect it back to LDG. A lot of this dyke system that you see would still stay at closure but there would be some passageways for boats and water to be able to flow back and forth between LDG and that area and for people to be able to move back and forth as well.

CSB: So what you are saying is that the dyke is going to be there and there are also going to be cuts in the dykes where things can pass, but they are not dismantling the whole thing?

CE: Yes that's correct. They are not dismantling the whole thing.

DTE: That's underground right? But when it is closure time you are going to fill it up with water, the mine (Diavik) is I mean, I'm not talking for today but talking for the future, we have an underground mine on those two (pits) and we know we have climate change, do they think it is going to stay like that? Because I watch things and I go out on the land all the time and I have seen lots of changes since I was young. I may look young but I am 60 years old and I have seen lots of changes so for me the way I think and the way the mine thinks are not the same, one day that thing is going to fall right down on the tunnels right where they go underground. I am only speaking for the future of my grandchildren and my community because we live close to here. As soon as I see this picture- it is on my mind, I don't know how the other groups feel, but this is only for me, the way I see it, but we go hunting on this side of the land and how about the fish? We live off the fish and the caribou so it's kind of like something is not right for me. Just to let you know.

CE: It's good to be thinking of those things and it's good to have those concerns and I don't think you are alone in those concerns by any stretch of the imagination, So all of the kind of closure planning and I know Bobby and a few other people here have spoken about the concerns around the climate changing and things changing and whether this is enough whether it's good enough to last that long when you are talking about the mine company no longer being here and this just being on the land and people using the land after they are gone. This is coming at it in a totally scientific approach but they do a lot of work to predict into the future and there are scientists looking into climate change and they are looking at what the expected differences are between now and a couple hundred years into the future and they use that information when they are designing the closure plans for these structures. So when we speak about the rock pile, getting a cover on it and trying to keep a frozen layer when we talk about things warming up, that has a bunch of extra kind of material built into it in order to account for those changes that may be coming in terms of warming and that type of thing. Structurally they do the same thing between engineering designs when you are talking about dykes, dams and filling these with water, I think you would get, just from your experience, I think in terms of pressure and the incredible pressure that water has and the ability to hold, so when all of those voids are filled with water, and possibly other material which we will talk about, it creates an enormous support structure basically for those back filled areas; voids underground. Plus, there is some backfilling we were talking about where at the backfill plant when they will fill some of those holes, so it is designed to be stable and secure over the long term. I get that you are still concerned and that is a fair statement, but they are working towards the assumption of climate change when they are making all of these plans.

DTE: When I was young my grandfather told me "way down the road things will change" and he is no longer with me, he has been gone for a long time (1973) he said "things are not going to be the same" and he pointed on this side of the land and said there is a lot of money and now I understand, for me it seems like I have a hard time dealing with this, you know when you open old stuff (the mine) –it is not healthy anymore (the land). And they keep telling me that things will be back to the same way- and it is not going to. It's hard for me to believe it and when they come to my community I make sure I sit and speak for my community. I have a hard time with this, I've been going to all these mines and workshops this is not my first time, I've been here more than 500 times and I keep seeing the same things. Maybe it goes into one ear and pops out the other one I don't know. Whatever I feel, I am going to say because I am only here as an alternate for Celine Marlowe, maybe this is the only time I might be here, but I am speaking for the young people and the future of the young people. We see lots of elders in our community that talk about things like that, they are no longer here for the next generation and then after that there is another one so we have to speak for them and I think that is one reason I was selected to be here; to sit in your workshop, but still I disagree with things, I guess it is not only me.

CE: Thank you for your comments, they are not falling on deaf ears, I think there are a lot of people who share the same opinions, and development is harder for some people than it is for others, some people don't like development at all and other people are ok with it. If you have development in your backyard, in my personal opinion no company should be telling you that it will be going back to what it was before, because it's not, so when you say yes to mining there is going to be a change in that area, what you want to do is control that change and be comfortable with that change you cannot magically take this land and turn it back to what is was before. *return to presentation*.

BA: With all the loose gravel here on the slopes, would it be possible to pack that down as you put more gravel into it, use a packing machine or something like that because in the future, you know, that is loose soil, the caribou are going to wear it down and water and rain will wear it away, and wash away that loose gravel that you guys have just pushed in. Can they pack it down hard so it won't wash away? So as they put gravel on it they keep packing and packing so that as hard as possible so the water and caribou don't wash away the gravel and expose the rock that is covered?

CE: We have to remember there is still more work to be done here, so this is just the re-sloping and the "cover" is going on top of this. So you will have the till materials, like the lake bottom material, that will be on top of this and then rock. So the final rock will look like the test pile you guys were on, it is broken up but it is smoother and not as fine of a material as this is so it will happen it is just going to be a bit of time before we get there. They are moving over it with the dozers and everything that compacts it down as we move the material over this re slope area. So, patience. *return to presentation*

DTE: Where is your landfill?

CE: It is in the North Country Rock Pile.

DTE: I know that they are not going to take everything out the way the brought it in.

CE: No, that's right.

DTE: They are going to bury it.

CE: Yes.

DTE: I ask so many questions about stuff like that, even metals and whatever they don't need they are going to bury it, now its climate change again, and it is going to leak out somewhere down the road and down the future. And after the mine closes how long will they be there to go and watch anything that has changed? Fish are important, and the water is important, you know, if they destroy our water, we live off water and water is important to our people and people all over the world and even fish. I keep asking the same questions, but I never get an answer. You know the Elders at home, they are like professors, they have the knowledge and some of them see in the future of the things that are changing today and they tell us. And we are going to see changes for the young people that are growing and we speak for them but even though they hear our voice and our concern, it feels like we are hitting a brick wall and we are not going anywhere, speaking things over and over again, that even bothers me. Masi Cho

CE: So, the land fill is in the rock pile, it is approved for "inert material" meaning it has to be clean and neutral but it does include metal, so the metal can be buried in the landfill. Then there is a cover system, but it is very similar to a community landfill or a city landfill where you kind of stack your materials and push them in and then you have to build in cover layers every so often. And in the end, that rock pile will have a cover system that will go on top of it. So, it has a big layer of till, and a bunch more rock that goes on top to encapsulate that whole area. There are 4 meters of cover going on top of everything else. And then there is a whole system of collection ponds that are around the whole north country rock pile, Bobby calls it 'the moat around the castle' that collect any of that seepage or the water that comes out of the pile or off of the pile. So, water that

comes off of it like rain water or melting runs off the surface it is captured in those ponds. During operations, all of that is pumped to the treatment plant. When we talk closure, those ponds will still exist, they will be reconnected back to the tundra and a lot of people have talked about the tundra's ability to filter and clean the water as it finds its way back to LDG.

DTE: So everything around that area is all captured?

CE: Yes.

DTE: For some reason, I don't believe it.

CE: That is your call.

WL: I am not really satisfied with the definitions they come up with, I think it is too broad of a definition to say there is going to be metal piled in there on a scrap heap and whatever because you've got stainless steel, you've got aluminum which lasts thousands of years. I think a lot of this stuff should just be freighted out unless its regular old cold roll steel, it will rust away with time but even in this country it will last hundreds of years because of the water, we are not really a wet land we are very dry. I think it should be broken down exactly which metals are going into the scrap heap out of all these buildings, like what about the insulation with the glass and everything in it. Everything is just too broad of a definition here and what we need from the mine is it has got to be broken down into certain sections and those sections again have to broke down a bit.

CE: Thanks for that, part of that is probably me, so I am speaking pretty generally, I am not an expert on this by any stretch of the imagination they have worked on an updated building inventory that breaks down some of that information that you are interested in, I know the panel has requested a session on this to dive into a bit more detail around you know what are the plans for the buildings and what the metals look like so I think I this is one to park because in no way can I really speak to that. It is a good one to work towards and identify, they have pushed off (demolition) and originally, they kind of wanted to demolish everything pretty quick and just have some core buildings but they have since decided that probably not smart because they might miss something so they have pushed off demolition until later in the closure cycle so there is still quite a bit of time to work through some of those concerns or questions around what materials go where and how to salvage. I would suggest parking that one for a future discussion, but good point. *return to presentation*

CSB: There's no fish in the inlet right?

CE: No, so that was fished out as well after they cut it out from LDG.

DTE: After it was closed, most of the water that is drained off ground and underground goes into that, right? So are they going to clean that water and put it back (into the inlet) first?

CE: Yes, so everything would be drained, that whole pond would be drained and cleaned. The treatment plant would not be going anywhere for a while so they would still be using that treatment plant to clean and make sure that the water is as clean as possible at closure. It would all be cycled out of there but the sediments would remain.

DTE: But maybe it is not healthy or anything? For me they should just leave it like that. Because if you open it up, the water is going to move around and the fish are still going to go there even though we say the fish are not.

CE: Well it would still have the dyke that would block fish from going in there so they could not get through the rock wall that is there, water could still get through, but the fish could not. That wall would stay but it would only be able to let water trickle back and forth between. Right now, it is cut off with those thermo-syphons that we saw yesterday, but they would remove those so water flows but fish still can't get through. In terms of the North Inlet recommendations, people wanted more time to consider whether or not that would be a 'no go' zone for wildlife or if wildlife would be encouraged to use that area. The land around the North Inlet is where we get tons of grizzly bears, ground squirrels, caribou, it is a pretty nice little lush area so the land around the North Inlet gets used a lot. This Panel has so far suggested not reconnecting the Northern Inlet to LDG, unless the sediments and water quality were the same as the lake. They have followed this advice in the latest version of the reclamation plan that was submitted where water can flow back and forth and not the sediments or the fish.

BA: The dyke, it is narrow and it is not really hundreds of feet wide and it has freezers in there, and once you take those freezers out, it is going to start melting again and when you say fish cannot get in there- we have fish that are microbes right to the largest fish, and fish start as microbes, they will go from the tiny to the big. They start small and will get through with the swells. They will be pushing in and out all the time, big fish might not but there are ones that will get through. Every single one of them depend on each other for food and once you breach that it will seep out too anyways and the contaminants will get into LDG. That is what I see anyway.

CE: There are the tiny little organisms that float around in the water column. Algae and little zooplankton and little bugs that live in that water column. Those types of things can absolutely move between the partial dyke if you will, limited breach, those types of things can move and can also help water quality, it would be the big fish that feed on the bottom that we would want to keep out and prevent from coming into the area. So not the little microbes, those types of things would be able to connect back and forth. *return to presentation*

CSB: Is the kimberlite you just showed us, is that crushed or is that natural?

CE: It is a natural rock, but it is crushed it comes out of the process plant; it is a really soft rock though so it crushes quite easily.

CSB: I want to ask a question about that lake you showed us here previously. There are a lot of animals such as birds and squirrels around that lake, what I'm thinking is that if that lake is contaminated now- animals go to the lake to drink water, is there any monitoring to see if the animals are drinking the water and how healthy are they at this point? Because it has been there for quite a while. Because there are some people that have found dead animals on the tundra it could be unnatural but could it be from the water here? The caribou are back hanging around this area, as people we aren't even allowed to walk around the ground here- what about the animals? When they get too close to the mine, there should be a way- If it is not safe for humans, it is not safe for animals either. And we live off the animals, especially the caribou. Is this healthy for them? Are they going to be as healthy as when the mine started? These are the things we come to see and as an elder with TK, I have to say something about it, it is for the safety of our people that live off the caribou and bears and we use bears for our medicine too so this is a concern to me.

CE: So when animals are on the site there are a few different things that are done. If the animals are in a place that could cause danger; so if there is an incoming flight or in the north inlet area or on the landing strip, or if they are on heading up the road towards the PKC, then the environment staff do herding events to move the animals away from those areas to make sure they are not at risk. This whole area too as you can see there is a lot of access to LDG water as well. In my years here I sat and watched a lot of grizzly bears in that area and they weren't ever using the pond, some of them would swim across the pond but that is really all we have seen for animals using the water in that area.

CSB: Well no one would know they are not monitoring it.

CE: They do monitor for wildlife on site and that is why people are sitting there watching for them.

CSB: You have to know the behaviour of the animals, and I know most of the animals go out at night and rarely in daytime, that is when they are hunting.

CE: They do behavioural observations of caribou groups as well that are in or around the areas of the mine. Staff here does not do anything with the dead animals that are found on the mine site but the GNWT (Government of the Northwest Territory) are responsible for that. So, if there is ever an animal that is found dead on the mine site then the GNWT is notified and they will either take the carcass or give direction on what to do with that animal.

CSB: I have seen them taken by the GNWT, I don't know which one it was, but we still have not heard anything from them yet. I had a question for them on that too and nobody seemed to know what happened to them.

CE: I am not sure.

KA: I believe at one of our sessions, maybe 2 sessions ago when we were talking about the North Inlet and contamination, I had asked the question if the water was contaminated. The answer that came back was saying that it was not so much the water being contaminated because it settles, that it is the sediments at the bottom that contain the hydrocarbons and the contaminants. So to drink the water, the question was asked if they would drink the water from that? Would you be willing to give it a try? And they said they would because it is not the water that is contaminated it is just the sediments. Going to the breaching, and Bobby's question about the microorganisms and what not, I was thinking about minnows, a lot of time they swim on the surface because it is nice and warm, and the possibility of them coming through because the water will be going in and out from the lake so if we get some minnows growing they will be feeding from the bottom if there is good growth there. What would happen if that happens? Would they test the fish that end up going and living in there?

CE: Slimy sculpins are little fish, about minnow size, and they are the fish that is studied a lot here because they are localized - they spend their time in one area so those would probably be the species used to test the North Inlet area if they did see small fish moving into that area. And you can do metal analysis on their bodies and all of that stuff. Currently they take sculpin from this area *slide* where the water is discharged back into LDG- they take them from a lot of other areas as well, but this one goes directly to LDG and is a major focus area and those same fish are what we would see because it is a zone small enough for them to use.

JH: When you are talking about reclamation of the site, do you have any samples where mining has been done and reclaimed so we can just see if it is working, maybe in a climate similar to this or another diamond mine, or is this the first of its kind here in the world?

CE: I would have to look around a little bit more and as all of you know, there is a horrible history associated with mining, and it is that they do not close- they walk away and they have not done the right work. Especially up here it would be challenging to find an example, let me think on that one a bit more and maybe even the later years of Con may be a good one to pull out some information from. So let me think on that one.

CSB: So as far as you know this is the first time they are reclaiming the land? Has it been done in the south where all the mining industry, especially for diamonds where they never reclaim the land? Do they just leave a lot of chaos?

CE: These are the first diamond mines in Canada. Diamond mines are a good mine relatively speaking, when you talk about metal mining or anything like that you get way worse water quality issues, way worse acid rock drainage off of waste rock and that type of thing, so we are pretty fortunate in the type of mine that we have and the type of effects that we see. But there are mines that have closed and have done it properly and sometimes it is much later and it becomes a government site like we see at giant or other areas, and sometimes it is the company doing progressive reclamation. I do know one mine in the Yukon that is in temporary shutdown right now but they were doing a lot of progressive reclamation so doing the reclamation as they went, covering old rock piles and they were seeding and putting vegetation in certain areas and some of that depends on how the mines life progresses and how it is staged, if they know they are done with one area then you can close it while you are still working in other areas. And that is exactly what is happening with the NCRP right now so that is an opportunity to start closing an area of the mine that is no longer needed while operations are still going on to ensure that that work is done before it closes. There are examples, it is getting better. Certainly, back in the day when there was very little environmental regulation and companies didn't really have to put security deposits down, that type of thing was more common, where companies just folded, left and left everything in their wake. Even if Diavik went bankrupt and had to leave this site tomorrow they have a 1.2 billion dollar security deposit that is sitting there for the government to use to close the mine, so there is comfort in that as well.

LZ: Reclamation is a very good question for us because we had a bad experience with Colomac Mines and Ray Rock Mines. There is some reclamation that has been done and it is not 100% clear in our minds. The mine that was in operation in our area did not run for as long as this one did and the area of concern was not as big as this one either- none the less the damage was huge in the area around the uranium mine. Although they did a really good reclamation of the Colomac mine site, we still are not 100% sure about the seepage to the underground water. Some mines that operate use chemicals in their process and I'm not sure if this diamond mine uses chemical to get the ore into production. What we see today at LDG is the caribou hanging around the buildings and they say the processed kimberlite is not good for the animals so what are they going to do about it. Maybe the berm around it is not good enough, I would think that an elder would like to say there should be a fence to keep the animals away from the kimberlite that would be left behind, this would be satisfactory. We need to help the company make the right decisions and do the best clean up and reclamation so we aren't leaving the problem for future generations.

CE: Just trying to wrap up so everybody can get a break here. So I explained what the PKC looks like now. When we are talking about closure those dams would still be there, they would be cut to allow access in certain areas as well. On top of those area's (refers to slide) there would be rock placed on top of that material to prevent the wildlife from accessing the processed kimberlite. Those areas, so this would be covered with rock- that's the gray layer on top- so that would be the kind of clean rock that's coming out of A21 that would be used to cover that area. Right now the plan is to have a pond that would remain in the middle. I talked yesterday that there is only so far that you can push that rock before it hits the material, as you can see it is not super stable so there would be problems keeping the rock on the surface. The idea is to put water on top of that material and prevent access that way. That is the current closure plan. There is an option to start taking some of this fine processed kimberlite, this slurry material and move that underground into the 418 pit and then covering that with water at closure. That could change this plan, so it would remove the need for a pond in the Processed Kimberlite containment area and it would be covered with rock and become just a dry area at closure instead of having that pond and some of that challenging material to deal with on the surface. Some of the recommendations from the PKC would cover it with sand and soil to promote revegetation and eskers and wildlife habitat and willows and that type of thing. Returning the lake and the shoreline to the natural condition and lining it with rock, water plants, bugs etc. Providing safe access for wildlife over the dam by re sloping some of those dams and reopening some of those sections of the dam to create water flow back to LDG. Leaving some areas steep for animals such as wolverines, bears and foxes. Removing the slimes from the mine site at closure. Doing some toxicological testing on the PK slimes to see if it is harmful to wildlife or humans.

returns to slide

KA: Just going back to the slimes, a couple sessions back the question (has always) come up about the PKC slimes being toxic. Did we not run tests? We sent them out and they put fish in that water and there was nothing wrong with the fish, the only thing is they starved because there is no food in that water but as far as it being toxic it was not, and fish were able to live in it so if that is the case then why do we keep having the worry that is toxic?

CE: So these were old recommendations.

KA: This is the old recommendation? Oh I see. So for the new people that are here.

CE: I'm going to be updating you on that in a bit.

KA: Ok good.

CE: There was a recommendation to create a barrier to prevent wildlife from moving from the top of the north country rock pile down into the PKC. Part of that was the steep slope and keeping those rough boulders along that edge. And that has been incorporated into the north country rock pile closure design as well. Having streams that would filter the water flowing from the PKC using mosses and natural vegetation to monitor that water. And then kind of Loui's point, talking about a fence but there was some conversation about how fences can be complicated when looking at a closure scenario where there is not a lot of people around because they can fall down, animals can get caught in them. So, the end recommendation was circled boulders around the area where the rock was stable to try and prevent access into that pond area to deter wildlife from being around there.

BREAK

******Shelby Skinner conversation**. File 2 5:00****

KA: Maybe what you can do is give us an overview about the kind of environmental work you are doing and then we can ask questions.

SS: Here at Diavik we have a water quality monitoring program. Every 6 days we go to test the water so we collect samples that go the lab in Edmonton and we have labs here where we test for sediment and PH. Those are the in-house analyses we do. We get several test bottles that we get analyzed for mercury, metals, nutrients and other general chemistry like pH conductivity and stuff like that. We also look after the wildlife on site, right now we have one grizzly bear awake and caribou on site. We get calls during the day and night so if there is a bear onsite we go and monitor and make sure that they are keeping clear. We do caribou scans monitor their behaviour. This year we have had a lot that hang around mining activity. We watch how they react when the haul trucks, we monitor what they do during blasts. We have wolves and wolverines, we do not monitor those too much we just make sure they are not getting in the way in work sites. We also have two air monitoring stations on site they collect particulates in the air and then on a weekly basis we download that data and send it to a contractor that reports for us. We just finished a big AEMP testing program all over site. We go to LDG and take water samples at sites that are close to site. We call them mid field because they are in between 10 km and then we have far field sites as well. We just finished that program. We do wolverine track surveys and we count the prints and we see if they like hanging around on site. They are about 16 km long. Last year we had a grizzly bear DNA program so we had posts out all over the tundra and we bate them with different things that attract bears. The posts have barb wire on them so the bears will rub up against the post and then we go and

collect the hair to be sent out to be analyzed. We got preliminary results back and there are 136 different bears that they found based on the hair samples we collected. We also respond to any spills on site. We report large spills to the government and follow up with that. We also have desk stations around sites. We can compare the samples we get close to site to the ones we get far away. That is it in a nutshell.

RM: Where do they use the water to drink?

CE: It comes in from the water intake shack by where we saw the caribou, it comes up and goes into the treatment plant and gets piped to the camps and all around

KA: This is the 2nd year that the caribou have showed up here at the mine site in a number of years. In the beginning when the mines were here there was concerns that they would fall in the pit because at that time this was their migration route. Have you been observing if they are coming near the old pits? They used to fence it with that orange fencing to deter them from falling in. It is a small herd that is out there right now but have you noticed if they have been going near those pits?

SS: There have been a couple small herds called in around the ice around pits but none in the pits. They go in the tundra but I have not seen them in the pits.

NK: I am concerned about the water; the only water we get to Kugluktuk is from LDG are there any changes (in the water) from when the mine was built to today? Are there any contaminants that are showing from before there were mines?

SS: I think it is mostly a nutrient change so just in the different processes we have and water treatment will add to that LDG is a nutrient. Nothing toxic. Anything you add to LDG will have an effect.

DTE: I heard you say you collect water and send it to Edmonton, how long do results take to come back to the mines?

SS: About 2 weeks, some samples have quicker return times. We run for turbidity and PH so we cannot put out water that has high turbidity, PH, and TSS so we check that and we monitor some on site. We check that within an hour of coming back from taking samples, the bottles we send to the labs are for nutrients.

DTE: Is there lots of mercury in water?

SS: I do not look at the samples all that closely.

CE: A couple years ago, I think it was 2010, there was some slimy sculpins that had elevated levels of mercury. That was curious when that result came back because there is no mercury in Diaviks processing systems. Chemicals are not used on site so it was an odd finding so that was the year the fish tasting stopped and that triggered a huge lake wide study on ultra-low mercury detection. We had to go to a specific lab that does really low level mercury testing and we did samples on the mercury levels of fish. All the water in LDG came back with no levels of detection, and the fish were well in the safe level. I might have a graph about the white fish and trout and the next test came back. There seemed to be that samples can get contaminated easily. There was a very rigorous testing program done of mercury, that has not been the case here, the water has been really good quality in terms of mercury up to date.

CSB: So you said that nothing changed with the water except the nutrients. When you have a high level of nutrients in the water, what does it do to the water? Was it normal before and now it is high? Is it at a level where it is dangerous in the water causing other chemicals to show?

SS: What the nutrients do, is they actually help organisms grow in the water. Nutrients are the small tiny bugs that will do better which means that the fish and vegetation will do better.

CSB: Does it take the oxygen away?

CE: What you have seen is if there are very high nutrients, you get something called eutrophication which means a ton of algae grows into the pond or lake. Small lakes that have a rich bottom with a lot of nutrients, you can see that. There are lakes that have been closed down because of eutrophication it can kill animals and that type of thing if they get into it. It is very visible; the lake turns green. It can be a risk to animals and probably to humans if the levels were really high We have seen increase in nutrients in LDG but we are in no way at that threshold of a risk of eutrophication starting to happen. Too many nutrients can become toxic but we nowhere near that yet.

CSB: Would it be because of climate change or what the mining is doing, or are you like me and not scientific in that way?

SS: No I am not an expert on that for sure.

CSB: But everything is combined, one thing affects the other.

NT: I'm sure everyone has seen eutrophication around a honey bucket. That is the same process, the loading of nutrients. Around spring time is would be so green where the honey buckets were.

DTE: It is good to talk about water, water is really important to us. Ever since the mine opened, I worked for Water and Lands (for LKDFN) for 9 years to see if there were any changes in the animals, fish, water. We put this big buoy in the water and we put 6 tubes inside it and we put in the water where the river comes down and we left it there in the first week of July and left it until September. We sent our water out and wherever they get tested it comes back to our First Nations office. Now we are teaching the youth that travel with us in the boat and we show them these little bugs that we pick out of the lake and we tell them if it is healthy or not and that we will get the results back at the end of the summer. Even if we see any changes in the water they will tell us. But there is mercury in our water. They tell us not to eat the big fish because they are not healthy enough for us to eat. We do see changes and when you start seeing mercury it hits me right there (heart), you know there is something wrong and maybe it was just that one year, it was too hot. With climate change, you just do not know. But the snow used to be hard and now it is just powder. I went for a skidoo ride with my son close to the tundra and I walked off the road and I fell in the snow, before that I used to stand on it. Everything I do is all written down and anything that is not the same as when I was young right up to today I write it all down. That is why I am asking so many questions. Masi cho.

BA: When we are talking about living things, sometimes we do not ask ourselves what we are made of. The chemicals in our body, like the fish and all the animals are made. I always wondered what fish, one type of fish how many ingredients or nutrients or chemicals do you need to make a fish? How many nutrients do you need in your body to keep yourself healthy? We have a lot of salt in out bodies, once one starts to take too much it makes us sick when we get too many chemicals we get sick. It is all living things on the land they are all chemically made from the very rock we are made from. How many chemicals does it take to make the living things? When we start talking about chemicals and fish we have too much salt overtaking another part of our body we become sick and I always have a hard time taking medication for myself because of the later effects of chemicals in your body. That is what medicine tries to do. That is one of my biggest concerns, we as an industry give a lot of chemicals in the air and we are changing all aspects of animals on the land. Thank you.

DM: Me as an elder we came here as advisers to the people we are representing. This is a learning process to a lot of us because of the chemistry and all that. I for one my dad and others that have travelled and trapped for whiter fox, around here in the past they had a good relationship with the Inuit. The land was really good back then, it was natural. Now everything has changed and the minerals are changing and the waste rock pile that was not here our ancestor were out on the land and it wasn't easy and if you get sick out on the land you have to learn from one another. To see what medication would be good for our people, some of us got sick out on the land so when I saw the caribou today cornered by the big waste rock pile I see them making it around the waste rock pile. It is confusing

for us to see what the landscape looked like and so does the animal so we have to learn how to adjust to the changes that come to us. In a short period of time I will be 81 so it is so good to see the youth coming with us and the youth need to be involved to learn from us and learn from various nations and companies as well. With the surrounding landscapes, the land will remain once we are gone, I think we enjoyed the land and now we see lots of changes, like I said the waste rock pile was not her and now it is. The most important subject I see today is the water. Because without water we cannot survive, neither will animals. I understand the diamond operation is not using chemicals but the concern I have is the dust coming off from the blasting of the rock and the dust. The dust flies out causing contamination down the road. I know one of my uncles travelling around that they were hunting with skidoo and he saw blowing dust so I just wanted to share this point with you. Thank you.

JB: I think the interest is in explaining to the panel what they do and how it is different and similar to what we do as far as out advice to Diavik.

WL: There is another little lake you were talking about filling in. Are you are using A21 material to fill?

CE: Louis had recommended draining it to maximize the area available and minimize the water that would come out from the rock pile.

WL: Is that little lake going to be enough to contain materials coming out of A21?

CS: No, it would be a part of the pile but it gave it more space.

WL: That north arm lake there could that not take the excess from A21, could they fill it right in, is that possible?

CS: I don't know if the time will work out, A21 is done in 2021 and we need the North Inlet until the end of the mine and beyond to hold all that water going into the water treatment plant so you could not back fill it with rock until you are done using it.

WL: You could not do it partially and work as you advance it couldn't get smaller and smaller to the end.

CS: The underground water is a huge source of water and they need the space they would not want to lose the security to have a place to store water.

WL: So that is a rotten idea then?

CS: Don't know if I would go that far.

NT: How does everyone feel about Diaviks responses to our recommendations? I see a few nods and yawns.

DTE: Can we get a bigger font it is really hard to read your letters are so small maybe not only for me. But when the diavik responds it should be in color so we know they got back to us. Sometimes they do not respond so we should see it sometimes we talk and talk and no response, so we want to make sure we can connect with each other. I bring everything home to her and talk about all the things I have said at this meeting.

NT: I like that idea, if we could color code the ones they are accepting, the ones they are still working on and the ones they have modified.

CS: Yes like a check or dash to make it obvious.

LUNCH BREAK

Presentation 3: Review of TKP discussions of processed kimberlite

KA: All of those little swirly things, that's how you get done into the kimberlite carat, I remember the last time we were here they said if you go worn there you can look up and see the sky, will we see that on our tour.

CS: You will be able to see down from the pit for use

KA: I'm just wondering how they mine that out with all those roads

CS: it's blocked by a block and not by the layers, they use lots of different rock to make it a paste so they can put it back and fill the voids

KA: Connected to 514?

CE: Yes

KA: So, if they put the pk slurry in, will they be putting it at the bottom?

CE: They are connected as you can see, it's the same access and then they split. The pipes are not connected but there are 2 tunnels that connects them so once. You can drive across to the 154. Once mining is done here, there are cement concrete barriers stopping the things from crossing.

LZ: Once the PK product and the water is being mixed in the underground chambers, I wonder what the water quality would be like. I just want to question that.

CS: I think that is one of the most important questions for everybody, including Diavik. There are two pieces to that; the PK material itself and what its properties and chemicals are and then there is the water. There is groundwater that comes into underground and then there is water on top of the PK material that will come in as well. Those all kind of interact together. It is an important question to understand what that looks like and what the result of those are. That is one of the biggest questions, for the work on defining what that water quality looks like and what that means for the lake. There would be a pipeline to move the PK into the underground. Similarly, that return water pipeline would bring back that processed recycled water. The AEMP, that is the whole lake monitoring that gets done. That will continue throughout operations and into closure. That is looking at the lake water quality, sediment water quality, the fish and the bugs in the water and they're health. There may be changes. The SMP monitors everything on site; samples PKC, north inlet water etc. We expect there would be additional stations added in the 418. One of the things that becomes an option if Diavik is allowed to put PK in the 418, is that the closure options for the PKC can change. We talked about that pond with the covered rock. The closure plan for the pit itself would remain the same. There would still be plans to cover that material with lake water. So we would pump lake water back into the open pit, leave it for a number of years to make sure everything is okay and then reconnect it back to LDG. This panel discussed doing a toxicological study to test the PK to see if it is toxic to organisms.

BA: My question is about the fish going deeper. There is a lot of time especially July during hot weather when the fish go deeper and I was wondering they also like to stay close to streams, which can be cold too but not in them because it's too cold, the light is constantly going down they can still be cold, eskers have a lot of cold water going into streams as well because of the permafrost nearby, it needs lots of time to settle the sediment before the fish can go down there, we need to keep a close eye on it.

NT: We have the rest of today and tomorrow. I am hearing you talk a lot about the fish, do we want to tackle this first? You asked for the toxicology study to make sure you feel comfortable with the Processed Kimberlite. I am glad that Diavik responded and carried out that study. We have some time here to talk about anything else you can think of, any information you need to make an informed decision before they move forward. Do you have any questions you would like answered?

JH: You were talking about the PK slime that will go in the mines underneath 418 and I remember at the last meeting we also talked about if it was a good idea to put it there and then later on fill it with water. And right now, Diavik has responded into doing more studies to see if that was safe? The other question we have is with that water, because water is weight, it will keep it down below, and now we got a little bit of information

back saying that the slimy little bugs like snails are 100% not going to survive because there are no nutrients in that. They will not survive, right?

CE: Sorry, I may have phrased that wrong. It is reduced survival but not 100% dead. It is just they had a small amount of mortality, so there were a couple of individuals that died in full concentration of the PK material.

JH: Because the mine is like a cone and it is going deep, deep, deep we do not have a lot of survival down there but around the edge of the mine site where there are some nutrients and it is shallow for other vegetation to grow and other species of fish need if the pressure of the water is heavy it will keep it down below. Louis was asking a question about the movement of the water would be turbulent, and for any growth to happen they need sunlight, but it will be too dark for anything. I guess we will have a better view when we go out there and look. Because we did go out there when there was no snow and stuff and it is pretty deep. Just to have the idea and thinking about it because on the survival in deep water and what fish we have in north and if the water depth will affect. We need to give the visual especially to the elders who are more visual people to get them to take a look at that to give them a better idea.

NT: Thanks Jolene. I think that is a very strong example of two-eyed seeing where you are bringing your scientific and traditional knowledge together. I am hearing a lot of curiosity about fish and maybe we should move directly to speaking about them now. I know there are a lot of fishers in this group. And maybe we can look at that question on how fish use deeper water? How deep do fish go? How deep do we have to worry about fish going? So, the pit is drawn there. Where do you think fish will live if we were to fill that back with water when fish start moving freely?

WL: Can you mark it off at 100ft intervals?

CS: Each of these is 200ft tall.

WL: So where would the PK come up from the bottom?

CS: It would depend if you are talking operations or closure. If you are just talking operational PK deposition, it comes up to the top of the underground.

WL: At the very end of the line how much water will be from the surface to the top of the PK on the ground?

CE: I would turn that question around and say what do you think it should be? Because there is no answer right now. Diavik would be looking at a range between 15 ft until 50ft but they do not know what that number is yet. So I think that is a question more for you guys in terms of what comfort you would have above that water level. There is no defined water level. It depends, if I look at this picture, this is 30 metres of water sitting on top of everything underground.

WL: How deep do you set nets?

BA: Depends. 20-25 feet depending on where the fish might be. We check by sending a hook to feel where the fish are mingling. Some days the fish are on top when it is colder and on warmer days you want to set your nets a little bit deeper to get the level of where the fish are at that time or month or season of the year. Anywhere from the surface level to 25ft.

WL: That is 25ft to the top of your net or the bottom of your net?

WL: so you have about 30 feet?

BA: On a cold day you do not set your net very deep so pretty close to ice level. Anywhere from 1 foot to how fast ice is forming at the bottom. Fish will be just below that ice level.

WL: Okay. Are you talking about the lake or the sea?

BA: Both.

WL: Because salt water acts different than fresh water, inland.

BA: All fish react to cold water. It has something to do with the pressure in the air.

WL: The deepest I have ever set my nets is 50-60 feet down on a very hot day, that is the deepest I've gone. The hotter it is, the deeper you have to go.

BA: I have not set nets in about twenty years not but it has gotten a lot warmer so we set it much deeper, the temperature in the water has risen and it makes a big difference.

WL: My opinion is if you leave at least 100 feet for water on top of it that would be plenty for fish.

DTE: So, when they fill up the pit- In one of my meetings at home, they said they will fix the cut areas along the pit, they said they were going to fill it all the way up with water then they are going to open it up so it can be connected to the LDG, that's what I heard. But I do not know if anything is ever going to live here. I do not think any type of fish will live that far because there is nothing there for them to eat. They are going to fill it up, that is what I heard. I have never missed a meeting. On a hot day in my community, you have to go to deeper water to get fish and in the fall and when it is cool the fish move up, and

your nets do not have to be far I go with my brother, right now under the ice it is only like one foot, it was very shallow and lots of fish and trout but very shallow, but here I do not think they will go there.

WL: I am talking about 100ft from the top, I don't think they will go any deeper so that stuff can go in and I don't think it will hurt anything.

DTE: I know there is no food there for them. Unless we go 20-30 years from now, just like caribou; where is all their food? They are gone for a while but then they are going to come back. Maybe this would happen because when they move this pit up, water is going to move around and the food will move because everything moves in the lake nothing stays in one place. But I do not think anything will grow, that is what I am trying to say.

NT: What you heard was right, when Diavik came into your communities and said they are going to fill this up with water, you were right, that is what the plan was and still is, they are coming to ask for your advice, expertise and guidance on adding this slime and PK. One way we can deal with it is potentially putting the PK into the pits. Right now it's just a discussion, Diavik coming to these experts early to ask for guidance and input. You heard right, they want to brainstorm this with you. The second thing that I'm hearing is that fish do not go more than 100ft and that things will not grow 400ft down.

BA: We are trying to feed the fish around that pit, we are creating shallow spots around that pit. When we think about not having any nutrients and no fish habitat down there right now it might be short term. Once the winds bring the plants back to the area the fish will eventually be able to come back as long as the plants can grow for them to eat, the water movement will fill it up with sediment in the bottom and if we did out PKC in the bottom, maybe in the future, the wind and nature will bring nutrients to the lake, if we are going to fill it up it will end up like a river bottom all of it from the lands, streams and lakes will bring nutrients.

NH: Those pits are so huge and man-made when you fill them up with the water again do you know if it will it settle or would it constantly move from the roads constantly moving like a water pool?

CS: The way that the dyke will remain it is expected that the water will be quite still in this area because of a big portion of the dyke will remain. In LDG there is a lot of water movement because there are big winds that move the water so there will be a lot of surface water waves, this area is quite sheltered and protected because these are essentially breaks to stop that momentum of the water moving in. That was one of the reasons of what would be the purpose of one of those shallow areas will be good for resting and feeding in that area because that is quite protected, once it is full and once everything is even with the lake it will stay at that settled water.

KA: Does Diavik know how many cubic meters is that carrot, to the top where the PKC would end? Do they know how many metres of PKC can fit into that carrot and where it would end? Because only need 100 feet through all the tunneling that it's that area how much will fit? I think any fish in their right mind, if they went any further would say wait a minute I cannot breathe, get me out of here. It would be too dark, the light source would maybe go down 100 metres before it gets really dark into that carrot. So maybe just to give us a vision of how much PKC is out there that can fit into that ad what is going to be left over and where it is going to go?

CE: The space of the void- how much can be filled and an estimate of what will fit, the operational PK material would be going in first and then anything that is in the PKC. I could get you the void, the operational number but I do not yet have the closure number.

KA: The operational number is coming out of A21.

CE: And A514

KA: So those two are going to start filling 418, so how much in the operational? What is left for cubic metres? And what is left in the PKC pond? If this carrot gets filled to the top and they leave 100 metres for fish to swim in and there is still PKC left, would they put it into 154?

CS: That could happen if it was going well and if there was more material. Primarily, they are trying for 418 and they think everything will be able to fit in 418 but the option to go into 154 or even A21 which does not have the underground but it has pit, would be something DDMI would consider.

WL: There is an easy way to find the depth of that water. And that is to get a depth finder, get one of those college kids to go out with boats and find out exactly what the depth is around this whole lake, even do half of it.

NT: Or for how deep the fish go, my guess is that there have been a lot of scientific studies so Diavik has a pretty good idea, assuming how deep fish go in LDG.

WL: If you take the deepest point and maybe chop a bit off and compare it to the depth of the hole, send some kids out there jigging trying to get some fish.

LZ: Once the water goes into the open pit, half of the water will not be able to move, the small bugs in the water and if there is no fish food down there, how will it feed itself? If there is wind, the water would move on top of the open pit and then if there is no fish food in the water then the fish won't go deep in the water even if there is fish half way down into the pit the water won't move. In the past when we set nets on the shore we would sit in the shallow water and catch. Then when it gets warm we have to set our nets

deeper, after august the fish come back into shallower areas. I just want to share that with you. Thank you.

BREAK OUT GROUP MENS:

NT: Before we took a break, Wayne had said he didn't think the fish would be going deeper than 100 feet. I do not know if that changes the way you feel about processed kimberlite being in the pit or not in the pit.

WL: I still think that before this thing is complete, the height that they are going to in that column there, they should grid the lake and use a depth finder to map the lake and get a lot more information on it.

NT: Map where the fish go in the lake you mean?

WL: The thing is the lake should be graded out and some young people should get out there with a fish finder and go back and forth on a boat every day monitoring the depth of the lake. They will find the fish if the fish are there and then we would know how deep the fish are going down and being found. Grid the lake.

NT: Do you mean LDG?

WL: No. The lake, the areas closest to where the mine is the most important. You do not have to do the whole lake. Just a section here and there.

NT: If that became a recommendation and Diavik said the deepest was 100 feet. How would you use that information?

WL: If they know the depth of the lake, then why not just put the pit water at that depth and then there will not be any argument about whether it is too shallow or not.

NT: Are you wanting to know the depth or just the depth of where fish go to?

WL: It does not really matter where fish go because they are moving all the time. You just need to know how deep they are in this are so you know how deep to fill your carrot.

NT: If that is a recommendation and the results come back and they say fish do not go any deeper than 100ft, then would you be ok with filling the pit to 100 ft. below the surface?

WL: I do not see why not.

NT: Would you feel comfortable filling this 318 meters in with processed kimberlite up to the point where fish do not go any deeper?

WL: I'm okay with it, how do you feel?

LZ: I am not too familiar with processed kimberlite. I prefer to see some sand because maybe sand is better ingredients for the fish to feed on. Even some pebbles. Fish would even eat them sometimes. Talking about the depth of the water, it is not the current, there is no river going through it. So how will water circulate underneath? Maybe the water would not be able to move, it will just stay there. That is the only concern I have.

BA: PKC, if we could somehow spread a little to each pit, maybe the ones that are underground could receive a little more and add sediment just above PKC somehow, will it hold sediment on top? Can you mix it? When I think of all the nutrients on the bottom of the lake, that we want the light stuff and light vegetation it would maybe stay on top. And if we use something like a screen on top of the PCK it would maybe harden up a little bit to help keep the sediments from sinking below the PKC. Maybe the screen would keep the sediments on top of the PKC. I don't know what kind of material you would use to put there, maybe that could be an option, it is going to be really quiet and there is no movement. We might end up with fissures from the pressure because the water is not moving, it would be good to keep the sediments down there somehow. Nancy was hinting that if you breach it a little deeper maybe it would keep the water from circulating. Depends on the wind. If the wind comes from the one side, that water will circulate around the outside of that pit and maybe it would go all the way down like a sink. Depending on which side of the pit maybe that would help bring a little more movement.

WL: Which one are we talking about?

NT: 418. The real question becomes when they are mining from A21, it has to go somewhere. They said no to trucking off site and now they are thinking about putting the sediment on the land, the processed kimberlite going into the pit. So at the end of the day, are you comfortable putting it into the pit depending on how it might affect fish?

WL: There was a mention earlier that they stock piled the bottom of the lake, why can't the material be returned to the pit after the PK is put on?

NT: This is really challenging stuff, no matter what you put on top, it sinks to the bottom. It is like toothpaste, so slowly the things sink in. And Bobby's suggestion to net is great but it would just sink down as well into the PK. Whatever they put on top of this is just going to filter down. Unless they discover an engineering plan this is what would happen.

WL: Will anything grow on that? It might just end up being a dead lake and just fill it up with water and slope it so the caribou can cross safely and make it safe.

LZ: Yes. I would think that maybe what I want to do is try to collect some pebbles along the shore and some sands from the lake bottom and put them along the bottom of the lake. I understand that they still have the lake bottoms preserved. I noticed that the lake bottom has things that I'm concerned about, how the fish are going to survive without a proper food source. It is hard when it is something we have not done before we do not know if it is going to work.

NT: When we think about the different kinds of fish that live in LDG, are there some that go deeper than others? You guys are the fish experts, not me.

BA: Most fish go really deep even lake trout can go very deep, sometimes 100's of feet deep. I have caught them along the shore. I use a little motor so my line will not break and 20lb test so I follow the fish and it took my line straight down and it took almost all my line straight down. My fishing line was more than 300 yards and It went straight down. The line went four circles around until it stopped. I use a big real it stayed there for maybe 15 or 20 minutes without moving and when I tugged on it a little it started coming up slowly and back up to the surface slowly and then took out back to the shore. I couldn't get him, it took over an hour. When I did get him close I grabbed him, he was so big my whole family had to come help. This was lake trout. It was an enormous 59 inches wide / 37 inches long my daughters fish. Ling cod go very deep as well, right near the bottom. I am not sure if they are here in LGD, they are cousins with ocean fish and ocean fish like it very deep.

NT: What do you young guys think?

WL: A trout a Great Bear Lake was a trophy, this is a little lake, it is not Great Slave or Great Bear: we are looking at a puddle here. It is very small, I do not know if fish would be down at 900ft. I feel that 100ft is plenty for the fish that live here, what do you say Louis?

LZ: Yes. there are so many great stories about fishing, the main concern is how deep they are in an inland lake. The fish in the summer time, when there is no ice, they hang around the shallow parts until the ice is gone. If it is too deep, they can't swim deep they get crushed by the water. They need oxygen and there is the weight of the water. I think the fish get nutrients from the inland lake with the wind and debris. The rivers bring things and feed into the lake so I guess that contribution can go a long way.

WL: We come up with some pretty good stuff here but what we really have to know is what weight will it hold? Can it sustain life or would it sink out of site like a rock? I think more testing should be done on this PK before we can come to any final decision, what do you think?

BA: When we think about fish, we talk a lot about fish up north or where we are from. You find some small lakes where you catch fish. How do they get in there? Because of streams, the springs and snow accumulation. I have caught big fish in small lakes. Everywhere I go I dig a fish hole, and I camp overnight. I dig a hole and always find fish and even in our small lakes, I always find fish you dig a hole that is part of our culture, all people come to do this as well, every Native will dig a hole to look for fish. In the fall, we walk a lot and hunt alone. Finding places to fish and when we do find fish we use inukshuks. We use boulders just like gun sites but we pile them on a hill and line it up and there are always fish. Inukshuks are used in many different ways up north, might even be a site where a person was buried in the past, bigger ones are welcoming, to mark great hunting grounds. You can use this to find fish. You can find a camp, you can find burial places, and they point us in the right direction. When we bury caribou underground, we immediately put inukshuks beside it.

NT: One of the questions diavik is interested in getting your opinion on is if the pit is filled back with processed kimberlite, do you still want to see those reefs coming back. A couple sessions ago, our topic was to look at fish habitat and we looked at a couple places we could use for spawning, rearing and nursing would look like.

WL: This stuff is not poison and if it turns out it can sustain life I do not see why it a couple little holes make a difference. They have the whole lake who will care about a couple little holes? I would like to see them focused on filled these holes up to make it safe for the animals. I do not think we should be overly concerned with these holes in the ground. I could be wrong.

LZ: Last time we visited, we did check on the place where the saved the lake sediment and soil were left for replantation. I think they store it somewhere over here, they stock pile it. They told us this is where they took lake bottom. True reclamation means we use it to replant the lake bottom, but I do not know if the movement on the landscape is going to work for replantation. We saw one area where the lake has a hill, they have a mountain shaped like a ladder; it is a natural formation. My father told me the beaver made the ladder out of the lake so this is where you go to the opiunt lake area, there are a lot of areas are traditional ways to mark how you would survive while you were out there, we went to the lake by canvas canoe. And the only way we got there was lake and we didn't have any caribou so it was just by fishing and sometimes we came across birds, a little history of the land scape. Thank you.

WL: These holes that are going to be filled if this is not going to be used for spawning they spawn in shallow water, they do not go to 100 ft of water.

NT: If you put the processed kimberlite back into the pit, do you want to encourage the fish habitat here or not?

WL: Was there spawning before these holes came?

NT: I know that studies were done and the law is that if you take one away you have to put it back so you have to make sure you create habitat if you take away habitat.

WL: The outside portion could be fish habitat and these could be dead. As long as the caribou can get in and out, we don't have enough information on that PK. Because what happens if we cannot grow anything there, it is going to be dead water. Drill some holes here and there just to stay within the law.

NT: So what I'm hearing is it does not matter, you can keep doing this fish habitat and not worry about the PK and the fish.

BA: I like that, just keep the habitat and not worry about the pits, maybe it will have fish and grow from there if you clean it until the depth of 100ft, maybe you can keep all that heavy metal; keep it clean the fish might want to use it so I'm not sure. If you take out that slurry and PKC it might work. Keep all that habitat going. Even with the PKC you can keep that habitat in there.

NT: Wayne's point is that it has to be tested before we can come to any solid decisions. Just to be clear what has to be tested? We want to know what will grow in it?

WL: I'd like to see it tested to see if it could be mixed with something to help it bear weight. If it won't and there won't be any growth then just breach the dyke, fill it up with water and call it a day, go home I guess. There has to be more testing done on that PK I don't feel like I can make a proper decision here.

NT: This is always the challenge when we are making decisions about the land. We do not always have the perfect information. We make the best decisions we can with the information we have. I know we have the time tomorrow to really dive into this deeper. And honestly sometimes we have to choose a or b, here's this Processed kimberlite, is it better to put it in the holes, or leave it on the land? I do not know.

LZ: Filling it back up it is not only here that it has to been done, but even other mines might use these ideas so they might have an idea on how they are filling up the pits. Maybe we can ask them as well, we can learn from them. We need to learn from one another.

NT: Diavik will not invest anymore money before your panel makes some decisions; they want to know what you want to see. If it is a hard no then they have to go look for other solutions. We are here today to see how people feel about this idea.

WL: What is the time frame on this?

NT: Over the break you can think about how you might want to present the points.

BREAK

NT: Do you want to share what we talked about with everybody?

KA: We do not know a lot about this PK yet. We would need a lot more testing before we can make a valid decision on whether it be inside the pit or leave it on the ground. We also talked about some fish would go below 100 ft deep below the water so we did not know how much PK to put inside the pits. We also talked about how we need to research if anything can grow in the PK or under water, and stay above the PK or if it would sink.

NT: There was one question about how the water stay healthy if it is not moving? Putting PK in would fill in the deep pit, would the water might otherwise stay stagnant.

KA: There was a suggestion that we put a barrier or a screen to help things grow on top rather than sink. We could pack the PK with something else so we could increase the weight.

NT: Maybe just the weight of the water would keep the PK from mixing too much. In the tk panel 8, we talked about building special habitats for fish to spawn and rest. If we put the PK back in the pits would we want those reefs in that area? The final answer was yes. We want to stick with those recommendations around fish habitat. "Why not?" was one of the comments.

Women's

We did not take notes or anything we just chatted, figuring out what was best for us. We just wrote it down on a napkin. In the pit we should put the PK in and then the PKC after. Then there were thoughts about how deep things were and nothing grows. We thought about the tailing ponds and the caribou try to eat the minerals. We should remove it and then just fill it up. In the spring or the fall, the plants would grow. We can open it up for the water to come in. If it is windy the dust will move around in the lake. We need to test for the bugs that appear on top. We cannot say it is calm or shallow and with climate change we see wind getting trapped sometimes this might happen. Sometimes we get wind bound for days out in the lake. When I went hunting we had to stay on land for 3 days before we went back to our camp. And how wide would we have to open the dyke to get water moving. How long is the life of the mine, I asked and they said 2024-2025. I asked, when they will do their fish tasting and they said 2018 in august. Madeline Drybones will go and we will ask her and she will judge the fish, the color and the taste. It is good for the community too. Younger members should take back the knowledge to

the community, we have mercury in our water so we cannot eat the big fish anymore we can only eat the small ones. So we need to keep track of what is happening. We learn from each other. That is how our community works. If we do not say anything and just sit back we will never know how you feel. That is why I do not stop talking, even at home.

JB: So we had quite a few concerns expressed mainly by people who had not attended sessions in the past and it took awhile to hear about the concerns and the frustrations. What happened in previous sessions, like burying materials and equipment in the NCRP and we discussed the uncertainty around whether there was an actual proposal to put the pkc in the pits. It took us awhile but people started to feel more comfortable with the idea and to explain that there is limited options. The slimes and the PKC cannot be moved off site and KA was very good at explaining the history of the discussion to date. JH was good at explaining the relation between science and traditional knowledge and elders sharing their own knowledge to help the future process.

NT: Great work today, it is a lot information on the first day and coming up with some great thoughts and being curious about moving forward and in a creative way. We will wrap up here at 4:30.

END

Traditional Knowledge Panel Session #11: Saturday, May 12th 2018

Opening Remarks

CE: We still do not have the PKC slime number. If they were to pull the PKC slime out, they don't have that number yet and they need to figure out how much they will get out. Because they do not know what that would look like yet. I have the volumes for the operational PK. So, what they would do from 2022 until the end of the mine life as well as the void. This is the underground piece, the bottom of the carrot and that is 7.5 million cubic meters of space. There is that much space to fill in the underground. The operational amount of PK is 5.2 million cubic meters. So, this almost fills the underground completely. Then, if you take from the top of the underground or bottom of the pit up to the level of the water, that whole volume is 25 million cubic meters.

KA: We have got a total of 7.5 million cubic meters in the carrot that it can hold? And coming out the operational slurry is going to fill it to 5 million cubic meters so 2.5 million cubic meters left. If operational slurry is going to fill that up, what is in the pit has got to be more that 7.5 million cubic meters. Would they then keep the slurry and put it in 154 at closure? Because obviously operational slurry is going to fill that carrot. It is also going down into the tunnels.

CE: It fills the carrot but it will not fill the pit. So you would almost fill that with the operations and then you would go into the pit. The question about that water cap and how much you want to have on top of it, Is the key question. We did speak of Ekati and they currently allow a 30 metre water cap on that but they did that math back in 1996, and when they recently went over the water survey they are thinking of making it so they can add more slurry and lessen the water.

KA: Well, being inland they do not have to worry about the fish being in it. I'm thinking that with the 5 million cubic meters of operational slurry going in and then just filling to the base and topping with water because it would be enough then if there was any water movement, that slurry is going to stay where it is. Look at the jar, see how it settles and sits, so now it is a question of where we put the remaining operational slurry sitting in the PKC and operational is 154 and A21?

CE: Yes. And the challenge is that 154 is the only one that will take it to the end of the mine life. It will be the last thing that will be mined so you cannot fill it while they are still mining.

KA: Can they adjust their plan to have that in the closure to have that as the last step to get the PK into a place where it is not staying on the land and making it detrimental to animals?

CE: I guess the question on that is timing and if we need to get all of that PK out of the PKC and when to start that? That is the bigger question.

KA: Well perhaps they can start thinking about that because we always said if you came here and brought it then do something with it before you leave.

CE: Peter is waving at us to slow down.

KA: Because there is going to be some left at the end and we are trying to stay away from filling that pit with rocks but we may have to depending on what is remaining. It might be something that can be left and maybe to keep the animals away from it. Maybe we could get that slurry out of there totally, from the South Country Rock Pile over the PK and over to the north country we would leave a really nice path for the caribou, so we could probably still do it if we had to leave it there with big boulders around it because some people I don't think got to see that tour where we went from one side to the other. We saw that nice slope they put in so maybe on another tour we could see it again, that was one of those plans we thought would be best for the caribou.

NT: ***Presentation: Processed Kimberlite Backgrounder (Appendix E)***

NT: How are people feeling about our option?

NA: It might be easier for this PK to be put in the carrot, try to get as much as possible so it could be less harmful on the land.

KA: When we were talking yesterday, were we talking about a 100 ft or 100 m?

NT: The idea was not that fish do not go deeper than 100 feet so that would be a safe level. In other words, to leave this top part 100 feet (30 m) of water.

KA: Okay, I think that is a good idea not to bring that slurry above the floor of the pit. So that we keep the water on the top of the ice cream cone and the slurry in the "carrot" so that there is no water disturbance. I do not think that it will ever mix, but just in case.

NT: I think if Diavik were to take the PK that is in the PKC and try to move that into the pit, it would bring it up above the ice cream cone.

KA: Because we do not have numbers, we do not know how far up the ice cream cone it is going to go. Would it still leave approximately a 100 feet gap for water?

NT: If we are looking at this diagram, this looks like the ice cream (underground) is at about 300 maybe 200 something, so if this is 418 half way would be where?

You see what I am saying, the way we have it looks like the cone is 300 and the ice cream is 100. But if I look here, it looks half and half. 200, 200.

KA: We might not want to go too far beyond the ice-cream cone part. As long we still have that 100 feet, say we had 100 feet right to here as long as we can take all the slurry from operation and the PKC pit, then it is looking good. With a 100 feet cap then we are looking good. Look at the jar look how much it settled because it has weight to it there is some kind of weight to it so the water pressure there I cannot see it moving. It would have to be a tornado not a big wind.

NT: It really comes down to feeling comfortable with the cone up until you have at least 100feet. How does everyone else feel if we were to put this forward as a recommendation?

DTE: Is it only us that are planning on this or do we take this home to our community to get advice from our community members? For me the PK and the PKC is like a tailings pond and I see caribou going near the base and lick the ground for salt and maybe it is not healthy for the caribou. My other thought is: are we going to fill the cone and then what is going to happen next? Is it going to go where they are doing the underground mining too because of climate change? I have to take this home to my community members before I say anything. I have to think about the water. My brother works underground and I ask a lot of questions when he comes home. I cannot make a decision right now. Anything in the water in my community when it is windy, moves around, in the spring everything moves around. We see it. There are a lot of creeks and rivers that come into LDG. My head is spinning to see what the better way of doing things is but I have to bring it home first before I move forward. It is only for the health of the animals, fish, plants, people. It is hard for me to say I can agree because I cannot. I only have one voice here and I have a lot of voices of elders and young people and I have to ask what they think before I say anything. Masi cho for listening to me.

NT: Thank you for sharing those points. I think the TK panel is one of several community engagement pieces so this is not the only place for consultation. Diavik is required to visit all the communities, meet with chiefs and it is very formalized. The TK panel has always operated as a group of elders and youth providing their expertise. Not necessarily them representing their community. It is not a political place. A place of knowledge and wisdom that comes forward. In the same way that Diavik pays to have all of these engineering reports, there is support for the TK Panel.

DTE: We have TK knowledge and people who come here from my community. When they go home, they never tell us what they talked about. It is not my fault and that is the reason I am asking questions. When I go home, my community will know what I came here for. You have to update them. That is one reason I am asking questions. I have been to so many mine meeting and I can ask the same questions over and over again which is good for us and good for whatever we will be doing.

BA: In our group yesterday, we were talking about pulling the plug in a sink. If the decision ever got to the point where the PKC ever went into the carrot, the sand would be way below the pit because once you breach the water winds are coming from all directions and once that breech is coming from one directions and when they breach that wind it is going to make the slimes move as well. That is what I am thinking. I am having a hard time with that, the wind is going to cause the pit to swirl around. If you breach the walls, it is the wind will swirl around. Maybe with how many breaches will start breeching the walls. I think yeah, it is going to cause the wind and the water to swirl, I am concerned about the slimes being moved around from the bottom. The winds are so strong nowadays.

JB: If there is a concern about where the winds are coming from is there any opportunity for the Panel to recommend where the breeches should be placed? What drives that now?

CE: Unfortunately, there are navigation permits so the NWT has requirements around lines of site and those are set from a permit back in 1999. There is not an opportunity to change those. In the 418, there are 4 cuts in the dyke.

KA: Is there anyone that could speak to us about how water would react to wind in a contained area? We have those walls all the way around both of those, so the water levels are going to be up near the top, I know in big lakes there is a lot of surface area but in this contained area it is really small when you think of it but it is big for us so wind is going to hit the walls and try to squeeze into that small breech. I don't think it will churn 20 feet down I just don't think it will swirl, if you look where the breeches are there are two on the north side and two on the south side. Then one on the north side and then west is all rock so I just cannot see it swirling there is no force on the bottom making it swirl. If someone can speak to us about wind and how it affects water movement, maybe that could help.

NT: Science calls that fetch. The fetch is the freedom of the wind being blown across the water, but the fetch within this area would be very small because these are break waters. For example, where I live we have the ferries, there is a massive break water wall built straight out into the ocean so that it is safe for the ferries to dock as this is an unpredictable weather environment. All around the world people build break waters so boats can come in and out safely.

DTE: I know we have the deepest water on great slave. I lost an uncle on the lake and when it is windy and you have to travel and you don't speak because it is a spiritual place. When the wind picks up on the side it is like a fork where the water just moves roughly. It has bigger waves. You do have the break water so when it is windy in great slave lake the wind just goes over it over it on both side. You have to remember climate change is different. Snow used to be hard, it is powder now. Wind is different on the lake. I can

stay on the lake longer. We can be wind bound for weeks. Not only in my community, there are floods, everything has changed. Even though we try to protect the PK, it is still going to move unless we put it down and watch it for a few years to see what happens. Do not rush into it. Masi cho.

NT: Colleen said the dykes here are 18 feet above the top of the lake.

JB: I am thinking that we may want to have a clearer understanding of the prevailing winds to understand what the impact of wind might be and if that is something the Panel would want to know more so we might be able to predict the water disturbance within those pit areas.

BA: Think about if you remove the freezers on the dyke, it will get soft again and melt again. The freezers are right around. Once you move everything, they are not going to be around anymore.

CE: We did not point them out that, obviously, there are only 5 freezers on the dyke and only when they come in contact with the island. Outside of that, the dyke has a solid concrete wall down the middle of it so it has rock on the outside. So, you have regular seismic activity inside this dyke, the design of the dykes had to be very solid so the outside of the dyke has the larger boulder material then it goes into a finer grade, so say 10 cm or 8 inches and then it goes down to a really fine crush and goes in this area. Then they remove that crush and they back fill it so there is a meter wide that where it meets bedrock because they have moved onto the bedrock, where there are cracks and fissures on the bedrock so there is a seal and grout throughout those cracks. It is a very solid, stable structure and wall. The thermosiphons are only used from an operational perspective to maintain safety and make sure that the ground where there is an island would have more variability in the temperature of the ground. When they are working behind that, they want to make sure that just maintains a frozen core so there is no seepage going into the dyke. That is the reason for the thermosiphon. The distance from the top of the lake to the top of the dyke is 18 feet.

DW: While we are here our elders and forefathers talk about these things and they used to come visit the meetings here. We have four chiefs within our region and all our documents go to our leaders. Are they having a meeting according to the agenda? They are our leaders and all these recommendations we put forth we see these things and we do not make decisions at this point in time because the size of the LDG. I think about how the wind moves all over the place and all and how we discuss it and it will be circulated to our leaders because it is on our land.

NT: We are naturally coming to a place where you need some answers to make better informed decisions and one of the questions that we wanted to explore while we are here is what are the sorts of things you need answered that will make you more comfortable

about putting the PKC in the pit? How will the wind react within a contained area? What are the prevailing winds in the pits of LDG? Ones that came up yesterday were mainly about fish and how deep the fish would go, are there any other questions you need answered to make you feel more comfortable?

WL: I have flown around the Northwest Territories and Nunavut on staking jobs and sometimes in the chopper it is very windy so you look down into ponds of water and you cannot really tell exactly where the wind is coming from but if you look down into the water in a round pond and you will see that the water closest to the edge is clear as glass. But after you get so far from the shore, the wind ripples the water. This is very windy times and I always watch the water to see where the calm place is and you can see how hard and which direction the wind goes. This is on flat land I am talking about. Here we are in hillier country. You have an 18 feet high wall there, the dyke goes around these pits. If you get wind coming in, it might not hit the water inside the pit, it might just go on top of it. But with a dyke like that, it is so high I doubt there would be water disturbance. The higher the hill or slope, the wind will follow it and go up and over. I cannot see that there would be a lot of surface movements. Even though there are notches, they are very small. There is not a great concern about wind because of the height of the walls.

JB: Any other questions or comments? Any other questions we want answered before we make recommendations?

LZ: My friend Wayne is talking about the dyke, by the open pit, if you have a little opening the water will circulate through the openings, plus the dam is not going to move so as the wind picks up, the water would flow back and forth through the opening. I believe he is correct in what he is saying and the PKC being put back in the underground the cone section, it would be good if we do not use the slurry right now, maybe they are using chemical, in the past. When Pièrre was meeting with us he was talking about testing of the slurry and he was correct in saying that so I just remembered and wanted to share.

JB: His recommendation about the slime being tested was followed, it was a good recommendation, and we know have the answers to his questions.

CSB: If were to fill it with the slurry and water, if there is water disturbance and the water is always moving, would it mix with LDG water moving back and forth will it affect it in the long run? What then will happen? Because water is not still it is always moving and that is my question. Will it affect all LDG, there might be 100 meters on top but still it will find its way out somehow, it always does.

JB: I want to check with the young people too if you have any questions you need answered before we make recommendations. Feel free anytime you have questions or comments,

sometimes young people come up with the best questions. Any further discussion at this point?

JH: You are saying that once the carrot and the mine of the pit being filled with PKC and the slurry part and then being filled with water. And then we are suggesting that there will be some monitoring happening to see how it settles. And then we were talking about volumes of water earlier, it is like 7.5 million cubic meters just for the carrot and then the top part was 25 million cubic meters. By picturing that, if we take the weight of the water it would put pressure on the PKC on the bottom. So, we know from the science part, anything in water can also put pressure and fossilize other stuff. I was wondering if you come back with an answer to see the weight of the water, the 30 meters to find out the weight of it and how it would compact the pressure of the PKC into the carrot. Because water is heavy, when you go down to a depth of water, there is only so far we could go and then we could not handle the pressure because of our lungs. When you look at fish that swim in deep water it is because their lungs can handle so much. I remember when we were doing fish camps back in lake area, the elders knew where fish go because of where the water goes. I was thinking of getting a visual idea to understand the weight. The movement of water down below could be different from the surface. It gets darker down below and there is not enough sunlight so it will reduce growth as well. Just want to find out some numbers.

NT: It is exciting to see these two ways of knowing, coming together, I think we are getting a good list here. So far, we have: What are the prevailing winds in the pit areas and LDG? How will wind react within a contained area? Do research to see if anything grows under water with the PK. How will water stay healthy if it does not move at the depth?

We do not know how it would react with water and fish, better to have sand or gravel at the bottom of the pit. We know that on land we cannot put anything on the PK without it sinking but is it the same case underwater? How deep does light go? How deep will things go? Could we pack the PK to increase the weight? Would suspended PK eventually mix with water in LDG? How will climate change affect PK in the pits? We have some time to look into monitoring and watching to see what you guys want to see before PK goes into the pit. One suggestion so far is to monitor how the PK will settle. One that came up yesterday was what about PK in 154 instead of 418? Rather than putting all the PK in just one pit, spread it out between pits. Is that right?

KA: It was to take the PK slurry to the top of 418 and then the remainder can go into 154. But there is a timing problem, because 154 is still in operation, the closing of the mine, so those are clashing. My question is can they make extra time at closing to put the remainder of the slurry into 154 at the end?

WL: Maybe we could find out exactly what kind of fish inhabit this lake. Exactly what are we dealing with?

NT: That question and the question about wind, we can break out into a couple groups with some maps to see if there is something, in terms of prevailing winds and the kinds of fish that are in LDG and how they behave. Do we feel like we have a good feel on what makes us feel comfortable for more information needed?

RM: If this thing happened elsewhere in the world, is it healthy for the people, plants, animals and the lake?

NT: I think that is exactly the question everyone is wondering. It has happened elsewhere in the world where they have put the processed kimberlite back in the ground. But it has not happened like at Diavik in the situation where it is in the lake.

JB: There is no other mine that has been constructed on an island like we have over here. That makes it harder to compare other experiences, even Ekati is not on a lake it is on the mainland so it is not going to be the same.

NT: In that case, it just becomes an inland lake surrounded by land. Whereas here, it is a lake surrounded by a lake; a lake within a lake.

END

Traditional Knowledge Panel Session #11, Sunday, May 13th 2018

Opening Remarks

JB: One thing some communities do on Mother's Day they really treat the women good, and they serve them, they bring them food, water, coffee, tea, it is in recognition of how much we appreciate our mothers. So, if we could just remember how important our mothers are to all of us so we could take the time to honour these women. Today we thought we would start with a sharing circle, go around the room and share what they have been thinking about and feeling the last couple days, if you want to talk about the tours that is fine and if you want to talk about whether or not things have changed in your mind with the discussions we have been having about the PK, if there are thing as you saw during tours that make you go either way in your thinking, that is okay.

NK: When we went underground yesterday I saw a really big hole, and then we only went to a couple of them and there are so many in those two pits and they are really huge, we saw so much water pumping out every day and it made me think again if they put the slime in the underground mines, there is so much water being taken out every day from the tunnels, and we are thinking about putting slime into there and if they quit pumping water out I feel like slime is going up and in the pits. Maybe if they put the slime up where there are no tunnels that might be better.

BA: When we went to the process plant, I saw a lot of conveyor belts being used for how they split it into fine material and how they take the diamonds out, I do not have a lot to say about that. What I saw is it is really dusty, all the time I have been coming up here I never woke up with a plugged nose and now I have the sniffles from the air on the process plant. It got me thinking that the people in there should be wearing masks because they are breathing all that dust in there. If I was in there working, I would be wearing a mask because you have no idea what kind of metals and soot are in there from the process. With all the PKC that I saw being processed, there were big plates in there and we got to feel the PK. When you ground the PK it is soft for a few seconds and as you move it around in your hands it breaks down further, I do not know about putting it into the pits- maybe somehow from being warm here black stone makes heat and keeps the heat and in the pit it is cold but I don't think it will solidify again and when you put the water there will be so much pressure and when they put the water see they are putting out in the future, there is always seismic activity, maybe the grout will become loose again with the water I see it reaching out into the fissures, maybe they will not see this and some of them might not be grouted well and the pressure might cause leaking and depending on which fissures are open like the ones you find going to the ocean, once you take out all the freezers in there it is going to soften up the bottom- what is that content on? Is it loose? Is it soft? Once you take those freezers out and it warms up again, the bottom of the cement wall will be really solid and last for a long time but because of that seismic

activity we feel up here if those walls cut loose against the walls will come open and even though the water on top will be clean and the material on the bottom will not be.

WL: I was going to talk about the process plant but BA covered it. The couple things he did not mention that really did surprise me, it was not as dusty as I expected and compared to the other mines I have visited, we didn't get masks, but after we were walking around we did not really need them all of the air coming through the crush rock was wet and we didn't need a dust mask or anything. Metal mines are very different that diamond mines, I really appreciated the tour, it was interesting to see.

KA: I had the opportunity to go underground yesterday and I was very impressed, I was terrified in the beginning but gathered up my courage and went and I am glad I did. We learned a lot when we went down there and the one thing I noticed was those tunnels are wide enough to get a truck through and wide enough for two of those little vehicles that transport people to pass but those walls are solid there is no crumbling involved in there except for the few areas where there is some water seepage. When they come to an area that has the water seepage they have a grouting machine and they force grout through those holes that goes into the hole that sets and structured the hole, they are sealing a hole. So that crack that Colleen is drawing, there is no water that come through. The operation down there you will not see many people. We went down and we came to this and there is a little portal and he took us from the bottom of 418 where there is this arched opening where you can see to the bottom of the ice cream cone. It was a little chilly but very dry. We got to look at kimberlite and garnets so we continued along and we ended up at a water collection pond, the water was crystal clear and no weird smell at all. They explained to us that all of the water seepage is pumped up and goes out to the north spout for about 60 meters and it goes to the north inlet treatment plant and they do a lot of testing. It was a nice eye opener because we often wondered about the water in the mine. The next thing we knew we came out at the middle of 514 it was a really good tour and I don't think we fear anything seeping because those rocks are so solid.

KE: Sorry I was sick, what I am hearing is very interesting. I am not sure what to say, I didn't see anything out of the ordinary. I was here before and nothing has really changes that much as I see. I do not have much to say about that, I will keep listening here.

RA: This is my first time coming to a meeting like this. I haven't said much because I didn't know what was going on. But to go to the process plant, the guy gave us a lot of information, a lot of walking and stairs; that I did not like, good for young people but not for older people. I feel they are doing a really good job, they complain about it but I will tell them back home. They say that they are going to so that if it is safe for the other pits and if it is good for the animals it is good for the people. I agree.

MB: At first I wanted to check out the underground then I changed my mind, because I got an email to do training for process plants so I went to check it out to get information on what they were doing. It was nice to see the machinery just seeing that the diamonds are in there just moving up the ramp. This is my first time here, and I have not said much I was trying to wrap my head around the PK and the PKC. Before I left Whati, I was not sleeping well, but now I feel good. At first, I was shy and did not want to make fun of myself, but I understand now, I really feel you guys are doing a good job with everything and I do not know. I am thankful for being here and I am sorry I do not have a lot to say, it was a short tour and it was great. Thank you.

LZ: We went underground. At times when we come to these meetings we did not know about the underground or how it operated. We were given the opportunity once we went underground we did not know where we were going they are doing a lot of work, they are working with water, a lot of machinery and equipment, there is so much work in the underground. We have seen the drips of water and we saw the haul trucks underground and they would pass us by and we would go into the little turn offs, once the clean-up happens without all the infrastructure underground, what is going to happen with the infrastructure? But it was a good awesome tour and on our way out they took us out on the side of the A154. We exited the other side of the pit, when we talk about reclamation and the PKC and the size of the underground, it would be good to block all the cracks before they put into the PKC, block all the openings where you can see to the outside. Thank you.

JB: You can talk about what you are feeling about being here and what has changed.

CSB: Happy Mother's Day. I was called to this meeting by my wildlife workers. I have been to other mines but not here. I have a pretty good idea about what is going on, how we are putting the closure of the mine, it would be much safer underground instead of on top where animals can get at it. Mother nature usually looks after itself and our elders tell us that the earth heals itself, it came from the earth so if we put it back in the earth, it belongs there. PK it is heavier than water, I think they have a pretty good idea of what they are talking about. Before coming here I was pretty reluctant about if they respected us. But this one here is the goodness of the land and the people matter to them. To my understanding, it will not rise to the surface, if it is put in the shaft and kept in the cone, we can depend on mother nature to heal itself.

DTE: It is not my first time being in the mine, it is not my first time being in a reclamation meeting, but yesterday when we went to the pit and looked down to see the open areas, I was thinking about what PKC and PK do once you put in there. I am not just thinking for me or down the road in the future. Anytime I go to a meeting like this I worry about water; if something happens to the water it will be the end. Even after the mine closes, people that live close to this area are going to be coming to hunt. What is going to happen

to the animals? If you go out into the tundra you can see a strange person walking around with their canoes and they do not know about the area, what is going to happen? The good thing about the PK and PKC is that it is not like a giant and that is very good. I also have been thinking about a guy was talking to us about ice ridges, if we put PKC and PK in there the PKC would stay warm and the ice ridges would move because it is hot and the ice goes up. Which is the best way to put this PKC and PK in there? And thinking about Elders that went to a meeting, I am only the alternate and I am speaking for them while I am here. I have to think which is the best way things will work for the future. Sitting here and listening to all of you and putting our heads together and we work hard, things will work for us, but if we do not work together, nothing ever works out. People that go out hunting on the land, that is important to them. People who live in their community and do not travel have a hard time. That is what the elders talk about at home. I do not stay home, I travel with my son and I watch anything that changes and I write it down. I watch those things. Even the ice ridges that come close to our community, I write it down. Those are the things we have to watch down the road. Even the caribous that have come back. Last year I went to Ekati, they just came back there too. It takes them time to deal with the noise. And the fish, well we cannot see them because they are under the water. I am glad to be here, to get involved in the closure of the mine. Thank you to everybody who put their voice out and it is good to listen and learn from each other.

JR: I am happy to be here, I like participating with the mining company. I have done a lot of tours with the elders, they give us good direction, **knowing the land is important, it was rich for white fox, we did not know it was rich under the ground,** the elders give us a lot of good approaches, they have not seen a lot of changes, but remembering that the land is very important to them, things that are coming are new. I have been a middle man, I am not siding either way but I try to support and cannot really add anything more. We are here as communicators to give advice to the company leaders and the grand chiefs. I agree with my chief and I am below them. The work I do as a communicator thinking that I agree with my leaders and I respect them and I agree with the government and industry and I do as I have been told. I am not a leader I do not make changes but I like coming here with the elders. We did a lot of research with the elders in the past and the geologists and a lot of I will go home and share what we have learned. I know how the governments and territory industry. I cannot speak for them, but I am here to make communication happen, I ask a lot of questions and will report back what I have learned. One thing the elders thought for this morning was that we should have had a church service. Thank you.

PH: I am one of the communicators for the Tlicho Nation. I am trying to assist the elders as much as possible to communicate and direct them on what to do. While we were underground on the different levels, one thing I learned about the underground is it was a safe environment. There was a controlled spray so it would prevent the silica from being breathed in by the underground people. The way they pump the water at different levels

was all explained to us and some of the questions the elders asked and the guy, Peter Gillis answered any questions the elders had, it was almost like jet lag when we came out of the underground, it was a really good trip, we enjoyed it. Thank you.

JB: Regan was very talkative one on one and with our guide and it seemed to me that he was very open to learning and very curious. Some of my own observations and some of what I learned, I was really impressed with the safety measures and there was lots of backup plans. It was very clear to me that the safety was important and the safety of the environment and the water was a major priority. It is not only the systems that are in place but the attitude as well. It helped build my confidence and my trust, I feel very good about that. There are a lot of technical things that I do not really understand but understanding the basics and the commitment to human values that show up are the two things that make me feel good overall.

NT: I was lucky to go to the process plant with the smaller group and Joanne and I had a laugh because we tossed a coin for who would go underground and I lost the coin toss. I was disappointed at first but I was really pleasantly surprised, I was very interested to see how the diamonds were processed and retrieved from the kimberlite. Our group was very curious and I was impressed. We thought we had gone as far as we can go once we got to the top of the plant but Wayne pushed us one higher level. It gave us a really good view of how the plant is a well-greased machine. Lots of safety in that place.

I want to say happy Mother's Day to everyone. Thanks for sharing your thoughts. That is a very good way to start the day. Thinking about if the processed kimberlite goes underground, what would you like to watch and monitor? We also talked about the fact that we might need a little more time to think about that basic choice: at the end of the day we have this processed kimberlite, so what is the best way to deal with it? Is it to keep some on land, put it underground? What I am hearing is that there is less concern on putting the PK back in the pit. But perhaps we should discuss that more if we want to come up with more recommendations. There are two ways we can give advice to Diavik in the past. First, the recommendations are very clear and straight forward about something that they would want or like to see happen at closure. The second is to provide some strong advice in guiding principles. For example, last session, one of the pieces of guidance you gave Diavik was that we would like to talk about putting the PK underground. You said you were not ready to make decisions, but were ready to give some guidance and some issues that can be resolved. Are there more questions now that we have gone underground?

WL: I think after this tour, there is more reassurance that this containment would be the best way. I think it dispelled a lot of fears about what could happen underground. I wish BA would have come down with us on the tour. Maybe we can send him down tomorrow. I think the whole group feels that taking it off the surface where it could be dangerous for

animals and putting it down below. Because if there are major cracks that they can fill with cement, might be a good option for keeping the mess contained. I think the water will be okay for the fish to pass through the pits. They breached the dyke and gave it water flow. It would be good to find out how long it would take for things to grow, the underground tour might have changed people's minds.

BREAK

JB: There is an offer from the underground supervisor, James Sovka, to come after noon to answer any questions you may have. BA can ask his questions then. Afternoon sounds good. It is a good chance to ask about anything technical, and what we can expect with the PK being put in there and how they would deal with that.

Natasha mentioned that we could get our heads around what we want to do with PK and monitor it after closure. Are there things we should be watching for? Not in terms of the challenges in managing the PK, but is there any testing we would like to try out? As we move along and learn from that, is there any ongoing monitoring we can establish and how that might be done? Do people want to continue with sharing your basic feeling about things at this stage, is there anything you want to ask for now or any other questions you have related to wind perhaps and how it might impact how the dykes and the water contained within those dykes? Is there anything we want to know regarding how deep fish might be going? Where it is that we want to avoid placing things that might harm fish?

BA: With that screen maybe helping PK, keeping it on top of the PK to collect its own sediment and organic material, nutrients from the land and the wind going into the pit maybe that could be done. You see all the screens holding the walls together, you see a lot of screens maybe if we could maybe have screen in the bottom that could hold the nutrients to help things grow on top of the PK, in my mind I see it only becoming helpful, nothing I will be sitting on top of it so maybe a screen would help. I can see it can be done along the walls it can be done in the pit. You do not want the walls falling on trucks and on miners. That is one of my ways of collecting sediments in the bottom.

JB: We could ask if perhaps some tests would be done to see if there is a size of screen that might be effective in some limited containment, recognizing that it is going to fall to the bottom. Whether that system might support growth of vegetation.

NT: I was thinking about what you said yesterday about the screen and the liner under the PKC. Have we thought about the pit and the PK coming up to here, could they bolt a

thick fabric to keep the fine materials on top? And keep only the water from going back and forth. Is that sort of what you are thinking?

BA: It does not have to be bolted down. The liner could be on top of the road and be help down by rock. It does not have to be a bolted down onto rock itself. If we could put liner on top of those roads and then cover it just to keep it held down just so we do not have to worry about the bolts coming apart.

JB: Any other thoughts?

DTE: In the pit, are we putting PK or PKC first?

NT: Just PK. PKC just refers to processed kimberlite containment. PK is just the actual stuff in the jar.

DTE: So, if we fill it up here we should be monitoring it, if we put a rock in there it is going to sink. A few years down the road, we try another one and see how far it goes. If it goes down quickly, that means it is not going to stay on top. So that is how you monitor it unless it hits surface. The worker said it does not get cold enough to freeze, so we have to monitor it for a while and later down the road things will grow and we see grass and willow and fire weed. In winter, we have ice pressure so if the ice pressure comes up this way and it moves it will ridge, so we need to monitor it. Masi cho.

JB: So are you suggesting that after the PK is placed in the pit underground, that it be left open for a period of time to monitor it before it gets covered with water?

DTE: Yes.

KA: PK right now, we always refer to it as a slurry or toothpaste consistency. With that said I am thinking its consistency will never change. It does not freeze or thicken it just has weight so the water in the slurry comes to sit at the top. Once it is in the pit it will still have the consistency no matter how far down the mine. Throwing a rock on top would be like throwing a rock into toothpaste; it would push the slurry up the wall. So maybe when Steve comes we can ask about the freezing and the tunnels and what will happen with this stuff when we put it in there. Some of the walls will close some of them will be open so that the air can come out, so the slurry can sit inside the tunnels they have made.

ML: Excellent suggestions.

WL: I was thinking about what Terri was saying about the testing of the PK. Maybe the time to test would be after the water is in there and maybe after the millions of pounds of pressure, the consistency would change. The pressure alone could change the properties of that.

JB: So perhaps the period of time we monitor before water is placed on and then a period of time where we test and see what is happening after water is placed. I wanted to check with Dora to see if you wanted to share anything you saw at the pit and earlier we shared what we experienced if you want to share anything about that you are welcome to.

DW: The open pit mine that we went and toured it was spectacular to see, we only hear about it. Now we are speculating what is happening in the future, I think if the PK goes into the mine shaft I am thinking that maybe we should mix it with some natural materials as well.

JB: We should ask the underground supervisor whether it is any soils that are mixed in with the PK and what that might do to the PK.

KA: I was wondering will they be back filling the tunnels before they flood it?

NT: One of the options being considered is placing the PK around the tunnels and all the way down the carrot. The option is to put the PK down there and to put water on top as a way to keep the material down there because of the weight, that is the belief.

BA: With that screen, you do not have to fill the whole pit with water, maybe what I am thinking now just fill it with water up to the screen. Maybe have it just watch and monitor it that way and see the reaction is after the screen. Maybe it will start collecting seeds, but then again, all that pressure on the screen it might break. If everything goes well and we see growth on the screen they could add more water to see the changes before you fill it up completely. You will not be taking all the water out so go slow and then you can start collecting the sediments, maybe that could be a suggestion.

KA: One of our greatest concerns with working here trying to find ways for this mine to be reclaimed back to nature is contamination. I like the idea of the screen being used to help regrowth at the bottom. However, what would it be made of, will it float to the top, will it rust, will it hurt the fish will it hurt our water? Our concern is always contaminants. We will ask our questions to the superintendent. We must think again about the factor of contamination.

NT: That is a very good point. Most people are aware of what happened with the flocculants at Ekati to help it bind together so it would not be so fine. Now they have a different problem because they realized the flocculants were not good for the environment.

LZ: The processed kimberlite, how are you going to deal with it, how are you going to put it under the open pits? What are you putting back first? The water or the PK? Knowing what might happen down the road how the dyke has been operated to now and after closure, how it will work?

JB: The option that Diavik is putting forward now, is moving PK into the mine shafts underground and we can make recommendations about what happens after they do that, about how long they should wait before putting the water on top of that but the PK would definitely go before the water.

NA: I was just thinking the slime is so clean, each time you fill up the pit with it why don't you put plants and willows between and will help to grow plants and willows.

JB: Actually put some seeds in the PK?

NA: Even half way, and even at the top too, if you put plants in anything wet they will grow.

KA: Only if there are nutrients.

NA: If they put all that slime in there and then they fill it up some more or anything that way that will help it grow.

KA: If those plants do grow, then they are still going to fill it up with water and there is no use in those plants growing anymore. Because they are not underwater plants, they are land plants so are you just trying to find out if the slurry will grow something and then other plants will grow?

NA: Yes.

KA: Okay. Thank you.

CSB: I just want to know what volume of PK it will take to fill up. Obviously, the mine shafts are wide, the cone is deep, how much PK will go underground and how much volume of water it will take to fill it up. Since the mining here started are they looking at options for that fine stuff to be mixed with something to make it be more solid. If we put it by its self it will stay hot, but If they send it out to the lab to see what kind of chemical would make it solid even natural because if you have even willows, it will dissolve in there because it is natural. Something will probably happen which will make the liquidly stuff more solid but in the long run, if the fish go back there and nothing is growing it is a sign of contaminants so maybe they need to contain it somehow so no animals can get in there.

NT: I think you are asking the questions they have been asking and trying to solve since they started diamond mining and the scientists and research they have learned so far is that when you add some chemical property to try to make it bind together you are actually do more damage because you are adding a chemical; something unnatural to that environment which can be harmful to fish and other things. This is why it is such a dilemma, scientists have been trying to figure it out for over decades. At the end of the day we have this processed kimberlite that is like toothpaste. What can we do with that

PK? We have to do something, do we leave it on the land, underground in PKC? It is hard to know.

JB: The other question you raised about the space that is needed, is there going to be enough space in those tunnels for the PK that we are both producing and have to move from the PKC. Is there going to be enough room to put that underground so that it is not left on the surface? My question is if there is enough space and how much space is really needed for that?

CSB: If there are other mines that are here, and other pipes being worked on there is going to be more so instead of adding chemical to another chemical, there are natural sources like willows or trees it will eventually dissolve and that is not going to add anything dangerous, we use those trees for wood and we use the willows to make stuff. We are adding something natural onto something dangerous and the combination of clean and something that is contaminated will be less contaminated after that.

JB: We could consider asking for ongoing tests. Continue to see If there is some way to create stability with the PK while making sure it is not toxic.

KA: We keep coming back to the toxicity of this material. It has been tested and said that this material is inert, it has no chemicals, no nutrition and not toxic. The danger of the material on land is it like quicksand, so the reason we are trying to find a way to take the danger away is to move it somewhere where it will not be a danger for the people and the animals. I know we are talking about throwing seeds or willows on top of it but there are no nutrients on top of it. This material was created when the earth evolved, and now it is an alien material; it has been crushed, the diamonds have been taken out the material is pasty but we have to do something with it to keep people and animals safe. At the moment we do not know, we can ask to grow something into it. We can try to pull as much of the moisture out of it so it becomes something but when we try that it is still like toothpaste. So that is the material we are trying to deal with to keep everything safe. Our greatest idea right now is to put it in the mine to keep it away from people and animals.

NT: It sounds to me that maybe there is more information needed to encourage growth, something that can be naturally added to answer those questions. I am hearing that people seem more comfortable with the idea of the PK going underground rather than going on top of the land. I am also hearing that people still need more information. How comfortable are people to give a recommendation or guidance to Diavik that ties this idea together?

JB: What we can do is check out the general direction we want to go, these are the questions we need answered and build up to a final recommendation. We will have some questions answered this afternoon by him, and some might not, we do not have to solve this problem today, we could take some more time to do that.

NK: If all this land could fit in the pit and clean as much as possible on the land until we can walk on it again, that might be the best idea, seeing the caribou around here all this week, it makes me think that the caribou do not know it is there and that is best to clean as much as possible so it can fit in the pits it will be alright.

WL: I was thinking that if there is not enough volume to fit all the PK, that still means the surface amount will still be getting a lot smaller. Why couldn't there be bigger boulders dropped in? Eventually if the hole is deep enough you can fill it with rocks and heavy material and then top it off with something else even if you have to make a hill on top but then at least you have a foundation.

LUNCH

JB: Alright so we are still missing a couple of people, Terri will be back she is just going to check on her nephew and it does not sound like Jolene is coming this afternoon. We were mistaken about who will be coming at 2:00pm. The hydro-geologist (James Sovka) will be coming, so a lot of the questions and concerns about the water in the mine shaft will come up. There are some other general questions that Colleen said there are some answers to. Then there will be more questions that we want to ask and have Diavik address with testing or in the labs and some of those questions might take a little longer as well. Some questions will relate to fish and fish impact, some questions will relate to what can we expect from PK and what will happen to it in the long term whether there is any expectation around the change of its. its make-up and whether there is any way to know that? And what kind of monitoring we can do? Are there any particular points we want to speak about? Monitoring or watching we want to see? How it goes before water is placed on top, and what we should be looking for and how long we should be watching it? If Diavik does go ahead with putting the PK in the pits and mine shafts, what would you want to see at closure to know that it is good?

WL: When you put the PK on top of the pits and it is pumped into those shafts, there are going to be places where there are air pockets. There will be cavities and places for the air to be trapped below the surface, does this PK generate its own heat so it stays a paste? Does it have some property to keep it that way, in that state?

JB: That is a good question. Any other questions for the hydrologists?

NT: Do you mean does it generate heat or does it conduct heat?

WL: Does it generate heat within its own body? Not about transporting just within.

NT: I would say no but we will have it double checked.

KA: What is our timeline for watching? If we have the PK in the pit can we wait a while before adding the water? I think there is a timeline for this closure process, it will take one season to fill it up and I am unsure if it was one season for the entire thing or is it just one season with the water? We have to take into mind what the timeline is from that point to closure and what we are actually watching for.

WL: I would like to know what the depth and volume is of the pond that is sitting right now.

NT: They do not know.

JB: So we should ask when we can expect to know that number.

NT: It is to find out if we are open to this.

CE: Gord answered this question. There are two parts to the question. How much material of that slime and fine PK is in the PKC right now? The bigger part of the question is how much can you get at, how can you move it and how much of it can move? We have an estimate. If you are looking down at the PKC, his estimates were 300 feet wide by 600 feet long. And then deep was 50-70 meters deep. That is a rough estimate. That is just the slimy bit so you would have some of that slurry water on top that settles out as well and some of that would be consolidated, so when you move it you would get space and volume and all those kinds of things being added again because you are disturbing it. That is part of the unknown of moving it to another location. This number would grow but by how much?

JB: Would there be an effort to syphon off the water that has been settled out where the PK is settled and you see that clearer water on top of it, would there be an effort to syphon that the off the top before it is moved and transferred?

CE: It would depend on how moveable the slimes are. If they need that water in order to get it moving, they might need to use some of that water in the process. Which means it goes through 418 and then through that settling process and pumping off that water later.

JB: Has there been any experience with moving PK to other mine sites here in the North?

CE: What I know of, it is only PK that is being generated so Diavik moves PK from the process plant to the PKC from the pipeline with pumps. Some for Ekati when they are putting it into the pits. That is the only one I can think of.

KA: It is already sounding like there is some kind of settlement going on in the middle with that PK. As you said, they need that water to move the PK, so that sounds like there is some kind of solidity with all that water is gathering so there is maybe a possibility that

there is some settling going on if we will have to keep some water to move it then let it settle and then syphon it off.

CE: As you see here, this is settled, not compact but still settled. It is sitting under that pond and the anything with solids the issue is moving it. They have a pump coming in to agitate the water essentially to get it moving, to keep it moving maybe they need to add more water, who knows. Because it would be in a higher concentration there than when they are sending it to the process plant. I do not know if it would be any more consolidated than this. It is still a question of what it looks like down there.

KA: That might be something we can ask them if they know what the settlement is.

CE: Yes. Does PK generate heat? Not that I know of. We keep the water that is on top of the slimes at a temperature that keep the slimes warmer. If those slimes were at surface and did not have a water cap on top, they would freeze a little. Because we have the water, they have never frozen.

DTE: Since the mine opened they have been putting the PKC in the tailings pond, right? Do they go and check to see if the PKC hardens during the fall time?

CE: The PKC areas that are checked regularly are the dams, next in from that is the course materials that will freeze and consolidate at a surface level and the water that is in it. The next that goes out are those beaches and I remember when I first started working here, they went out to get a PKC sample to sample the water and I sunk but now you can walk on it so the outer edges of that beach have dried. And they are testing it all the time because they want to see if further down if there is ice and the consistency of it. They are sampling all the different variables with the materials with dryness the challenging part is the part that becomes the soupy slimes but they sample those regularly and the slimes underneath are it being studied. They have tested adding material to that to consolidate it. They have done a bunch of tests on it but it is not easy to get to. They mostly try to do it from boats. They have looked at the chemical makeup to see if it has toxic properties. They have dried some of it out to try to grow plants on it as a possible reclamation material but there are no nutrients in it. That are most of the tests that have been done so far.

DTE: In Ekati, they do the same thing, they put plants and rocks on the tailings ponds where it is dry. When you first walk on it you do fall in it. Then it gets harder now, they are planting into it and there are grasses growing but they are all brown. We asked why they are putting the big rocks down on top of it and they said it is only to prevent the caribou from going on it and sinking. So how come we are not working with our neighbours, so when it is dry you can walk on it but it is not good for caribou so they are trying to grow some grasses. I do not know I have not been there since but it is nice to see what kind of

changes are here. It is hard for another new person to just come in and get up to speed and understand where you are coming from.

CE: Those are all good points and it is a funny statement of who is doing best. The sites are different, there are similarities but there are differences. The biggest differences, I would say Ekati is blessed is space. Diavik is a very small site and we are on an island and do not have a lot of room for some of the infrastructures. This PKC has gone up and up and Ekati goes out and out. It is called their long lake treatment facility. They have cells that are treated differently and they place different materials in those cells. They have a much different way of managing than Diavik. Because of that, they can close areas differently as well. They have done some revegetation studies in the cells but Diavik took it out of there to put it elsewhere to see if it would help vegetation. Because Diavik has gone up and up, it would be very difficult for plants to hold in this material because you would only get a thin amount of soil over this whole area. There is not one right answer. It is just dealing with the mess in the middle and trying to figure out the best plan for that.

KA: The outside of the slurry pit, if you would flood that area with water, would the whole thing become a big slurry pit?

CE: You would try to get your level up above it but because it is sinking, you would always have that shoreline, like a beach where right before the water, you have that mucky edge on the side. The tricky thing about figuring out the boulders, was how far back to put them since you cannot put them right at the edge.

KA: What I was thinking is say there was a huge rainfall and it started filling it up and all the sand goes out to the edge where the dam is, would all that material become a slurry? Because if it all became wet would it continue to hold rock or is it going to sink?

CE: In every operation, you have a spillway, you have to plan for a huge storm event. Diavik has pond 3 so the PKC, if it flooded would go to pond 3 and be contained because it has so much space. In a closure scenario, anything that has water would have to have a spillway. You do not want to destroy whatever it is you have built up to be your containment facility. What it would mean is that water flows out of that pond and would exit the facility and go into the tundra, onto the east island and trickle its way to LDG.

BA: That one in a million rainfall has already fallen about 15-20 years ago and we almost got washed away. When I was still living in Pellet Lake, I had a brand-new shore line by more than two extra feet. When that big rainfall happened it rained for almost a month but steady, steady rainfall, the whole shoreline started giving off new vegetation, moving around. I am curious to see what happened to it now. Maybe the shorelines are a little bit different now. It is a bowl, anything you put in it, it is going to come up, any rainfall or snowfall will rise in that pond. Last year in BC we saw that big pond and steady, steady rainfall and that whole tailing pond breached and it headed to the ocean. If anything

happened again like that, with all of this snow we are having and later the accumulation of snow, this is the longest the snow has lasted in May. Snow used to melt in the middle of April when we were collecting hair samples from wolverines. The winds were so intense. There were big cement bags across the lakes and I have seen plastic bags blown away. I have seen wolverine scat with plastic bags in that scat which says to me that they got it nearby so I felt it came from the mines, this was before the big incinerators came in, that is where I saw all the garbage. Wolverines and foxes getting in there all the time. I can see something like that happening again maybe in the summer. We have had this steady snowfall and maybe we will have floods appear again. I wanted to mention how it could happen again and being almost half way into May, this is the longest time we have had this much snow in May. Thank you.

JB: Are there other questions we want to put out there for this person that is going to join us?

DTE: In 100 years or so, doesn't the water just run into places? There are places that the water fills the land, like big floods, can that happen too?

Unknown: I think she is talking about how, with climate change and global warming, she expects water levels to be coming up overall.

CE: That is generally the prediction, I thought I read somewhere about it being opposite in parts of the north where they expect less. One of the technical challenges with the current PKC closure, it has that pond in the middle and it is actually having enough water to keep that pond a pond. That is one of the things for the current closure plan that Diavik is workng on is how to keep that water in the pond.

JB: When we are down in the mine shafts there was a particular area where there was a very powdery material on the ground, do we know what that is? Is that a dried out slime?

CE: There are no slimes underground, right now. We use something called shotcrete on some of the walls down underground to add additional strength and that is a powdery material so it could have just been residual shotcrete that could be still on the ground. It could also be just rock that has been moved by machinery, so fines and crushed.

KA: At the bottom of 418 where the little stalactites where it probably is shotcrete because if you looked up there were all the bolts and the screens on the ceiling. When I asked Steve what they used for the road gravel and he said regular crushed rock. I thought maybe they would use PK but maybe that is too soft. They do not want that slurry, slippery mess on the roads down there.

CE: He said that was a geo technical active area so I am sure they take triple protection steps to make it is as safe as possible.

JB: There are sensors in place to monitor any movement and I was interested in knowing how long those sensors are going to be watched. What they have noticed with that movement and if they will monitor it after the closure?

WL: The reason why I am wondering what is happening with that PKC going into that pit is because maybe we can just add water to it afterwards and slope the edges and then the water can just cross so there would be water just like in that pit. Instead of trying to fill with rock we can make it into a dead lake. Make it as high as we can get it so there would be no remaining stuff.

CE: If the concept of putting PK in the pit and/or the underground is supported, then that is when they start to look at closure options for the PK in the PKC.

WL: There is no guarantee that there will be enough room for that PKC to go into the pit.

CE: Depends on how much you are willing to put into the pit. If you are talking about the top of the underground, there is not a lot of room but if you are talking about the pit, there is so much space. It is about how high the PK comes up.

WL: If there is no food there the fish are not going to come around there.

JB: We would like some guidance about the inside of the dyke. We have talked in the past about what we want to do to recreate fish habitat, resting areas, feeding areas and we have talked about what that would look like. We have not talked about other habitat. Whether there is anything remaining around the remaining dyke that will stay there that we should think about in terms of other wildlife. Wolverines, fox, caribou, is there anything that would help them to either stay away, or to return to that area?

NT: We were thinking that if we assumed the PK went underground and if there is that 100 feet of water if there is anything you would recommend be monitored or put in place around the pit?

JB: We have that dyke there and so what do we want to do, if anything, around that?

WL: No sharp slopes, easy access and that is really all you can do. It is a small lake.

JB: You don't see a need to try to keep them away from that area? If the PK is placed in there.

WL: I do not see how it will be a problem. The PK will be covered by water, and caribous don't swim underneath they do not like fish. They do not dive down like a seal, they'll figure it out.

JB: So, if the side is not a total drop off, they will be okay?

KA: I think we had discussed this before where we had a pit that had a high side that does create a pit after flooding. So, on that side we wanted to ensure that there were large enough boulders to prevent them from falling off the edge. We wanted to leave the 514 ramp so if they got into that pit and there was water, they would be able to come in off that ramp. We went off that ramp with the bus. We do not want them to destroy it. The caribou can use it to come out after swimming. On 418 we were okay with it because the water levels are coming up to the dam and you have the shallow side for the fish. Coming up on the other side was natural shore line so I think we were okay with it because the caribou can swim across. But we should try to clarify that again to see what those shorelines look like.

NT: I think the main question here is would any of those change if we put PK underground.

JB: When we talked about those dykes the last time, it was before we looked at what it is and what it would do to include the PK at the bottom of the pits so we are just checking back to see whether that changes anything for us now.

JAMES SOVKA PRESENTATION:

My name is James and I am the hydrogeologist here at Diavik. I take care of the underground dewatering. I was asked to do a presentation for you guys. At any point please ask questions I am very happy to answer them for you. Let's get started. One of the questions is why dewater? Does anyone know? We need to be able to mine safely. One of the ways we do that is by limiting the risk of inflow. So you get all the water that comes rushing into your mine it is going to be a huge problem for the workers. We also need to maintain the stability of the pit walls so you have the open pit and the granite. If you have too much water, it will create high pressure and they will collapse. Another reason is to efficiently handle the dirty and clean water. The floor is dirty and wet, if you were to treat all the water in the same way, the dirty way would be very expensive. One of the things that makes us different at Diavik is that we have two systems. And that is the pump station and a smaller system where we handle the dirty water. The water that goes through the fault from the lake is clean, it is just running through the cracks. What we want to do is intercept that water before it gets into the mine and dirty. To intercept the clean water we drill a hole and hit the faults to make water. We see it underground as well. One of the sub vertical faults has intact rock and then there is highly fractured rock. They can be wide and flat as well.

WL: How do you get these names for these faults? Were they there before you guys came in or did you put them there afterwards?

JS: They are named as we go, there is always a story. So, this person was very involved in the discovery of the faults. We drilled a hole down, not expecting any water, and then all of a sudden you have 100 gallons coming out of it. We named it after him, in his honour.

You are right in some sense because this Mckenzie system, those are all over North America. Some of these features are very old and very well-known but others are local. There is the south and north body of the mine and we have these drill holes and sometimes we hit the water right away and other times we hit it further out. We do not always know and that is part of the process to find the faults because they can really be anywhere. We have drilled thousands of km. Some of them will hit over 500 gallons per minute and others will be dry so it is all about understanding the geology and the faults and trying to be as efficient as possible. There are heavy duty bolts because sometimes you get high pressure water so it is important to control it and capture it safely.

CSB: Is all that water being captured?

JS: Each one of these drill holes that gets connected into the yellow holes and then these go along the line in a system and they get connected to the other pipes that get collected and sent to the treatment station.

CSB: That's clean water?

JS: Yes that is clean and it is all going to those pump stations.

NK: If the mine finishes and you take those pumps off, will it all fill with water?

JV: Yeah, the water is moved so the water table drops, these holes will be providing the way to fill the hole. When you go lower and drill more holes you dry the holes that were higher up. When the mine is done and we allow it to flood, these holes will be providing the water to allow it to flood.

BA: Why is that water being so clear is it because it is at the bottom of the lake? The bottom of the lake has a lot of sediments and this water is coming from the top. Is that why it is so clean? I was kind of thinking if that were to happen, is there some way to find out if it is melted permafrost?

JS: The water is clean because, you have to remember that these faults are quite tight as this is 400 meters deep. So, if you take that 400 meters there is a lot of weight of water so if you take this water and you will find chemical indicators that tell you it is from the lake. When you first drill the hole, you are not hitting lake water, you are hitting water that has been there for who knows how long. So, this is quite deep, we call it dinosaur water. It is much below the permafrost and the lake acts as a mitigating factor the permafrost is mostly confines to the upper regions most of what we. The permafrost is only present when there is land mass.

KA: How deep are those drill holes going?

JS: They are 150 meters and the deepest we have drained is about 300 meters down and they are mostly in the horizontal ranges it depends what you are trying to hit. If your fault is horizontal it is best to hit it with a vertical hole, and vice versa.

RM: If you take all the pumps out of there, wouldn't that water come up?

JS: Exactly. That is a great transition into the next slide. This is the water table. We have the ore bodies, a bath tub where on the edges is basically the lake.

CSB: If you take all the pumps and everything out of the hole and they put the PK in there, so the ground water would mix with the PK? What is your prediction if we had to fill it up, how much water would it take to fill it up?

JS: The plan is once we have extracted everything from the 418 we will then start depositing PK into the pit and your water level will rise too. What we would do is we will allow the water to come back and have a barge on the top of the little pond to maintain water level. Because you are right, if you just turn off everything, it is going to go all the way to the top.

CS: They said they will open the dykes and let the water in and now it will have more water coming back. What will happen in the future?

JV: In closure when the dykes gets breached and allow it to go back to mixing that water, will instead of going through the fractures and then up, it will just go across. It is the same water. My understanding is that before they breached the dykes, they are going to do monitoring in the water to make sure it is clean.

KA: When we were down underground, Steve was explaining yesterday that they would put grout in through high pressure to fill in those cracks so they could continue drilling through that. So, you do not do that with all of these?

JS: When we were developing the mine, it is much deeper than what we have the water table to. When we cross the faults, if you do not grout it, there will be water everywhere. And that is your lowest point and then all the water is going to want to go everywhere. And now you have water that goes all over your road and is now dirty. The drain holes capture that clean water before it gets mixed into the road. The influence on the grout is actually really small and can only really push the holes so far. So, you will have a dry area in your tunnels. But it does not seal the fissure, it is a cocoon around your development to protect you from the water.

KA: He said they are 5 to 8 feet deep and then they work once it solidifies they continue mining through.

BA: What about winter time? When you fill it up from the water itself then come winter the ice is going to push down again. What happens with that pressure, what happens if they crack again? Maybe what I am worried about is that PK moving through those crack holes and into the lake itself.

JS: Whenever you are thinking about water, you have to remember the highest pressure is going to be the lake. There is so much of that water compared to what we have here. It will always win the pushing contest. That is why we need the barge. There is also so much rock pushing down. So, the PK and the water will not be able to pass through the faults. Maybe a little but never cross all the faults because it is so tight.

BA: When you see the pressure ridges and fault lines coming up from that carrot it is going to have a lot of pressure needing to push up too. In the pit and in the carrot hole, are the fault lines at risk because of the pressure?

JS: You have confining pressure from all the water around it so that will help maintain the integrity of the structure, it is even and surrounding areas, it is an even pressure on all sides. This is called isostatic pressure.

DTE: I want your help understanding the PK, so when you put it in the cone does it stay warm or does it freeze?

JS: It would not freeze, it is too deep down.

DTE: I only went in the pits I only went halfway I saw frozen ice dripping out, so when its finished and the PK goes in there what happens to those cracks, what happens to it?

JS: The water will become clean over time as long as you let it sit there and it will not be moving because you have all the isostatic from the lake. It will slowly settle. The only reason its ice right now because it is exposed to -20 air. The PK would probably reach that 2-4 degrees.

DTE: So after it is filled up with PK and water and open the dyke will it be moving around in the pit?

JS: Right now, there is water that we are moving but we are draining. Because the lake is much higher than where we are in the ground. I believe they have a proper plan for sediment reduction once they open the dyke.

WL: If there is a big storm how far down does the water move?

JS: Nothing moves below the surface, maybe a couple meters would move.

WL: The PK has to be moved so if you filled the pit to 100 feet from the surface there would be no way to move that PK. What is the maximum depth from the surface that can we safely put this PK before it might mix and get into the water table (30 meters)?

JS: Because we are not actively dewatering, the water would always want to be at lake level. You could pump it down but, why would you?

LZ: We are talking about the processed kimberlite putting it back to the underground. It will not go as high as the cone but when we cap it off with water, because of the steepness of dyke is too much the animals would not be able to climb up. The water that seeps underground and they take out all the pumps from the underground what would take place?

JS: When we take out all the pumps and the infrastructure that is pumping the water it will naturally fill up because it wants to be the same level as the lake. Right now, we are creating the artificial draw down. But once we stop doing that it will be the lake and it will naturally fill back in. We will be re sloping all the above water.

CE: There are some areas in the pit that come to natural ground. There is on in particular I think he is thinking of on 418, about 1km long very steep drop. We have talked about cutting that edge to re slope it and allow some access in that area.

LZ: As a person of this land and the amount of development taking place our future generations will be working and living on this land so we need to make sure we keep it safe. That is the reason we come to this traditional panel each year. Thank you for sharing your knowledge.

JS: I agree whole heartedly with that. Thank you.

KA: How is that going to mix with our plan of trying to get the PK in there if it is filling up with water?

JS: That is something we will have to coordinate. Things will need to be removed systematically. You only take out one pump system at a time so the water will rise gradually. They will do it piece by piece. With the deposition of the PK in here, you will want to keep the water level above the PK, it will be a coordinated effort in tandem so they do not get ahead of each other.

KA: I had envisioned a dry carrot and that they would be pumping in PK naturally and add water on top. Now that we have water seepage, would they add PK, let the PK settle then take the water table.

JS: It would be very similar to this jar. Add your PK, at the same time allow the water table to naturally rise. You want to build the PK up so it is nice and stable. You would not be

actively de watering because that would cause too much water. You want it to rise at the same time.

KA: We are worried about the air pockets while it is being filled with PK, would you leave it there or try to pull the air out of the air pockets?

JS: You would never have an air pocket if you have the water above the PK. If you did have a pocket, it would be filled with water.

KA: Would the air pocket seep through the fault line?

JS: Because of the water? No, because these faults are currently open to the air. It has more than enough time to move its way out. The faults are pretty tight so not sure how much air you would see.

KA: And of course, with water being thinner than PK, it would not be a problem.

NT: One question was around climate change impacts. Can you talk about how climate change would impact that PK scenario?

JS: The North has seen increase in temperature. It will still freeze in winter. Like we said earlier, it will not affect the PK because it is too low underwater. If it is frozen or not, should not affect the PK. So, I don't think there would be any changes due to climate change.

NT: How will water stay healthy if it is not moving in the deepest parts of the pit? There is the idea that stagnant water is not healthy.

JS: If you did not have any PK and it was just water, you would have to ask the biologist about it. My gut feeling is that the fish would not want to go that deep. Usually the fish want to stay closer to food, sunlight etc. You do not have anything in the lake that is that deep. It is a really good thing to re fill with PK because then you do not have any issue with new species going down. This would be a change from the typical lake bed and I think it is a good idea. You will not get that temperature blocking column.

BA: I have been fishing these lakes my entire life, the deepest part of the lake is the best part, the biggest fish. Because of these deep holes we put some inukshuk there to point at the hole. You would be surprised how deep they go and how deep we catch the fish. The need for inukshuk is great, we need them to point us to the best fishing and we want to find them and mark them again. I just wanted to give you an insight on how deep we have fished in the past.

DM: I understand, but my hearing is very bad, if you do the reclamation work in the underground it is good to hear from all of the representations. If they do the 3:1 slopes and take care of the island to make sure the wildlife are well taken care of into the future.

There are less elders but there are young people that are coming and the future generations and it would be good to have a good reclamation plan to protect the future. Water is life, we love our land, we like to see the beauty on the land. Thank you for working with us to keep our land beautiful.

JS: Absolutely, our plan is to make a good place for the animals and wildlife to be, protect the water and ensure water quality, that is all very important and I agree. Thank you for having me.

WL: Has this portion of the lake around the island, has it ever been mapped out for the depth? Can you remember what deepest hole is?

JS: The deepest part I know of was called "deep blue" and that was close to A21. Actually, within the A21 dyke. You have the A21 and then just below it you have deep blue which I believe was 40 metres below surface.

WL: If these holes were completely filled to 135 feet deep that would be sufficient, right?

JS: They are doing some environmental research right now with mixes. A PhD student was taking different mixes of her homegrown soil and she had just rock from the north country rock pile and then she had one that was half rock, half PK. So, she had all these different examples to see what is the best way to get the plants to grow, using local plants as the test.

WL: So dirt or rocks will not be necessary?

JS: That looks like lake bed sediment to me so it would mimic the lake bottom pretty well.

WL: So, there is no use breaking our heads over what we are going to plant in there. Thank you for your help.

NT: Anything else?

WL: I was thinking if we could get an estimate on how much more PK will be made from now to the end of the life of the mine.

NT: We can present that tomorrow morning. I will pull up pictures too.

END

Traditional Knowledge Panel Session #11: Monday, May 14th 2018

JB: Good morning everyone. I hope everyone had some rest. Just a note that Colleen has posted some information up here that gives an estimate of the PK (processed kimberlite) fines that will be produced to the end of the mine. Some details up there. Colleen did you want to walk through those?

CE: Sure. A couple of things I guess. On the PK fines, that was in response to your question yesterday.

LZ: It would be nice if we converted all this stuff from the new system. ..yards, for the older crowd, that metric system is good for the younger people who grew up in school.

CE: I don't even know my height in centimetres! Thanks. Sorry about that. So for the PK fines that are up there. This was in response to Wayne's question yesterday over how much more will be produced over the next number of years of mine life. I just want to be clear. That is the total PK fines. It is also an estimate. So, those who went in the process plant the other day see that the ratio changes depending on the material they get. How much coarse, the rocky material, they can make vs that fine liquid material that they can make. So some material shifts. Also not all of that fine becomes slimes. So some of that settles out on the beaches and some of that is like a watery slurry substance as well. So I just want you to understand 100% what's behind that number. The next section on the board I thought might be helpful when you guys are talking about your ideas and recommendations about the questions that you want answered for this project of moving PK to the 418. I wanted to share with you some of the studies that Diavik is starting and is already doing as well. They are going to be looking – remember when James presented yesterday with the bathtub that surrounded those shafts? - So they're going to be looking at how the water table moves when they start filling 418 with PK and water; what the effect would be on 154 as it comes up. So how that will change that water flow into the other pipe that they are still mining out. So they need to understand that balance between the two areas and the dynamic. The other thing that is really important is making sure the stability, the geotechnical stability of 154 is able to be maintained while they are putting that material in and filling 418. So when you are talking about those pressures, like James was talking about yesterday, you want to make sure that pressure isn't going to cause any issues with stability of the underground or the pit. For those who went underground, you saw a very small bulk head – that door you walked through, and you felt that crazy wind when you opened it up for the ventilation system. They'll be looking to design much bigger bulk heads that would go in those areas between the two pipes, like where we cut over to go from 418 to 154. So, they would block that connection so that the PK material didn't flow into 154 when people were still working in there. They're also looking at the

pipeline design. So, what the pipeline needs to look like and what the pump system needs to look like to move PK from the process plant into the void of 418. And the last one aligns very closely with your recommendations and concerns. They do what's called modelling in science, so they basically take a whole lot of information and plug it into a machine or a computer. Like a program that gives you predictions about water quality based on all of those inputs, like what's the quality of the PK? How much water is coming into the mine? What's that quality? And they put all that information together and the model spits out what you can expect from the water quality of Lac de Gras. So they're doing that as well, trying to get those answers. And that's it.

WL: If you were to take, but you don't really know on a PKC (processed kimberlite containment area) how much of that sludge that you can retrieve, right?

CE: Right

WL: But say you were to take an estimate, do you think that what you can get out of that PKC plus the other stuff here that's going to be produced, the PK that's going to be produced, could you fit it all into that one pipe? And approximately where would that line be from the surface of the water?

CE: Right, so, all I can say for sure is that so far, from the estimates, they expect to be able to put all of it into the 418. So that's the expectation right now. But still uncertain exactly where that level would be just because of not having confirmed numbers around how much from the PKC they would be able to add into here. So, I can't 100% say what that level would be or how deep it would be from the water down to the PK if they put everything into the one pit.

WL: But if you were to load it into there. I realise you don't have any numbers on the recovery from the PKC, but you could still, if you were to take 100% recovery, the volume of PKC and the PK that's going to be produced, now, it could all fit in one pipe and according to the numbers that you got here and the other one, if you were to take it all 100%, which you aren't going to get.

CE: It would all fit; the water, slimes and some of the fines.

WL: It would all fit into one pipe and you'd probably still have 100 feet of water on top.

CE: I just don't know about the water piece. But yes, everything would fit. That's what they're working towards. So far Diavik is working towards 100% of the slimes going into the one pipe. And then there would be a cover of water on top, whatever that number is.

??: …laughter. …He's assuming

??: OK, then I'll say something. What he said. We're looking for 100 foot cap on top of that. Ekati has a 30 metre? – they're about the same.

CE: It's about 90 metres.

KA: So we still have a lot of footage to play with if everything went in there. Because as James said yesterday, if the water is rough and you dunk under the water, it's still, so nothing is moving. The difference being between Ekati and our pit, is that theirs is inland, no fish, and ours is going to become part of the lake with fish.

CE: Correct. I scuba dive and I can confirm James' statement. You can have people seasick on the surface and as soon as they get down, it's like dead flat calm.

JB: Are there any other questions before we move on?

KA: There's two there and they're going to do the same of one another?

CE: In both pits? So right now, as I was saying to Wayne, they're working off the model of putting it all in one as opposed to having to do it in others as well. I think most of that, I think, this is me guessing, is in relation to the timing of mining. So, they're mining 154 right until the end of the mine. So, to go and try to move PK into there, they can't do that while they're mining. So, they can do it in 418 because it is going to finish first, they can move it all into 418. And once your pipe systems and all that are all set for one, it's easier to keep going with the same one. I think that's the reason why. There might also be some technical thing I don't know about. Sorry, I should say one more thing. In the amendment application that Diavik will be making, or that Diavik is making, I think that they're allowing, or requesting that they be permitted for it to go to other pits if needed. So if they found that something went wrong with 418, then they would like that flexibility to be able to use other spaces, but with the main plan being to 418. So I just want to be clear on that.

BA: The last couple of days we've been hearing that 154 is more stable than the other pits. For some reason I heard that maybe 154 was more stable than the other pits or is there a difference between the two, or? Or, 154 can take most of the slimes and PK itself. For the slimes I prefer it to go somewhere else where it's more stable because PK is itself is, once you take most of the slimes out of it, it's going to become just sand. Is that what I heard last couple days or so?

CE: So, I don't think there is a difference on 154 and 418 in terms of stability. I can definitely double-check on that, but I don't think there's a stability difference between the two. The work they are doing there is to make sure that when they are filling one, that the other one stays as stable as it is in terms of the safety for the mine and the people and that sort

of thing. But in terms of the overall stability of both of those, they are both, I mean they build them to be stable. Both of them.

BA: I had for some reason in my head that 154 is more stable or something. That stuck in my head for some reason.

CE: Right, OK

JB: Any other questions?

??: Once a mine is done, they have to flood the two pits, 154 and 418 at the same time. Because there's a whole coming up on the other side.

CE: Yeah, so that's part of what they'd be planning. I don't have the electronic image anywhere, but when I was talking about the bulkheads to block the flow, they would be filling one before the other. Like this one where's there's tunnels underneath here that keep going and connect the two, they'd block that. And there's only a couple tunnels that connect. And so they'd block each of those tunnels so that that PK didn't move across. If they didn't fill this with PK, and they were just flooding, they would do it at the same time. So if they were just filling the pits with water, they would do all of this at the same time, and that makes things easier in terms of stability and that sort of thing.

??: So, in that cone they're going to put PK in there, right? That's what we're talking about for the past few days. They're going to put PK in the cone in there.

CE: Yes, or cone + ice cream. If you're talking operations, you get a level here (cone), if you're talking plus PKC, you get a level somewhere up in here (cone + ice cream). Where depends on how much and which sources.

DTE: OK. You know having that meeting here since Monday and talking about PKC, well, when you talk about things over and over, you dream about it. When I went back to my room, thinking about if it's going to be good or not, I went to bed, said a little prayer, now we put in my dream, we had this PK in the cone, and all of a suddenly I start seeing all these ugly fish swimming around. Like in my dream. It's like did you guys make a mistake? I was talking and I woke up like that. So, I know that PK is not harmful, but the dream about the fish makes me think now. You know, it's like, it was a horrible dream. When you win, you talk about water and animals, we want them to be healthy and fresh water is important. Thinking about all these things for the past few days and then I end up dreaming, a bad nightmare. So, I hope down the road, not just for me, but for my kids, my grandchildren, my people in my community, when they come around and they go hunting, I hope they see healthy things. That's all I have to say. But worrying about my dreams sitting back here thinking about it, I have to say how I feel, and let it out, because if I keep things in and bring it home, then I would have said 'oh, I should have said that.

So, I try not to hide anything or if I said it wrong, that's ok, just let it out. So, thank you for listening to me.

CE: No, I think that's good. I think it's important to a) think about those types of things and b) to realise that everything you're thinking of today isn't the final answer. There's still a lot of work to be done before anything goes in there - water or PK. There's still work that needs to be done. So, I hope you can rest assured today that you are going to help inform those decisions and that there's going to be next steps. It's not just, you're deciding this today and it happens tomorrow. There's none of that. So, I hope that brings a level of comfort as well. And just knowing it's about the questions. What do we want answered before we would ever think about moving ahead with something like this?

JB: So we have our guests are here getting some chairs I see, which is great. There are some chairs here, I don't know how many more we need. So, I'll just let you introduce yourselves and at this point, we are just beginning to present the draft recommendations. You can sit in and listen in on that discussion. Then we will ask you to present to us what you would like to discuss with the panel.

JM: Thanks Joanne. My Name is John McCullum. I am the Executive Director of the Environmental Monitoring Advisory Board. That's a watch dog on the Diavik Mine. It's an independent watch dog so there's a board that has members from each of the various parties to what's called the Environmental Agreement. I won't get, maybe I'll talk a bit more about that later, but our job is to make sure that Diavik meets its commitments in relation to the environment and one of those commitments is to use traditional knowledge in making their decisions. And so, we are very interested in what this panel does and really interested in what you guys have to say about what you think is going on at Diavik because our job is to observe from the outside, be independent, and make recommendations to Diavik about what they can do better and what they are doing well now. So, I guess I'll leave it at that. Allison, do you want to just say hi?

AR: And my name is Allison Rodvang. I am the environmental specialist at the same place that John works, EMAB. And this is the third TK panel session that I've come to observe the last day when you present the recommendations. So I just want to thank you for having us back.

JB: Thank you very much. So, we'll begin the process of walking through the draft recommendations.

NT: I wanted to say that this process of pulling these recommendations together felt quite different for both Joanne and I. I think this was a very different session in the sense that it's something quite foreign, quite different from what people are used to thinking about, talking about at our traditional knowledge panel sessions. I think people are a lot

more comfortable talking about things like caribou movement and fish and and it's tough for all of us to wrap our head around this processed kimberlite idea. And on top of that, knowing that it's hard for the scientists as well. Because this situation of considering process kimberlite underground within a lake is different. So we did our best, but we're really open to suggestions here. So, we just had a few general comments. We tried to pull out the main themes of our discussion. So, we'll present those first and then move into some of the recommendations.

PRESENTATION: NT PRESENTS RECOMMENDATIONS: GENERAL COMMENTS: PK AND A148; A148 AND WATER, PKC VERSUS PITS; AND RECOMMENDATIONS: FISH WATER, MONITORING PK, WIND. ONLY QUESTIONS AND COMMENTS TRANSCRIBED, SEE ATTACHED MATERIALS

SLIDE -GENERAL COMMENTS

NT: Are there any changes that we should make to these general comments? Did we capture everything? There's still more but are we comfortable with those. Wayne is doing one of these.

WL: Lots of changes in ice.

NT: Changes in ice, too? Can you add that Colleen? Snow, ice, winds. Thank you. Louis?

LZ: Just that, PKC or whatever and the processed kimberlite that has to go back first into the open pit and then eventually how and when they're going to start flooding the area. My main concern is that it's always good to fill the open pit. And it's just like putting water inside a cup and then if there's a crack in a cup the water will seep out. I hope the kimberlite pipe isn't broken or water will be seeping away. Thank you.

NT: Mahsi Cho. Thank you. I think our next slide talks about that concern. Scientists would call it seismicity. Earthquakes or cracks in the earth. Fissures that might affect the stability of those pits. So, I think it's on. No. I know it's in one of them. Maybe. Should we add that Louis? Just make sure that that's strong at the beginning? So, concern, how should we phrase it? There is concern about stability of the pits, cracks or fissures underground and any leakage of water. Would that capture it? How's everybody feeling about that? Can you read that one aloud for Louis again just to make sure he's comfortable?

NOTE: TAPE STOPPED SO THE REPEAT OF THE COMMENT WAS NOT CAPTURED

SLIDE - PK AND A418 – GENERAL

NT: OK? So, let's move on. So, we spent a lot of time talking about the pit and the cone and how much PK there is and what would fit where. So, we tried to capture that here. So, we're just commenting here that it was a major part of our discussions. We aren't making any recommendations, we aren't making any guidance. We're just pointing out that this was a significant part of our discussion. How's everybody feeling about that as a general comment? Bobby?

BA: Instead of putting all the slimes and PK in one pit, can the slimes be taken out of the PKC and moved somewhere else? And then the black kimberlite itself be put in a different pit or something. Maybe in the future, something with the slimes, keeping the black kimberlite, the sand anyway, from remixing somehow, if it was it was kept a little bit longer. I don't know. I wonder if you can take the slimes from the PKC itself and moving it somewhere else so that the whole pit doesn't have the two parts to the PKC, I mean PK. The slimes and the PK itself. Can that be done?

NT: Did you want to answer? Just let Colleen comment on that one maybe.

CE: So, do you mean taking the slimes out of the PKC that are in there right now, and finding a different place for them. So not in the pits.

BA: Maybe put it in a different pit maybe. The slimes itself and the PK itself in another pit. Can those be separated?

CE: Gotcha. OK. Just trying to think. So, timing wise, moving them to different pits, may be a bit tricky. Only because they are still mining A154 until the end of the mine life. But if it was after the mine closed, and they were still moving PK out of the PKC, then it could be a possibility. But I'm not 100% sure.

BA: Just last night I was thinking about putting PK and slimes together in one pit in my mind last night in the evening, I was thinking about it again. Maybe if we could somehow separate those two ingredients.

CE: And what's the thinking behind it? Like what would be the reason for doing it?

BA: Being slimes maybe the chemical contents are a little bit different from the rock itself, from the sand itself.

CE: Ok.

NT: You can't separate the slimes from the PK. Aren't they one and the same?

CE: In the operational material, yes. So, I think what you're getting at is that in the PKC, some of that fine processed kimberlite has settled out in the beaches, and that's the sand. And then you've got the true slimes that are in the centre. Then the operational fine processed kimberlite that would go straight to the 418, wouldn't have that chance to have fines that would otherwise settle into the beaches separate out; it would just all go straight into the pit. Right? OK. You're seeing a difference between those two.

BA: Two different…

CE: Materials.

BA: Materials. Yeah.

CE: Yes. OK.

NT: What exactly are slimes? It's still PK. It's just the properties in the environment.

CE: It's the finer fine bits. So, Natasha was asking what exactly are the slimes. And so, when we say 'fine', that's what I was saying with that number. When we say "fine PK", it all goes out in a pipeline together, and then when it gets deposited on the PKC, remember that circle diagram? When it gets deposited on the PKC, the bigger fines, the slightly bigger particles, they settle out first, and form the beaches. And then the super fine almost powdery material, that becomes the slimes and sinks down below that and stays in the centre. So, when it goes to the 418 straight from the process plant, you would have the 'bigger' fines still within the mix.

NT: It doesn't separate out.

CE: Right. Dora?

DM: Last few days now that we've been talking about the open pit. I think we went on a tour out there. It's not, very often that we're coming to the to check out the open pit mine. I'm an elder, I'm not an expert in the area. I don't have experience work in a mine, nowhere near to it. But nonetheless I'm concerned because is there any water that is left underneath, under the pit. That will drain out. Is it toxic? Any elder would say that because one of the elders' concern about the water. And the putting the PK putting back into the pit. To me I think it's a good idea, but probably maybe wouldn't be a bad idea to cover it up with boulders to keep it stabilized under the bottom of the pit. Thank you.

NT: Mahsi Cho. Thank you, Dora. So, at the very beginning of our presentation to Diavik, we're saying we are always thinking about water. That's come up several times over the couple days and we want to make sure that's a really strong sentiment that's shared. I'm

wondering if we can go through some of these recommendations because I think some of these ideas are going to come up. Then maybe we can talk about if there's things that are missing. Let's go to the next one. So not only is it on the first slide, but we have a whole section here on water.

SLIDE – A418 AND WATER

NT: How do people feel about that first point? Does that capture our ideas? Louis?

LZ: Yes. We talk about the open pit and we want to fill it up with water and we've been talking about it for the last few days, while we're here. I was concerned about are they trying to fill the two pits at the same time? I guess they're half connecting underground by tunnels connecting to both pits. I thought, maybe if they fill up with water, they might have water connecting to both pits, they might fill up at the same time. Is that what might happen? That is one of my only concerns I have since last night. Thank you.

NT: Maybe Colleen can draw it here to make it clearer.

TAPE STOPPED WHILE COLLEEN WAS DRAWING

CE: OK. Back to my awesome drawings. So, this is the 418 pit, and this is the 154 pit. They're connected near the top. So remember Louis, when we were underground on Saturday, we went down then we came back up 418, and we went across and then we came out of the 154 pit. But there's only two or three of these connecting tunnels that run underground. When we went through that door underground and it was a big blast of air? That's called a bulk head, and it's basically a block that they can put in, they can put that on any shaft. So if they want to close a shaft, they use wood, concrete, and shotcrete and they can make a plug basically and stop access or stop water. So, if they were going to fill 418 with PK, they would plug each of these access tunnels that connects it with 154. So that as it was filling, once it hits that level, it can't go any further and it can't go into 154. Because they'll still be mining over here when they start to fill 418 with PK. If they don't fill this with PK, and they just fill the pits with water right at the end of the mine, they wouldn't stop the connection, they wouldn't block the connection and they would fill it all at once, is the plan right now. Does that make sense?

LZ: Yes, it's always good to especially the elders you know it's hard to apprehend what might happen and what's to take place. I guess you pretty well have to repeat in order to better understand that this is what I'm going through. This is one of my great concerns because

there'll be a large volume of water be taken to fill in all both pits. So, if they're going to block off the connecting to another pipe I guess, that'll be great, because they'll do it one at a time which is good. Even the old history tells the same thing too, but they blocked one of the roads just so that the seepage wouldn't get anywhere than it already did. Thank you.

CE: Thanks for that, Louis.

NT: Thanks for your patience Louis and others. As I say, this session has been very complex and difficult for all of us, Joanne and myself included, to try to wrap our heads around. It's been a very technical session. It's exciting to see people thinking in so many directions using two ways of knowing. At least two. So speaking of technical, we had that presentation at the beginning. You had asked for a toxicology study of the processed kimberlite so that you could have some comfort as to whether it would be toxic to fish and aquatic wildlife. Colleen presented the results of that study that was done in 2015 – 2016. And Joanne and I got the sense that you were comfortable or satisfied with that study. It's just an observation here, a place holder to recognize that we talked about it and reviewed the results. Is everybody fair with that? Yeah? Ok. Moving on.

RECOMMENDATIONS SLIDES

NT: So here's where we start to get into the recommendations. This was the sense that Joanne and I got based on the notes and the discussions. But I'm hearing Bobby say something a little bit different this morning, so I'd like to check in. My understanding was that people seem to prefer that, if it's safe and if Diavik goes ahead with putting PK in the mine area, that it's better to have the PK underground than to pile it up on top of the land, in the PKC and other areas. So, if they're going to do it with operations, then put as much as they can in there. Of course, as much as they can up until the 30 m. line. But I heard Bobby say something a little bit different today, and I want to check in with the rest of the group this morning as to your comfort level around making this recommendation. Right now, the recommendation reads that there's interest in moving as much as possible off the land from the PKC into the underground and pit area. The cone and the ice cream. Kathy?

KA: Just to clarify. We're talking just the slimes and not the fine sand, right? If the PK goes into the mine area, that PK we're just referring to the slimes. We hadn't discussed moving any of the larger fines into the pits. Because it's the slimes we're concerned about.

NT: So what would still remain in the PKC?

KA: The rougher fines. Because they're more stable, they're like a beach. And then the rough stuff, yeah. And that's where we had talked about putting the larger, coarser boulders on top of the larger fines and the rough kimberlite.

NT: So, these, what's in this jar, which would end up being the slimes, would go into the pit, but this coarser material would remain on land? Could remain.

KA: Probably. It could remain because it's solid enough to hold boulders, which we had spoken of two or three sessions ago. To put larger boulders on and then a finer cap and a finer cap.

NT: So, I just want to check in on the thinking behind covering this. If we know that it's not toxic, is it that the actual material you don't want animals walking on?

KA: No, because the way the PKC goes, you got slime, coarser, fine, and then the kimberlite on the outside. Right?

CE: Yes.

KA: Yes. So, the kimberlite on the outside is fine. I'm just saying in the centre where we have the finer, like from the slime out where the red is, that's where we had discussed putting larger boulders to just make a walkway for caribou. Did we not?

CE: I think that part of that was dust, that you'd mentioned. So that that fine beachy material could be moved by wind if you didn't cover it. And I think that's where you had said, Bobby, that you'd prefer to have it covered a bit, that beachy stuff, because it prevents the wind from moving it. I think that's where it came from. So, I kind of tried to capture that here, so make sure that we're good with this. So, if the PK goes to the mine area, the TK Panel recommends that all of the PK slimes also be put into the pits. There's interest in moving as much of the slimes as possible from the PKC into the mine area. And then a second bullet saying the beach materials and the rough kimberlite, which is that coarse kimberlite, should stay in the PKC area, i.e. anything that can support a rock cover.

KA: Correct.

CE: OK. Do you want to make it? I'm trying to remember. I think we've had it in the past that there should be a rock cover. Do you want that or do you want to just say that "could".

KA: I think we discussed that at one session and I don't think we really resolved it. We were going to do it at a different session as we got closer.

NT: I think, I was just looking at this the other night. I think there was general interest in putting boulders on, but because there were the slimes, we thought the boulders would just sink, so we abandoned that idea.

KA: And went to the pit.

NT: Yeah.

KA: Thank you.

NT: Okay. Wayne?

WL: There's not going to be a 100% recovery of the slimes from the PKC, so, putting the boulders in is just going to go down until they can't go down further, and it'll just push the slimes closer to the surface. So, I can't see how that's going to solve too much. I think once they get the slimes down to a certain level, that it should be filled just like pits with the water so that the caribou go there, they can swim across that pond, or whatever. Or if it freezes in winter, they can cross it. So the slime will still be down as far as, just like in the pit. And then there'd be water on top of that also.

JB: Yeah. I'm not sure at this stage we can predict how much of the slime can be removed. So we may have to tweak those recommendations at a future point. So, we can see how successful they are at removing the slime and decide from there if there's anything left, what the challenges are and what our recommendations are.

WL: Well that's the reason I say about the water. Like you might get 70% out, but maybe there's still 30% down there. And if you fill it with rocks, the slime is just going to come to the top. So that won't solve anything.

CE: And I think, you raise a good point Wayne. If Diavik did go ahead with this as the primary closure option, they would have to change their plans in terms of how they're closing the PKC and then we'd be revisiting all of that. All of that, or the design would totally change, or could totally change. So that would be discussed here, it would have to be brought back to the panel again to discuss further. Does that make sense that it would follow from this?

WL: Yeah, I'm good with that.

NT: So, Wayne, could we add a last sentence maybe here saying exactly what you just said. Saying that the closure for the PKC would have to be revisited by the TK Panel and recommendations made around closure and monitoring because of changes in the mine plan, or something like that. Yeah? Ok. Colleen's suggesting that we combine these two bullets (11.2 / 11.3). I think that works. How about "for example, if it's not possible". Ok, just as she's making that edit, we generally got it with these three bullets? How are

people feeling? *NT rereads new combined recommendation*. You want to think about it for a while? OK why don't we move to the next one and then we can come back. Oh, Sara did you want to say something?

CSB: We have to cover that PKC the leftover from covered just around the pond or cover the whole area with boulders and make it look like an esker or something to be. You have to put a lot of boulders around it and make sure it's covered real good so that humans or animals won't get to it. But I don't know about the small mammals like squirrels and that, they make holes under the ground and have dens, so. Is there something like an esker that tends to the foxes and other small animals that would make their den in there? This is another thing that we need to think about.

NT: Thank you Sara. I think as we're talking this through, it becomes more obvious to me that again, if there is a change in the closure plan, that we really have to revisit the whole PKC closure and I'll make a note here. It's a good point. We often think about the caribou and the people and maybe we forget sometimes about those smaller mammals. So, I will add that to the report. Thank you. OK. Moving onto fish.

SLIDE: FISH – RECOMMENDATION

BA: I was mentioning different kinds of fish that we get in these lakes up here. We're dealing with fish that live above the bottom. We've got to remember that these lakes have ling cod. Ling cod in the ocean, they're bottom feeders, they mostly feed in the bottom of the ocean. Ling cod do the same thing on these lakes. I've come to know that because sometimes I tend do get on my line and find my depth on the lake. And sometimes I get right into the bottom of the lake and sometimes I happen to find ling cod right close to the bottom, at the bottom of the lake. So those are some of things that I come to find when I fish these lakes, is ling cod and maybe that other one, sculpin. That those are some of the main fish that live at the bottom. The bottom feeders. We've got to remember that there's bottom feeders in these lakes such as ling cod and sculpin and I'm not sure, maybe there's another one. But just as a reference, ling cod and sculpin would go down into the bottom of the lake as well. You've got to remember that too.

KA: Bobby, is the chance that they will not go down that deep based on whether there's food down there. So, if there's no food down there, would they go down anyway?

BA: Well, they would if they wanted to move around. When they move around doesn't mean there's no food there. They're going to move over or close to the bottom of the lake and find, look for food in there. It's just the same thing with us. We're land people. We do the

same thing on top. We look for food on top of the land over there. It's the same thing with ling cod and sculpin. They'll definitely go down to those levels as well even though it doesn't hold any nutrients in there. They tend to look for those nutrients anywhere in the lake.

JB: So, yeah that first point suggests that they'll only go where there's food. So, is that wrong then?

BA: Well in my opinion, when they're looking for food, they'll go over where there is no food to find and then go over to the other side to find their food, their vegetation. Some of these lakes have no vegetation, sometimes just sand alone, just sand alone and they will feed on that too. Sand and mud at the bottom of the lakes. Trout will do that. Any of the fish will do that too. They'll eat the bottom of the lake to get the bugs within that sand and what's in the bottom in the sane as well. And I know for sure even our dogs do that same thing too. When they get sick, when they get tape works in their stomachs, dogs will eat the mire, the mud. And fish will do the same thing for their stomach. When you see fish that are so thin. I've seen fish that are so thin and feeding on the mire at the bottom of the lake as well. I've seen that happen in shallow places where very think and sick fish in my opinion, they eat the bottom of the lake as well. And having half wolf and half husky, we've raised half huskies and half wolves all our lives, my dad's been doing that because it's a wolf, it knows the nutrients in the mud. It'll eat mud to get rid of the bugs in their stomach. The fish will actually do that too.

NT: OK, so I wonder, I know that, we've heard different things through the last couple days. What if we added the word "generally". Fish "generally" go where they know there is food." Would you be more comfortable with that?

OK, so the other thing that I want to check in with the panel about, I'm not sure we got clear direction from everyone on this. I hope everyone can see this. So, at one point we talked about filling the PK just in that pit, just in the cone, sorry, just in the cone. We also talked about filling it in the cone and the pit. The ice cream here. So, from the bottom all the way up until 30 m. At one point I heard people just wanted it in the cone, they didn't want it in the ice cream. But as I reviewed the notes, we moved from there and talked about, well maybe its ok to keep the PK up in this pit. Because after we heard what James had to say, we learned a lot more about the properties of processed kimberlite. But I think we need your direction on your comfort level about whether the PK can only go in the cone 7.5 million cubic metres, or whether it could continue up into the ice cream part, into the pit, as long as it didn't get any higher than that fish habitat 100 m point, like Bobby was saying. And one thought I have, Bobby is if, you're saying that the fish sometimes go that deep and need that substrate, or need that lake bottom, you know if the lake bottom is down here, it's very unlikely for a fish to go more than 345 m or 1000 ft. So, filling the PK up to this level would help with that.

BA: Just yesterday again, I commented on how deep fish can go, where we can find fish. Like I said, sometimes my line on my jigger, how much line I put on it, I usually put at least more than 250 yards or so, really, really long. Really long. And sometimes when we want to find depth of lake where we're fishing, we put out all the lines and the bait to go right to the bottom. We know how deep it is, and slowly we pull it back up to the level, and sometimes because the pressure in the air and the pressure in the water, the levels will be different. Sometimes the fish will be right in the bottom because the pressure in the air is going to keep the fish at the bottom. They don't actually live or congregate in that area, sometimes they could be half way down the lake and stay in that lake depending pressure in the environment, on the lake pressure itself. I've come to know that because when we want to find the depth of the lake and we work our way, we keep pulling it up, we keep pulling it up until we find that depth where the fish are congregating and then fish, and then stay there. You go any higher, nothing. You go any lower, nothing. So, you find that depth.

NT: I wonder, this seems like something that maybe needs more discussion, because I've heard different ideas around the panel. Could anybody else comment on comfort level? What I'm hearing from Bobby is that it needs to be more than 100 ft, but traditional knowledge holders, others in the room, might have some idea about what their comfort level is, how deep the fish go.

DTE: I know that I'm not a professor, I don't live under the water, we don't really know how deep the fish go. But I know they go deep. And they go just about to the surface. So, it's hard to say. But if they want to feed, I know the fish swim in different areas because the lake is never the same. Sometimes it'll be really deep and then it'll go shallow and then it'll go deep again and then it goes up again. Just like the hills we see in our home town. You know, because of the volcano a long time ago, that's how the land is built. A few years ago, we had this one guy come into our area to check to see where we have the deepest part of Great Slave Lake, and we've seen it. And it moves up and down. And that's how we know. That sometimes the fish live deep, some fish live up. In the big ?, they have seen a big fish that live way down there, but the divers couldn't go down because of the pressure, that's what Bobby said. That's how it is. We don't breathe the same thing as the fish, so we don't really know. I think we need more, to talk about it more. And I'm just an alternate for Celine, so I'll just say what I think. And if Celine wants me to come back, then I can sit in and say more. But when I go home, I'll ask questions, and I'll ask the elders to see if I can get more information. Because they go out. Even from our ancestors. People who live out in the bush and how they go fish and feed their dogs, long time ago. Today it's not like that. Everybody uses snowmobiles. In Stark Lake in my home town, they used to use the lake to feed their dogs. Now it's overpopulated, and there's something in the water like mercury. The fish is deformed. So here you know, last night I told you I dreamed about the fish that come towards me, that

look so ugly, I was just wondering what that means to me down the road. For me when we talk about this cone with the slime, because the slime is like quicksand, I want it to be removed from the ground because there are animals that'll go in there and they'll never come back out and they'll sink. We do live off caribou, but there's ground squirrels, there's birds, there's geese, there's ducks, there's wolves, there's grizzly bears, they have their cubs. You never know if they go to the slime area and if they get stuck they're not going to come back out. Their mother's going to try, but it might not help. So we have to protect those things. And I'm not sure about the fish if they go down fast and they go into the slime are they going to come back out? I don't know because I don't live under the water. So, I think we need to talk about it more. That's what I think. Mahsi Cho.

LZ: When James was speaking to us yesterday, yesterday he mentioned that the water wouldn't go into the deep waters because the pressure of the water. And if we're going to put water back into the open pit, fish probably won't go that deep. He's probably right. That's what I'm thinking. Back home we have large lakes, but I don't think there's any 100 ft deep, if we're going to sit and net, then we have to put poles in the water. So, in our area, there's no 100 ft deep water in our area, and what James had mentioned yesterday, I just wanted to relay that message again.

NT: So it sounds to me that like Terry is saying and we're hearing from Louis and Bobby that maybe we're not comfortable putting a specific number – this 30 m., 100 ft magic number. What I'm hearing is that folks need to go back to their communities and learn more about or ask more questions about how deep fish go and maybe we can rewrite this a little bit so that the recommendation is that we need to draw from the TK around fish behaviour, how deep fish go as well. So that we can give some recommendations about that fish habitat area.

WL: Yeah, there's a lot of controversy about how deep this thing should be. Like how far from the surface of the water, but people live in different places like Contwoyto Lake and Great Bear Lake, and this little lake is just like a little puddle compared with those lakes and those bigger lakes, they do go deep, and there are big fish up there. But here, the fish like right around this area here, the fellow that was here yesterday, James, he told us that the deepest hole around this area was only 125 ft deep or 135 ft deep, so 100 ft deep is very close in the ballpark. But perhaps to settle everyone's mind is to get a marine biologist in here you know for a little session here.

NT: We have a recommendation that the TK panel would like to see more scientific research to see what the effects of PK might be on fish specific to Lac de Gras and maybe we can add something on fish behaviour. But, if we're going to be practicing two-eyed seeing, we have the science, but we also have the TK. I'm hearing different things in the panel and seeing some nods when your saying it's probably unlikely that the fish are going to go lower than 100, and I'm seeing others around the room nodding, but I'm also wanting

to honour Bobby's idea that maybe they do go deeper than 100. So I'm wondering whether we should not attach this magic number and revisit this once you have time to talk to TK holders in your communities.

CE: Sorry this is may be me thinking more science-y, less TK-y, but is there a way to make it relevant to the overall depth of Lac de Gras? Does that make sense to people? Instead of trying to find a number. So the maximum depth in Lac de Gras, James was talking yesterday about deep blue, which is 40 m. / 135 ft. that's the deepest point as he was putting it that he knew of. I do believe that in the middle of the lake, from the old bathymetry, the old depth work that they did, I think there's one that's about 50m as the deepest point in the lake. So I don't know if it makes sense to think about the overall depth in Lac de Gras when we're thinking about how deep do we want this area to be?

NT: That's about it. That would be Lac de Gras.

CE: The deepest point of Lac de Gras. The average is 20 – 25 m.

NT: Does that piece of information change the way people are thinking? Because this is, if we think about the whole cone and the ice cream, this would be how deep Lac de Gras is at its deepest point. So, do we think that fish might go deeper than that if they could? I'm seeing a lot of no's. Kathy? Oh.

??: If you got it on 30 m, it can't go any further, so it's got to, they got to live there. That's the way I see it. But it all depends how deep you make it and you could make it as deep as Lac de Gras and it would be just as good I think. Or, yeah, because that looks good to me there, the way it looks.

NT: Thank you for that. Kathy?

KA: Just to add that if we go to this TSS, the total suspended sediment, how cloudy or clear is the sediment? How much sediment is in the water? And then it says sediment in the water can affect fish gills. So, if a fish goes down into the PK beyond the 30 m level or whatever line that is, I think once he gets down into the PK and realises it's affecting his gills, he's not going to hang out down there. He's probably going to come back up. So, they're going to figure out, I think, on their own like how far down they can go before they're having trouble to breathe. Because TSS in water affects their gills. So, I don't think it's going to continue all the way down if it can't breathe. You know?

NT: Joanne and I were just talking and want to put forward maybe a compromise which is what if we change the wording so that, if the PK were to go into the mine, the cone and the pit, that it could not go any higher than the deepest point in Lac de Gras. Nancy is saying that sounds good. How do people feel about that? I'm seeing lots of nods. Yeah? Bobby's still not convinced. OK, I guess we have to park it then.

JB: So, if we approach this as a guiding principle, we're trying to come up with a starting point of in terms of what would be safe for fish, that we're confident in, on the one hand, and on the other hand what is needed in terms of space for the PK. So, it doesn't mean that these numbers can't be adjusted. Maybe we find that we don't need that much space and we don't need to fill as high as what we're discussing here, or it could be that more space is needed and that we need to find alternatives. So, are people comfortable with providing that kind of guiding principal and revisiting any concrete recommendations in terms of numbers? You're good? OK? OK.

SLIDE – WATER - RECOMMENDATION

SLIDE - MONITORING PK – RECOMMENDATIONS

CE: So, I just had a question about this one in terms of logistics and ability. When I read this one I wasn't sure if it meant when the PK first starts getting placed underground, like so the first instance of placing PK underground, so when you're taking that operational processed kimberlite and you're putting it way down deep into the underground. Because that would be very challenging in that it's going deep down into flooded mine areas where people wouldn't be allowed to go for safety reasons, obviously. Or if this was referring to when they are putting the water cap on top of the PK in the 418. So, I wasn't sure how that was meant to be interpreted and what people are meaning to see and understand at first. So I was just wondering if you guys could provide some clarity on that one.

KA: I'm not going to speak to clarifying that, but maybe we can clarify from the first bullet, when the slimes are moved from the PKC into 418, not the mine area. Just to clarify that one. Into 418. A418.

CE: OK.

KA: I know in the beginning we won't be able to see how the slimes are being pumped into the mine pit, because that is way, way, way down there. So, you won't see that at all. Perhaps maybe by the time it gets ¾ way up, the carrot portion and because James was saying what they would do is they would let it settle then add more water, then add more PK, let it settle like in the jar, pump off that water, so they would keep doing this. So perhaps maybe at a ¾ level or when it gets to the base, that might be a time for us to go and look down there and say, "OK, that looks good, keep going". And by that time, we'd know how much they'd put in there.

CE: Right, OK.

KA: And what line level is left. What's left in the pit, what's left in operational and how much more is that going to fill the pit, the pit part.

CE: I'm wondering if we could use words like, it's using a bit of Diavik language, but "as soon as it's safe to do so", or something like that. So that gives you the first opportunity to see it as soon as its in a place that's safe to do so.

KA: And we have a good visual to do so.

CE: Yeah, so is that OK to use that kind of language? I don't know.

KA: Probably both you know 'until it's safe to do so' and 'we have a good visual of the level'

CE: OK. Let's try.

NT: **Recommendation 11.11 –** Bobby's nodding his head. Terri what do you think? Yeah? **Recommendation 11.12** Is this one we'd like to put forward as a recommendation? Kathy's nodding. Dora? Yeah? **Recommendation 11.13** This is one we were challenged with. Because we talked a lot about does anything grow on PK? If it's in the pit underwater, is anything going to grow on it? Should we try to put seeds in it to try to get something to grown on it? Should we try to encourage fish habitat in that way? And the thinking was that going to see those vegetation plots and monitoring might give people more insight into how PK behaves when it comes to whether plants can grow on it. Wayne?

WL: Myself, I don't see any point in going to see those vegetation plots because we're talking about two things. We're talking about surface and then we're talking about low water level. So, its two different scenarios. If there was somebody to maybe take care and put the PK or slime or whatever and put it into a container like a fish tank, and then try and grow seeds or something like that, it would be much better than going to see something that doesn't pertain to the situation that we're going to be in with the slime under water.

JB: So, Wayne, we're still talking about the possibility of having some PK on the surface, so not just underwater, and I think we're anxious to see what to expect in those coarser areas where we still will find some level of PK.

WL: I wasn't aware of this. Before when we were talking about growing plants, to me it was aquatic plants. Something below the water surface. On the slime at the bottom from the surface down.

JB: Except those mats are on the surface now so we have the opportunity to see what's happening out there now. There not underground or underwater, they're on the surface and so I'm sure people would be curious to see if there's anything happening out there.

It's been a few years since we've been out to see them. To see what's going on, if anything there. It's simply an opportunity to learn. You don't have to go Wayne.

NT: I think you've been uninvited. (laughter) I want to check in with everybody. Because there was quite a bit of discussion around underwater plants growing on PK and there were some folks saying that nothing will ever grow there. We talked about screens and seeds and whether those would work. Is there anything more that we want to say around aquatic plants and PK or PK underwater? Or should we just leave that? Certainly in the report Joanne and I will have a paragraph that summarises all the discussion. It was a rich discussion. But is there anything you feel strongly about or that you feel should be here? Wayne?

WL: I recommend that we do a test plot like in a fish tank or something like that to see if there would be any chance of aquatic plants growing on that PK. Over and out.

NT: Does the TK panel agree with Wayne's suggestion to make that a recommendation? I see one nod. I see two nods. That's not enough to make it a recommendation. Yes? OK Kohlman, good stuff. So, the TK panel recommends that. Reworded 11.14. OK. Last slide.

SLIDE: WIND – GENERAL

BA: Especially for the dykes, maybe monitor after freezers are taken out of the dyke. I'd really like to have that looked at too. The freezers. I'm still worried about those cement or the wall coming lose after they thaw. That's what I wanted to look at too. At least monitor before putting the slimes in the pits, see if its stable enough without the freezer.

NT: I knew that was important to you, Bobby and that was one that we tried to include. It's in 2 here (recommendations 11.11 and 11.12). That idea about the stability of the dyke is meant to include the concerns that you and Louis were talking about, the construction of the dykes as well as the concern that people had about seismic activity, earthquakes, tremors, how all of those things will affect the safety and the stability of the dykes. Yeah? OK. That's the end of what we pulled together. Is there anything that we haven't pulled into this presentation that stands out as really important form our last couple of days. OK. I think people are not saying anything because they want a break. I get that. So, let me just remind the panel what we have on the agenda for the rest of the day. *Went over agenda.*

15 MINUTE BREAK

PRESENTATION – EMAB, John McCullum

JM: EMAB is a board that was formed when Diavik was going through an environmental assessment. The Minister of Indian Affairs at the time said that in order for the project to proceed, one of the things they needed was for an independent watchdog to be set up and the members of that board are 5 Aboriginal parties, all of which are represented here today, the GNWT, and Canada and Diavik. There's 8 members on that board. And our job is to oversee what happens at Diavik, and one of the things we're supposed to do is to look at the scientific knowledge that they produce and also the traditional knowledge. And so, actually when this panel was originally formed, it was formed by EMAB and then after a couple of years it moved over to be run by Diavik to give it more connection between the panel and Diavik. That left EMAB to wonder how are we going to assess what's happening with traditional knowledge when we're outside the panel and are outside Diavik too. And because we don't really feel we're qualified to assess what traditional knowledge is given. But what we do feel we can assess is how Diavik is dealing with the traditional knowledge. The board met with one panel member and one person who has been involved with some of the panel activities before. So last May, almost a year ago, Bobby was at our meeting and Madeleine Drybones from Lutsel K'e. And after that we talked quite a bit about what EMAB does. We talked quite a bit about what the panel does. The kinds of things that the panel. Oh and Joanne was there and Natasha was on the phone. So, we sort of learned about what happens and hopefully Bobby learned what EMAB does. And then after that our board got together and came up with some traditional knowledge recommendations for Diavik and some of them are related to this panel and some are more general.

Short summary of EMAB's recommendations to Diavik about the panel and what Diavik responded:

EMAB talked about this and the board struggles with how EMAB and the panel should work together. What the best way that we speak to each other is. And anything you guys have to suggest about that would be helpful.

Following the meeting with Bobby and Madeleine and your facilitators, the board talked about what we saw for a while and made a number of recommendations.

1. How often the TK panel meets. The message we got is that it's important for the panel to meet at least a couple of times per year just for to maintain continuity. People forget about what's going on and it helps to keep the relationship solid and gives the panel the feeling that it has a strong direction. And so, we did make that

recommendation after talking to the panel members. Diavik said they couldn't guarantee that. We made the recommendation and they responded.

2. The second recommendation is one I would really like you to think about today. It's hard for us to know exactly how to work with the panel and to know what the panel is thinking about what's happening with their recommendations they made to Diavik. That's what we're really looking to you to tell us. And our recommendation was that the panel meet where there's one session where you go through all the recommendations that you made over the last five years, pretty ambitious, maybe crazy. And maybe that's more than one session, I don't know what the best approach would be. And then to give us your assessment of how Diavik responded to those recommendations. Were you happy that they took them all really seriously? Were there some they said they couldn't do that you thought were important? Just any kind of an assessment of the recommendations that you made and how Diavik responded. And the second part is what have they actually done with the recommendations? So are you happy with the way they're starting to build the waste rockpile for example, or the way they're proposing to do reclamation. So that might be a longer-term thing because some of those recommendations are not in place yet, they won't happen until later on. So that was our main thing. If EMAB can't assess the traditional knowledge. What we can do is assess what Diavik is treating the traditional knowledge and the recommendations you are giving. And that's what we'd really like you to think about. For EMAB we think it would be helpful if the panel had a session focused entirely on that.
3. Other topics for panel meetings that came up with Bobby and Madeleine and your facilitators. 1) Women's pane to talk about vegetation and berries and medicine and gathering and those kinds of things; 2) post-closure monitoring – since we made this recommendation, you've actually had a session on post-closure monitoring. I think that's been done, but we'd love to hear what you think about how Diavik is responding to those. 3) To look at all the recommendations as things have changed over time. To make sure they're still relevant or maybe they need to be changed a little bit. I know for us, Diavik's closure plans have been a moving target over the last few years, and particularly over the last year or so. So, some of the recommendations that we made still make sense and some of them don't. So, for both of those two recommendations, Diavik told us the panel chooses what it wants to talk about, not us. So, ask the panel. So that's what we're doing.
4. Youth – it's good to involve youth in the panel discussions and Diavik should continue to involve youth in all of those meetings. And they agreed.

Those are the recommendations we made to Diavik about the TK panel. We made a few other recommendations about the use of traditional knowledge in general. We review different reports that Diavik produces. Every year they produce a wildlife monitoring

report, they produce an aquatic effects monitoring report, closure plans from time to time and they produce an air quality monitoring report. And we want them to be clear on how they're using traditional knowledge in each of those reports because they're supposed to be about science and traditional knowledge. So EMAB asked them to report to EMAB once a year on what traditional knowledge they've used each year in each of those kinds of reports. And it's a hard question and it's not, sometimes it seems to be hard for companies and for EAMB as well to know how to use traditional knowledge in some kinds of environmental monitoring. It might be easier in wildlife monitoring and harder in air quality monitoring, but we think they could do a better job and a more thorough job in terms of incorporating traditional knowledge into their reporting and to talk to us about what they've done so that they're accountable. And that's something where this panel might have some input as well. What more traditional knowledge they could use in terms of aquatic reporting or air quality or closure or whatever. And that's really it. There weren't that many recommendations. The sheet I gave you is just the recommendations that EMAB made in terms of the panel. I didn't include the other recommendations on that table. The take home message is that if you think there's a way the panel can help EMAB assess what Diavik is doing with your recommendations either through a panel meeting or through other ways, that would be really helpful for us.

KA: Does EMAB not get our reports and recommendations that come out of this panel? We get 11.5 x 14 sheets with questions, recommendations, Diavik's response, etc. Do you get to see those at the end of a TK workshop?

JM: Yes, we get those. We post them on our website, so the public has access to it.

KA: Where is it that you're having a problem with what comes out of the TK panel, what EMAB sees, what Diavik does with that? Are you not seeing something? On how Diavik is taking our recommendations and they're not doing it. I know you get other reports from Diavik. And you said you're not really seeing our recommendations in their day to day or monthly activities here. Was that what I understood?

JM: What I was trying to say was that we would like to hear directly from the panel about what they think about Diavik's responses. We do see the chart and we do see the reports. But we don't see a long-term view from the panel about what you think is being done and not being done. What recommendations Diavik is accepting or what they're saying needs to be changed. It's like seeing things with your own eyes. We'd like to hear directly from the panel.

KA: My experience with all the recommendations that we bring to Diavik has been positive. They've always listened to us with an open ear. There's some recommendations that we've put forward that have been a definite no. There's been some maybes and there's been yes. And that's been very helpful to us. My feeling personally, is that they've

always been very open to what all of us have to say, right from the animals to putting the slimes in the pit. We're going to present that today. This is our first time discussing putting the PK slime into A418. I've been on the panel 3 years now, they've had a good open ear. I'll pass the mic on.

NT: It would be helpful to hear quick impressions from anyone else who's had that long-term experience. Anyone else? Bobby? Nancy? No?

??: One of the things that has come up several times and we've been flexible, is to have that women's session on vegetation. Just because it's our women who know our medicines. It's our women who pick the berries for the most part. And they know what's out here, what to look for, where to look and how to tell if its healthy. All of those issues. And that's been a source of frustration, one source of frustration in not having that recommendation supported. So that's one observation I have. On the other hand, one of the changes that I saw when we moved away from working under EMAB to working directly with Diavik, is that we had access to a lot more answers to our questions and immediate answers, and so that was extremely helpful. And it made it, we were dealing with things in real time and that was quite satisfying.

JM: Just wanted to follow up on the comment from Kathy, you were saying sometimes they reject recommendations or they give you a maybe. I'm wondering how you respond to that. Are you happy with that? Are you satisfied with the reasons that they give?

KA: Some of them we probably weren't happy but a lot of times it was due to technical things. It could be say we wanted to move a rock pile or something like that, but they say no because the middle is frozen and maybe there's something you can think of. One of them was we wanted to move the rock into the pits, but because rock is numbered 3, 2 and 1. 3 being the acidic rock, 2 being the medium rock, and 1 being the good rock. And putting it into the pit would cause acid in the water which would kill the fish, any fish that would go there. So that was a no. But once we understood why it was a no, we said, OK, wonderful. We didn't know. We thought rock was rock was rock. But there's different kinds of rock. So once we knew that, then we say ok don't do that then. We take your no. And there's other things. Say maybe we can do that. For example, putting PK into the bottom of 418 to get it off the land where it's a danger to people and animals, people and wildlife. So that's a maybe. Could be treating the water before it goes into the lake. Yes, we can do that. So those are examples. And they do, they listen to us with an open ear. I've seen that. They've never once looked at us and said, 'oh that's a crazy question'. They go 'wow, we never thought of that'. Because of traditional knowledge from our elders, and things like that. Just little things like that. Does that help?

JM: Yes, thank you.

JH: From the TK perspective for our elders and our youth that participate from Tlicho government, we found that DDMI responded well to what we asked them. When they were talking about the PK contaminated area site, they seen you know like how elders are more visual because they don't' really understand how to read and write. And look at plants, I don't mean plants, but plan of the site, mining site area and the numbers, the slope 3 to 1, 1 to 3 and stuff like that was all on maps. Because they're all visual, and when we had Janelle here with us, because she was a youth, and I've got her to ask questions like, "in your eyes, what would you see?" and "if you're an elder, what would they see and hear?" They wouldn't really understand the technical, the science part of it, but they would know a lot of TK part of it. So, what I got Janelle to ask is if we could go to an area where they could understand what is the PK contaminated area, and what it's mixed with and the slime they're talking about in the sandy area, and where does it come from, from the start. So, think about it I told her. And she said OK.

And when Gord was here, we got an opportunity to go to where they crush the diamonds, where they sort them. The process plant. We went to a process plant. And they got to see. When we took Louis there, he was pretty amazed at how they got little pieces of diamonds out and the process of it coming out. And then looking at the machinery, the slurry and the water that they use all the way. And then being disposed at the PKC contaminated site. He got to understand where it came from and then now we knew that we're going to talk about how we're going to contain the PK site. We talked about boulders, covers, and then they were really worried about drainage going into the big lake, and they talked about the contaminates. So when we came back. I think this is my third session in a row, to come back with the elders and the youth. I saw that they're really well, it's like they take our concerns seriously. Especially when the youth presented when we asked the youth to ask all these questions. And even the elders asked the youth to ask questions because they feel that their voice is stronger and they're the next generation. And we got an opportunity to go underground and when we talked about the PKC the slimy part, to go underground, and we took Louis to go underground, on this trip, it was a good opportunity to see. And when we talked to a guy called Peter that was taking us on a tour, he said that they taught him where you see it at the edge of pit 514, that's the actual lake bottom. And then we go down and go deeper and deeper and deeper. And then when we took our elder Dora to one of the sites where you're halfway down the pit and then you're at the look-out. She got to see the depth and then I asked her a question "do you think fish would swim this deep?" and she said no because she got to see how far down she was, like half-way through. I told her that 'ok if fish doesn't go this deep, if they fill it with the slime, the PKC, would you feel comfortable if it was put down the tunnels, the pit, and then filling it up with water.' And then she started to get the picture because we went to different sites. So that's good that DDMI has taken us out and they responded to the questions, and we got opportunities to go places, like where we went underground, 99% of employees that work here don't go there. It was a first

opportunity to go down as panel members, it was good. I feel pretty comfortable that they listen to our questions and give answers. If they don't have the answers right there for us, they'll go back and then come back and give them to us and I feel comfortable with the elders that Tlicho government has sent because we're really well informed of how we present when we speak to the panel.

The way it works for TG (Tlicho government), is that they select the elders that have a lot of knowledge. We also select a youth to come see the changes and how it impacts and how we can also help fix. It comes back to TG. Me as a TG employee, I would report everything to my manager and then it goes from the manager directly to the Chief Executive Council. And then we also have a member that sits on EMAB. So, we're all connected that way. I don't know how other boards or other Aboriginal members here do it, but I feel comfortable to say that TG is well informed. And we do see the reports, like Natasha when they're done the reports, it goes to DDMI and then to us, so we do see it.

I just trying to figure out the connection between, it was all under EMAB, then it became a TK panel, I don't know if EMAB is getting the right information.

NT: That's a question for John to answer, but how many TK panel members were there when the panel was under EMAB? How many do we have? Louis, Bobby. So, it was 4 sessions. The first 4 sessions of the TK panel were held under EMAB and then the panel members requested that it come directly under Diavik and that's what we've been doing since. Does anybody else want to comment?

NK: Coming to these meetings a few times and really lean lots. Especially when its' coming to a closure. The more we go the stronger we get as it's getting closer to the closure. So, I'm so happy I came to learn from the elders and everybody here. I'm so thankful to EMAB that's watching out for what's going to happen. We wouldn't always be there. Sometimes we might not know what happened when we're at home. But EMAB would know what happened, while we're not here. Diavik's been listening to our elders and our panel. Each time I come here, OK this is happening, you wanted this to happen, how it's happening. And it makes us stronger. So I'm really thankful for EMAB wanting to hear from the panel.

BA: Coming to these EMAB meetings in the beginning and staying here this long has given me a lot of perspective on how these mines appear on the headwaters of Kugluktuk. And it gives me a great pleasure to come to these meetings. In the first place, a province to province thing always comes to my mind. Which is kind of conflicting in my mind when I come to these meetings. Because another province really can't tell another province do what another province should be doing. Which in my mind, Nunavut is a brand new province, and NWT is another province.

It's really a pleasure to be here and to be accepted in this way. Because we live so close to the mining area. I'm just 60 miles north of here. And Nancy was born we're still up there. And to my experiences, where we are born and raised all along. And to give our perspective and our traditional knowledges, all the same thing, no matter if I was Inuk or Indian from this part of the world. We all do the same things out on the land, and use the same things on the land, how we do things on the land. It's really wonderful that we can work this way and give our perspectives to the mining companies, how traditional knowledge has really come to help give the mining companies more of what they need to know about the land, and to our, to all peoples that use this part of the world, they don't know what to expect, or what's coming or what's been done out on the land or how our fish and animals use this land a lot. Because in my part, in my mind, these mining companies and these personnel who come to this part of the world, they don't really know what to expect when they see animals, fish and the air, and the land itself, and how we use it, we're doing a wonderful a job of giving the mining companies in this way. It's wonderful that we're giving them, without our traditional knowledge, they would be doing anything like in the past. They didn't know in the past, what was being thrown out on the eland and what it reacts to the lands. That s all I see coming from the mining companies. And just knowing that these mining companies are saying 'ok, that's what it was about with traditional knowledge, he knows about that thing'. That really makes my mind and my body feel easier. And to work with the mining companies because they're southern people and there totally from a different part of the world. And that's really wonderful to me. What do people think of another province or traditional knowledge, or anybody coming to your province and giving my traditional knowledge? I don't know, maybe sometimes you get different opinions. Thank you.

NT: You said before the other day, even though we have this territory between Nunavut and the NWT, the caribou don't pay attention, the headwaters, it doesn't matter to water. That's why we're all here together.

JB: Though all our sessions over time, there's been interest in what happens after the mines are gone. And as people from the land, what can we do to keep watching the land, to keep monitoring the land. We've started that discussion. There was a session last year around that and we need to continue that discussion. We need to start planning for that. Where we don't have the mine to continue to pay for us to come here. How are we going to do that? How can we organize around doing that? That's certainly a discussion of keen interest to anyone who's from here. So, there's a lot that we have to figure out and how do we carry on that responsibility beyond the life of this mine or the other mines in the area?

BA: I've been coming to your meetings and sessions for as long as we've built EMAB. And it's wonderful to see other traditional knowledge holders of other territories to come to

our territory and giving them, giving us a bit about what they think too. We all use the same land and waters and everything. And I've never had a problem with other people coming to our province too. Little sessions here and there. I like that. Whereas, maybe law makers might not agree in the government or high parts of industry to be conflicting. Whereas traditional knowledge, we all use the same water and lands and everything. And it's wonderful to see other people from, well our neighbours from this part of the world coming to our part of the world and giving a session too.

JM: This has been really helpful. I was at one panel session in December 2015, but I was just there at the end to hear your recommendations to Gord. But just hearing you talk this morning and the depth of your discussion, it's really helpful to me and it's helpful to get feedback from Kathy and others on what Diavik does with your recommendations. I would be interested in hearing more about the recommendations that aren't accepted and how you're feeling about that. And what you think about what's going on further into the future. But that's a discussion for another time. Thank you very much.

NT: We need to give direction to Diavik as to what sessions you would like to see next and put them forward to Diavik so they can put some thought into it in terms of timing. We're always concerned about timing. That's why we did this one on processed kimberlite now, so that your input is meaningful and timely, it's not coming after all the plans and decisions have already been made. What we've heard for future sessions would be:

1. Post-closure monitoring, watching
2. Fish and water health in the north inlet and if its connected with Lac de Gras
3. Protecting the land – nitty gritty around demolishing the buildings, waste, metals, airports, roads what's going to be left underground
4. What to check for at closure
5. Wildlife movement and health for PKC closure options. And I think that needs to happen once Diavik is clearer on what direction they will take for dealing with the PK.
6. Women's panel on vegetation
7. I'm hearing from John that there would be an evaluation session, this was an EMAB suggestion to look at how the TK panel functions, reviewing the recommendations

Any questions on these topics? Did we miss anything? Are any not important? Do any of them stand out as a priority? I'm going to go through them one by one. Give me a hand up that we want to do this in the future, a TK panel session.

1. Post-closure monitoring, watching - YES
2. Fish and water health in the north inlet – OK
3. Protecting the land – nitty gritty of what gets left behind, demolishing the buildings, etc. Yes? OK.

4. What to check for at closure

CE: How does this differ this? The 4th one people talk about inspections, almost like a standard? What do we need to say yes, we've done that. We said do this, you've done this, as opposed to watching. So checking that Diavik did what they said they'd do.

NT: It's like holding Diavik accountable, making sure they do what they say. Do we like that idea? Yes? OK.

1. Wildlife movement and health for PKC closure options. - Yes? OK.
2. Women's panel on vegetation – Yes.
3. Evaluation session. Yellowknives taught me years ago that their lands department has this weekly meeting that they call their checking nets session. How are we doing? What are we doing this week? Who's doing what? And that's what I'm hearing John propose. A checking nets session for the TK panel. Is there interest in that? Seems to be. Ok.

Is there anything missing?

DTE: Evaluation should be all the EMAB, the TK and the Diavik should be all together and work together, we should be working together, be a team builder. If we don't work together, nothing works. I think Diavik and the TK panel should be involved. That we're all working together. That's what I see. If there's only one that makes it hard. So, evaluation should be all. With the EMAB, TK and Diavik. That's how I see it. Mahsi Cho.

JM: Just to add to what Terri was saying. One of the things that EMAB wanted to request was that we be invited to come to an entire panel session. So if you meet for 4 days, we would be here for the 4 days. Of course, there might be times where you want to be on your own. If you want to be on your own, then you kick us out. But we would be here the whole time, so we can see the whole panel process as you work your way through the information to make your recommendations. That's something we thought would be very useful as well.

JB: John can you clarify if that is something you would like to try just once? Or something on a regular basis.

JM: We were proposing it once and we could all see if it worked well we could decide together. I just like Terri's idea of working together. If it doesn't work, it doesn't. But I don't see why it wouldn't. EMAB is trying to get a handle on what the panel does now that we're not directly involved. So that would be useful.

JB: Nothing missing off this list? OK we're good for now? Ok.

SeS: Introduced himself. New environment superintendent.

KA: Presentation of Recommendations to Diavik (Gord)

GM: Responses to panel recommendations (by phone). I just have a couple of questions or comments. Most of it was quite clear. First, is the concern to you of contamination. That is our concern as well, and that's something that we'll be putting a lot of effort into. We'll be happy to share those results and work with you on that. A couple of questions:

1. Climate change is a big part of what we look at with, like with the waste rock piles, for example, where we looked at climate change from an increasing temperature perspective. So that was pretty clear on how we would evaluate a climate change scenario there. I presume when you're talking about it in the context of closing the pit and flooding it, that the climate change scenarios would be more related to wind and lake levels, flood, that kind of thing. Maybe if you could comment on that.
2. You wanted to know which equipment we were going to remove from the underground. I presume what you really want to know is what will be left behind, vs being interested in actually doing something with the materials we're removing. Just to be clear there. Your concern is what we are intending to leave behind.
3. Interesting observations on plants and growth with PK as a growth medium, where we've identified that it isn't a great growth medium for plants on the surface. And you're translating that also into 'would it be a good growth medium for aquatic plants, such as rooted plants that might be under the water. I hadn't thought about that aspect of it specifically, because I was never envisioning that the water depth over the PK would ever be shallow enough that we'd have rooted plants exposed. My understanding is that those plants wouldn't grow in water that was greater than 10 m of depth. My question is, is the interest actually wanting to grow aquatic plants or was the testing of the aquatic plants more a way of understanding the properties of the PK in an aquatic environment.
4. The last one is on wind effects. Again, very well aligned with where we're doing as well. The wind behaviour, particularly on the outside of the dykes, is definitely going to be the driver that sets up the circulation pattern behind the dykes. So, the stronger the wind and the bigger the waves, the more that water is going to circulate in that area behind the dyke. So, that's one of the drivers. We can help or hinder that based on how big we make those breaches in the dyke. If we want more circulation of the water, and the wind is strong, one way is to look at what the future winds might be like, but the other is to make the dyke breaches larger to increase circulation. Or if we want it to be less circulation, we make those breaches smaller. You're absolutely right about the need to understand both how the wind and circulation work inside the dyke and how it works outside the dyke.

Those are my main questions and comments out of the presentation.

NT: I'm not sure there was a specific question around contamination, Gord, other than your asserting that it is a concern of Diavik's as well. So, I'm going to assume that, but we can circle back if I'm wrong. But I heard an interest in wanting to know more about what the panel meant by climate change impacts and detail. The gist of that conversation was around concerns about PK in the actual pit and whether climate change impacts, temperature, floods, rare extreme events would somehow compromise the stability or the integrity of the way that the PK was put and kept safe in the pit. Louis, for example, had concerns about how seismic activity might affect some of the fissures, and how that would ultimately affect the containment of the PK. James gave an excellent detailed presentation yesterday that included where the fault lines were.

G: I wasn't expecting a comment back on the contamination. And thanks for the clarification on the climate change. It's really just looking at extreme, but unlikely events, but what might be more likely in the future with climate change in that context of safe storage of the material as they put it into the mine.

NT: The next question from Gord was regarding buildings and infrastructure. What will be left behind vs what will be gifted or given away. I think, please correct me if I'm wrong. If the interest was wanting a checklist of what will be left behind. What will remain underground? What's going to be taken off site? I think that was mainly the interest, keeping in mind that the TK panel has always expressed they would like to be gifted anything that's still useful and that, for example, having some sort of facility to support ongoing watching programs is a strong recommendation that came out of TK Panel 10. Does anybody else in the panel want to add to that?

JB: I just add that Wayne in particular was looking for a very detailed breakdown of materials, particularly metals that he was concerned might create chemical reactions if left in water or open air. So, he just wanted to make sure that not all metals were assumed to be the same and that we might want to pay attention to a lot more detail.

GM: I hear on that bullet on slide 7 on water recommendations that it's mostly about what we'll leave underground. I expect there wasn't much interest in the actual materials/equipment that we'd be bringing out of the underground that would be of value to anyone. It's mostly what we're leaving in, or what we're proposing to leave in. And making sure that it doesn't become a contamination concern.

WL: If you're going to leave any machinery underground, then all the fluids will need to be taken out. The antifreeze, transmission fluids, all oils, from the differential, grease off the machine, otherwise that could get into the water.

NT: I'm thinking we should make a change to the wording of the recommendations. Maybe we should add "equipment to be removed and what will remain". Are we in agreement with adding that phrase? Yes? OK. Gord's next question of clarification was around does the panel want to explore growing plants on PK with a view to encouraging aquatic life and fish habitat? Or is it more a curiosity around understanding whether PK would support any growth. I'm actually not sure we have clarity on that as a panel. Does anybody want to contribute some ideas on that? It's similar to that question we keep going back to around wildlife and caribou. Do we want to make it attractive to caribou to come back or do we want to deflect them away from site? If PK goes in the pit and water is on top, do we want to try to encourage aquatic plant growth on the PK to attract fish, or just do nothing and let nature run its course? Wayne?

WL: I think just the slopes so the Caribou if they go down in the water, in the pit there, that they can swim to the other shore and won't have trouble getting out. They won't drown in the pit.

NT: We have that recommendation about monitoring those ramps. But Gord's question is specific to that question around plant growth on the PK under water. We made a recommendation, you made a recommendation around growing plants in a tank. Is it because you want to see, encourage growth, or is it because of curiosity, you want an answer.

WL: Depends on the shallowness of the water for the fish. If they came in and something can grow for them, why not grow it. But if the PK is really deep and there's a lot of water on top of it, they probably won't go that deep so there's no point in growing anything. Does that answer your question?

JB: So, there is no concern about toxic substance in the PK? Ok. So that was one of the issues that some people spoke about. But you're not concerned that that would be a source of contaminated fish food in the future?

WL: Well, we're already told that PK is non-toxic so that should be good enough.

KA: I was just commenting on the tail end of Wayne's comment about PK not being toxic. And as well it has no nutrients. So, he still would like to have tests to see if they can sustain water plants. I believe that came from our discussion on will there be growth on top of the PK when it's in the pit. We had spoken about putting a screen or some kind of material to support growth on top. I believe that's where that conversation came from, but then we talked about this screen or material being a contaminant to water in time, either rust or material coming apart and causing contaminants in the water. I think that's where that fish tank testing came from. But the vegetation part for the plots is just to see if we

can have growth on the slopes or the sandy areas in the PKC. Does grass grow in there? Is it edible later? I think that's where that comes from.

NT: OK. I'm glad Gord asked the question. It sounds like there is a curiosity to know whether PK would support aquatic life at a depth where light penetrates, but not a commitment to try to facilitate or encourage that growth at this point. Yes? I'm getting a thumbs up from Wayne. OK. Gord's last comment was affirming that Diavik also has a strong interest in understanding winds outside the dykes, realizing that it can be the driver that can influence circulation within the contained area as a function or depending on the size of the breaches. I'm not sure I heard a question. It was mainly a comment.

GM: Going back to the vegetation, thanks Wayne and Kathy for the clarification. I think I do understand where you're headed there. We'll probably come back to you and say that if we are considering PK material in shallow water inside the dyke, that we would then do this kind of study. If we're talking about very deep water, I don't think there's much value other than perhaps curiosity to go and answer that question. And no, there was no question about wind, it was just a comment that we are aligned. Thanks very much for the dialogue.

NT: Is there anything anyone would like to say directly to Gord?

KA: Thank you on behalf of everybody.

SHARING CIRCLE

WL: Seeing as we're breaking up here now. I know everybody is going back to their respective communities. I wish them all a safe trip. I want to thank the facilitators for their input and help, as well as the interpreters for their great work and everyone that attended here. I think it was a pretty progressive type session here. We got a little bit going, but maybe we have quite a bit left to go. I'd like to thank Colleen for coming all the way from Texas to see us. And the youth that showed up. It was really nice. We should have more youth attending. I'd like to thank EMAB for attending and giving some accounting. And my old boss there, standing in the corner, Sean. I tried his desk on for size, his old one. It's too big, it didn't fit me. To everybody here, I wish a good journey home.

KA: Whenever we come here to gather for our next TK session, it's always a question in my mind how we're going to discuss and what we're going to discuss. This one's been particularly interesting, dealing with the PK and everyone's comments and concerns. It's been really eye opening. And I like that we have some new faces. And it's really nice to

see you. Thank you for your participation. Our elders were always giving us your wise thoughts and comments. That helps us see things differently and how you've seen them on the land. To our facilitators, thank you so much. You always do such a wonderful job in keeping us going right on track and getting us answers that we need when we have questions. Colleen's always on the ball getting us those numbers that she has such a difficult time understanding them too. Thank you so much. I wish you all a good journey home. Thank you to all the technical people who come and explain things to us. Take care and have a great journey home.

??: Thank you. This is my third year in a row participating. And I feel I've gained a lot of information and knowledge from our elders and from the whole group from all over. It's good we're working together. Sharing information among each other. I've learned a lot coming here not only from our elders back home, but coming here from others, how they do their TK studies, and how they work with their people back home. That's really eye opening for me. All the information we request, we get it and then the information that we want to see especially the elders, because their more visual. And, I'd like to thank Gord for giving us an opportunity to go underground and to the process plant. And it would be good to have extra youth involved, a male and female, like we have elders- male and female. That's only one suggestion that I have. Even brining Mason here. He took a walk in the process plant and was pretty amazed. He was quiet but I'm sure he has a lot of questions flowing in his head. It's good to get youth and elders together like that. I'd also like to thank Colleen and the facilitators for taking care of us. Also being away from home and sacrificing our weekends and being away from family, especially on mother's day weekend. But you guys still treated us very well. And it's always good food and stuff like that here. I just want to wish everybody a safe trip home. Some of you come from very far north, and it's good to see your faces again. Good to see that EMAB's here. It'll be good to work together so we have a better understanding of one another. I know we've been involved with EMAB too, just don't have really clear mind about it, yet. That's all I want to say. Mahsi. And thank you also to the interpreters for doing hard work. Mahsi.

??: Even though this is my first time and I got to meet everybody, got to know everybody. I love your hospitality. And including all the elders, the interpreters, they do a lot of work. And thank you for everybody. Thank you.

MB: Hello. I'd just like to thank everyone for having me here for the past weekend. It's my first time here. I know I haven't been saying much. Mainly because I wasn't feeling myself later. I did have a couple of ideas but I'm kind of shy and not really good at public speaking. I'd like to say thank you for having me here. And hopefully I'll see you guys sooner in the future. That's pretty much it.

BA: Thank you for putting up with me. I had a good time here. I liked what went on here. And what we talked about. It was really informative. We'll take it back to the community and see what they have to say about this. But I had a good time. Thank you.

?? : Mahsi. This is my third year in the meetings. Thank you. I'd like to thank the facilitators for doing wonderful work. And when they do the presentations, we've learned lots this week. Since we got here, we travel with airplanes, but I hope everyone has a safe trip home. I'd like to thank the interpreters, because it's difficult work. It seems like when we go astray we help each other go on a straight path again. What can we do for one another? The only things we can do is pray for one another and hope that we arrive home. We have lots of children and grandchildren at home. Thank you very much.

RM: Mahsi. I know nobody understands me, but I had to say it in my own language, the first words. I'd like to thank everybody for the information. We all learned from one another and this I think is from the real good people who are sitting on this panel. And especially the facilitators. They had a lot of patience with us explaining everything to us. And the elders too. They give us a lot of information about the land. To me the elders are just like scientists, because they visually see everything, and they live all their life of what they are talking about. And they know. It's been a pleasure here, but I want to go home. Tomorrow there will be a meeting, but I'll be there only for half a day because I was committed to escorting a patient to Edmonton in the evening on the 15th. So, I'll be there with you and even if I'm not there, I'd like to pray for you, and wish everything, the decisions that you make will be good for all the people. Mahsi Cho.

KE: I kind of wrote all this down in fear of messing this up. Last time I publicly spoke, I messed things up pretty bad. Hi. This is my first time to one of these TK panels. I found the experience quite enjoyable. Unfortunately, I was kind of sick a couple of days, so I didn't get the full experience. All I'd like to say is thank you to everyone who's involved in this panel. Mahsi.

LZ: Mahsi. Thank you, everyone's thankful. I'm thankful for the facilitators and the interpreters, they're doing a lot of work. We may not understand one another but through the interpreters, we understand one another, we sleep well, we have good meals, we hear lots of wonderful stories and we exchange a lot of experience and there's people that experience the tour underground and into the process plant. And we want our future generations to live well beyond when the mine site is gone. So, all the people that work here, we're thankful that. I've been involved with this TK panel since its inception and this one elder from Whatì he was here with us. As for now, through the interpreters, even though we may not communicate one to one, but through the interpreters we understand one another. So in the future, all of us we may not be here, but sometimes, so hopefully in the future we'll meet one day at this TK panel. Have a safe trip home. Thank you. That's all I have to say.

DTE: I've been busy on my phone trying to text or email somebody back home because I was only supposed. Well, first of all, never mind. I'll just say something else. It's nice to come here to this meeting. It was a last minute for me to come to be an alternate for Celine Marlowe that sits on this board and whenever she doesn't come, I'll be the alternate. I think I'm going to be wearing so many hats. I'm an alternate for Charlie who sits on EMAB. So, I'll be sitting on that board. So I'll be coming back again to Diavik. It's really nice to be here, to see friends again, and to see new friends. And working together. I always ask myself when I go to a meeting, if we all work together, things will be better and move ahead. Sometimes we disagree, but things will work out at the end of the day. That's what my mother always says. I listen to her on the phone all the time when I'm travelling to a meeting. Which will be a best way for my community? The next generation? I also have the next generation with me. It's my nephew. I was hoping he would come hear us. Because next time, when I don't come to a meeting, it will be him coming to the meeting. It's nice to have young people sitting on this board. And we should have more young people, so we can teach them. Because we're not going to be here forever. Life is a cycle and it changes. We see the next generation moving and sitting on this kind of board or any kind of board. I'd also like to thank the translators. I know they work really hard, since some of us speak different languages. I'd also like to thank the people from Nunavut that are here. It's nice to see you again. Bob. I don't know when was the last time I saw you, it was a few years ago. But when I walked through the door at G&G, I was happy to see you. Seeing new friends again. I know when I go to a meeting, I don't close my mouth. I speak whatever I have to say. I'm really happy to be here. I know I'm going to be in your meetings tomorrow, the 15 and 16 and that's what I was trying to do, somebody is just trying to Facebook me, because he can't text me. I'm trying to arrange something. I'm glad that I'm going to be there with the youth. Helping out the youth. I feel so happy just to give them my knowledge, my wisdoms to them. Whatever I learned from my ancestors that's been passed on. I carry it with me. And sometimes it's really hard when I speak to my nephew and he doesn't understand what I say in my language. It's ok. They're going to learn one day anyways. Mahsi Cho. Safe travels home. You know when your meeting is over. It's good to be with families. I miss home. And I miss my sisters. Since I don't have a mom or dad, at Mother's Day, it was one of the hardest days for me, but I hold it back. Because I just lost a niece too, but I have to move on to help the young people, and be strong, and move forward. So, I'm really happy. And it's true what my auntie Sara said. Wants to go home. I don't mind being close to home, it's Yellowknife, but I still can't go home for another few days. Mahsi Cho and safe travels. God bless you all.

RA: I'm here to represent the youth from Kugluktuk. I'm happy to be here. This past week I gained knowledge from the elders and youth. That I'm happy about. I don't have much to say. Mahsi, quana.

NK: I was thankful for coming back. Whatever your trying to fix, it makes life and the job easier to go. And I'm so thankful for the youth to come again. I wish we could have more youth. When I was a young child, when I was nine, my mom used to always tell me how life's going to be in the future. And then I seemed to ignore it all, but hearing it when I was young, when I had kids, it all started coming back to me which made me strong. The words. These young people are here, hearing what elders have to say. They won't forget it. They'll be our leaders next. How to be a leader, you young people, you really have to take care of yourselves. Listen to elders, keep yourself healthy because you have to look after yourself to look after other people. Your job. To keep strong, you have to look after yourself. I'm always happy there's youth coming. Even if they never come back, they still won't ever forget what they hear from these meetings. Even though only one time you hear somebody, maybe when you get older, you'll pick it up again, and get stronger from it. So, I'm always happy to see youth coming. And I'm so thankful for Diavik to keep us in a comfortable house, all the cooks because you can't do anything without eating. I'm so happy for the facilitators. Have a safe trip. Only if I could speak my Inuinnaqtun language, I would really like to speak lots, but only Bobby and Natasha would understand what I'm saying if I'm speaking Inuktitut. Good to see you all again and have a safe trip.

??: Kohlman, you didn't mess up really badly. Mason, it's good to hear your voice. Regan, you too. It's always good to have you. You never mess up. We were all young people too. At your age, we all messed up too. That's how life goes. Youth when we go home, we tend to mess up when we were growing up in our days. It's always nice to have young people. We don't really expect you to say a lot, just opening up your mind and helping you along the way. You don't have to be shy about anything. And another one I've been concerned about the last few years up to now, my mind and my body has been really giving me conflicting, what to say, especially with this global warming. And I see the countries in the world in bad shape right now. All the floods, all the hurricanes, all the winds being strong and more intense now, and I see whole countries being plummeted right to the ground, such as Puerto Rico. And seeing other parts of the world where I see in the news great big tailings ponds, waste management places, being really ??? and in my mind that's what's causing our oceans to be sick. I'm really depressed now because I see what our future looks like through all these hurricanes and massive floods we're seeing now, which is what is giving our oceans bad chemicals. That he animals have to cope with. I'm in a bad state now when I think about it. That maybe in the future we might be losing some of our species in the oceans. It's really sad to me. I see this right now too. We need to do our thing, as traditional knowledge holders. Try to speak to other parts of the world as well. Even though we are many thousands of miles or millions of miles away or whatever. And our traditional knowledge holders in other parts of the world that's what I see. Traditional knowledge holders all over the world. I don't know if they're going through the same thing. I don't know if they're going through what hew

have here. We could have great discussions. What I see in other parts of the world, the traditional knowledge holders are not getting the answers and their ancestors are not really being taken care of. That's really sad to me right now. And I'm really praying every day for those people, all traditional knowledge holders and people who want to keep the lands clean for us too. We need to keep a closer eye on our planet more now because the weathers are more intense now and we really have no control over it. Weather being weather, it's working itself. It's giving us our destiny. Weather. All weather that we have is giving us our destiny. It's really how for many millions of years, you saw dinosaurs die off and we're in the same boat too. We're all on the same planet and sometimes when I step on a floor like this, I'm really stepping on the floor with the person on the other side of the world just sitting beside me. I can see that too. And I feel for him a lot as a traditional knowledge holder. And I hope that his future or her future will be resolved in the future. And I thank everybody here again for giving us the chance again to go over things we need to look at a little more closely. And I thank everybody who's done a great job again. And keep up the good work again. Who knows, anything could happen to us in the future. Maybe tomorrow or whatever. We need to watch out for each other a little bit more. And I think everybody for giving me a chance to say a few words and listening to me as well. I thank everybody for that. Have a safe trip home and be with your family again. Bye.

PH: Thank you. My name is Peter Huskey. I'm from Behchoko I used to work here from 2002 – 2005 and since 2005 I started interpreting. And I'm thankful that the traditional knowledge panel keeps bringing me back here to do some interpreting. All the things you talk about has been a good experience for me. And throughout the sessions I write down some words that I don't know so I build on these meetings. Every time there's a different meeting, they describe different things in different words. In that way, I'm thankful. And with the trips to the underground, it gives me better understanding of this operation. And also, from the visits from Diavik, from James, the guy who did the water, hydrology presentation. And I believe it's' John, from EMAB, and the staff, and the facilitators for doing a good job. Mahsi Cho. And even though Gord's not here, we communicate with one another. I hope everyone has a safe trip home, even if they're living along the highway. Mahsi Cho.

JR: Well my name's James Rabesca. I'm happy to be here again like I said the other day. We learn as we go. And I think I'm happy that we had all the communications, and then the bloody well politics, but however, I'm glad that I have a good colleague like Peter. He learns a lot from me. Because we learn a lot from the elders. And I learn from the elders. I picked up a lot of examples from the elders. And now we have to pass our knowledge to the future generations. Thank you. Mahsi.

AR: Even just being here for the one day, I find these sessions really valuable. And I learned things I didn't know. And also, I thought of things in a way that I hadn't before. Thanks again for organising these TK panel sessions.

SeS: Thanks from me as well. And thanks from Diavik. Sorry I couldn't be here over the weekend. Some very interesting and helpful recommendations from you guys. Really appreciate it. And I look forward to continuing this work.

JM: Thanks again for inviting us. Really grateful we could be here and listen to you guys think about new things and make recommendations and also just sharing with each other. It's been a really great experience for me, and I really appreciate that a lot. And thanks for not voting us off the island.

??: I want to thank everybody here for being so fantastic and making my job so easy. Especially the interpreters and Kaylee and the facilitators, you guys are amazing. And thank you for inviting me again.

KM: It has been amazing to know and meet with every one of you and get to hear all of your words and put it on paper, horrifically spelled, but I did it. Thank you guys very much for having me.

JB: Thank you everyone. Kaylee has had an especially difficult job and it's her first efrort at taking on a challenge like this, so I really appreciate the patience that you've had. And I also would really like to express how I feel about working with you again. There's a few elders that are still here that I've so grown to love. And it's hard not to, when you're with such good people. I really appreciate Natasha and working with her. She makes it look easy. And Colleen makes us feel like we can actually make a difference here. And I really appreciate that, Colleen, and your contributions. Thanks for the interpreters, thanks to the cooks, many cooks, and thank you to the young people that have come out. I know that for most of you it's a little intimidating and I know your scared. And when you do step out and take a risk, we're all behind you. We're really 100% behind you and really appreciate the courage that it takes. So Mahsi. Mahsi Cho to all of you.

NT: I wanted to acknowledge that it was my screw up that we're here over Mother's Day weekend. So, I'm really sorry, because I think it was extra hard for us to be away on Mother's Day. Thank you for that. I wanted to say also that it was a real gift for the caribou to be here when we first arrived. I feel like we somehow had those guardians with us, I want to say witnesses. We had more energy with us than we normally do. I'm really grateful for that. Also wanted to acknowledge the patience that everybody has shown, both the new members who got thrown into the deep end, parachuted into this process that's so strong, so successful, and the patience of those who have been here because it's hard sometimes to pull people along. But I was really grateful that everyone

took the time to show the patience and that caring, not only with the elders but also with the youth. It's amazing how supportive you are with the youth. And I'm really struck, I think of Pierre, your grandpa who was here. We've been doing this long enough and building on his and others' really good work, it's like this echo that's coming back. It's really beautiful to see. Thanks everybody for your patience and having the faith for Joanne and I and Colleen to facilitate. We try our best and it's always bonkers behind the scene. But I'm so grateful to work with such strong and amazing women who teach me so much. Both during the sessions and outside. I also want to say thanks to Gord and Sean and James and Nathan at the process plant and Steve, Peter, and all the folks and the cooks who made our stay so wonderful. I'm sure I forgot people, but I won't go on.

CE: I want to thank you. We consistently ask you to give up weekends to come and do this, and especially on the Mother's Day weekend. And we appreciate it. It's kind of one of the only ways we can make it work, to come up to site and do this where it's more relevant and you get to see everything. And there's a lot of good work that goes on with a lot of Diavik staff, not just the obvious ones that you guys interacted with that help out behind the scenes. And they try to pull out all the stops for you guys when you come. And I think they've done that again. So thank you all for giving up your weekend and thanks to all those Diavik people as well.

CLOSING PRAYER

END

Appendix E

Presentation on PK—Backgrounder and Previous TK Panel Recommendations on PK and PKC

Presented to the TK Panel
TK Panel Session #11
May 11, 2018

Processed Kimberlite Backgrounder

Why are we talking about Processed Kimberlite now?

- Diavik needs input from the TK Panel regarding options for dealing with processed kimberlite on-site
- Timing is good in terms of planning for closure at DDMI (early and meaningful input)

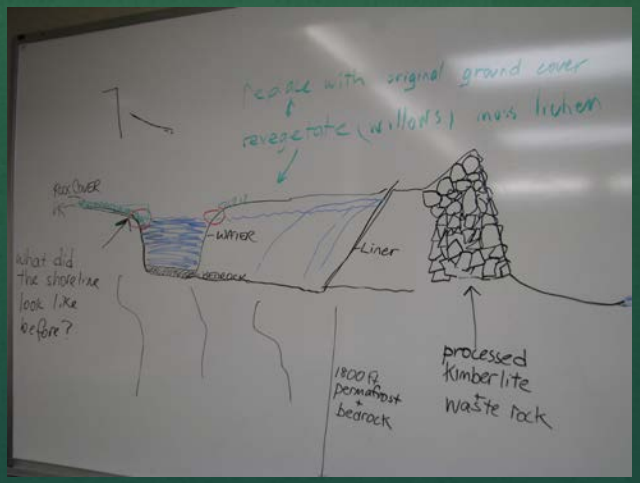
Haven't we talked about Processed Kimberlite before?

- The focus of TK Panel Session #6 in October 2013
- Idea of putting processed kimberlite underground introduced at TK Panel Session #10 in September 2017

Examples of Concerns about PK On-the-Land

- Is there something else that can be done like put in a rock or something so that the rock can settle down into the bottom of that PKC area? . . . if [caribou] tend to jump in, maybe because of that slurry . . .they're going to have a hard time getting out or maybe sinking in the pond. - Bobby Algona (2013)

I prefer that no aquatic things be put back in the PKC pond. I don't think any human being will eat that fish. – Alfred Baillargeon (2013)



TK Panel Recommendations to Date

6.7 Removing the slime offsite remains the preferred option until Diavik can demonstrate through chemical and toxicological analysis that the slime is not harmful to the environment (i.e. plants, wildlife, fish, and humans).

- ✓ Toxicological analysis done (2015-2016)

6.10 Once the slime is removed, line the lake bottom with granite / gravel and rocks and other natural materials that were there before.

TK Panel Recommendations to Date

9.25 Given that the pits are going to be refilled with water, that Diavik is considering putting processed kimberlite and 'slimes' into the pits and underground shafts and concerns about tremors and seismic activity, the TK Panel requests a tour of the pits and underground shafts to see the 'receiving environment' with their own eyes.

TK Panel Guidance (TK Panel #10)

- There is a concern if slimes were to be put into a pit that they may be released into the environment.
- As long as there are no chemical contamination or physical suspension issues (i.e. the slimes don't mix with the lake water), the TK Panel generally supports Diavik researching this alternative for disposal of the PK into the pits. The rationale for this guidance is that the TK Panel wants the WRSA-SCRP and disturbance footprint on the tundra to be as small as possible – move slimes out of the PKC and use WRSA-SCRP rock to cover the PKC area. It was hoped that this might help prevent wildlife access.

Example: PK in Underground

Ekati

- Currently putting PK into Beartooth
- Plans to put PK into Panda/Koala
- 30 m freshwater cap on top of processed kimberlite (considered conservative and thus under review)

Appendix F

DDMI Presentations on Closure and Reclamation Plan Overview, Water License Amendment and Underground Dewatering

RioTinto

Closure and Reclamation Plan (CRP Version 4) Overview

TK Panel

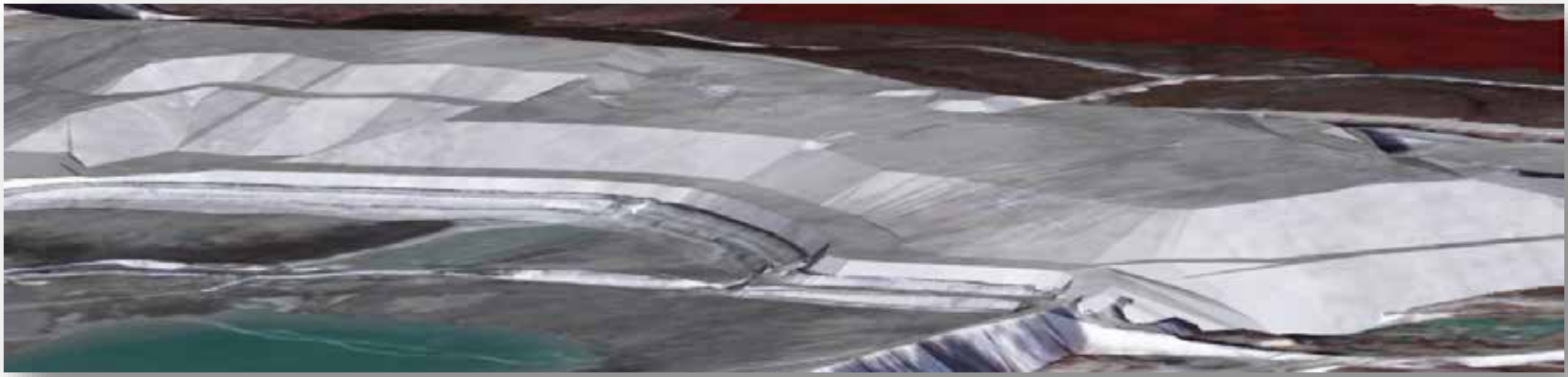
11 May 2018

Status of Diavik's Closure Plans

- The NCRP Final Closure Plan was submitted to the WLWB for review; it has been approved!

- The site-wide Closure and Reclamation Plan (Version 4) was also submitted to the WLWB and is under review
- A workshop was held by the WLWB during fall 2017
- Likely update to CRP V4.1 based on comments

Review of the NCRP Final Closure Plan

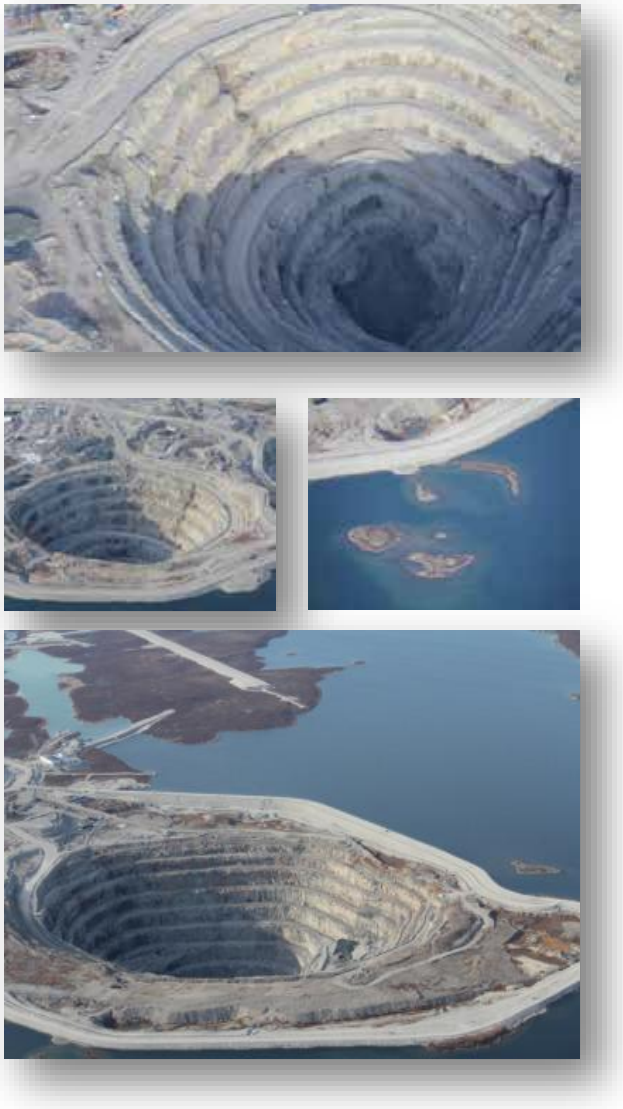


- Your hard work paid off!
- Community organizations that reviewed the Plan felt the Panel's recommendations and DDMI's responses were valuable and meaningful
- DDMI met with leadership from each of your organizations to review the Plan and your contributions; your recommendations were echoed and supported by leadership
- Regulatory and DDMI financial approvals were received and progressive reclamation has begun.

Closure Plan by Area – CRP V4

1. Open Pits & Underground
2. North Country Rock Pile
3. Infrastructure
4. North Inlet
5. Processed Kimberlite Containment

1. Open Pits & Underground



CRP V4

- Flood piping/fill options
- Inert waste to pit option
- PK to underground/pit option

TK Panel Recommendations on Open Pits & Underground

- Do not breach the dikes until communities are satisfied that the water quality is okay
- Leave the lake bottom between the dikes and open pit as-is; plants that have grown will help re-growth after flooding; do not build reefs in these areas
- Leave the dikes as they are; do not modify the slope
- Vary the depths of reefs built within the dike areas
- Ensure good habitat for rearing, feeding and resting inside dikes
- Stock water with bugs to improve quality
- Break up 1 km cliff on A418 pit wall
- Leave current road into pits

2. North Country Rock Pile

CRP V4

- NCRP cover construction
- SCRP not yet included
- Re-sloping work has started; cover placement will begin soon

TK Panel NCRP Recommendations

- Do not allow water to pool on top of the pile; include a domed top to promote water drainage
- Have a ‘moat’ around the pile to collect and monitor water coming off/out of the pile
- Focus re-vegetation on the base of the pile, around the ponds; allow the rest to naturally re-vegetate
- Simulate an esker for the final shape of the pile
- Ensure safe wildlife access for all seasons and soft material for caribou feet
- Keep the height as low as possible while ensuring contaminants are contained
- Cap materials with the best material for biodiversity

TK Panel NCRP Recommendations Cont'd

- Consider using wetlands for filtering runoff/seepage water around the base of the pile
- Slopes similar to that of the test pile so it is safe for wildlife
- Long-term scientific monitoring to ensure the core remains frozen
- Place a limited number of large boulders on top of the pile for wildlife shelter, and place boulders along the edge between the PKC and NCRP to deter wildlife
- Study wind and snow accumulation on wildlife pathways prior to finalizing slopes and cover

NCRP Re-sloping Underway

3. Infrastructure

CRP V4

- Updated building inventory
- Updated re-vegetation information
- Updated timing for building demolition

TK Panel Infrastructure Recommendations

- Ensure meaningful employment for communities to be involved with closure work
- Create safe passage for wildlife at the site after closure; evaluate ways to keep animals away from certain areas
- Add rock cover and do not re-vegetate areas that were used for waste or hazardous materials storage (e.g. fuel bays, waste transfer areas, etc.)
- The TK Camp and airstrip should remain after closure
- Create safe slopes on the sides of roads and the airstrip, similar to test pile surface
- Do not disturb new areas, except where re-sloping would assist with safe wildlife movement
- Remove equipment, unused buildings, pipes, toxic materials and non-biodegradable items from site
- Scarify (roughen) the surface of old plant sites to support re-vegetation
- Re-vegetate certain areas of the site

4. North Inlet

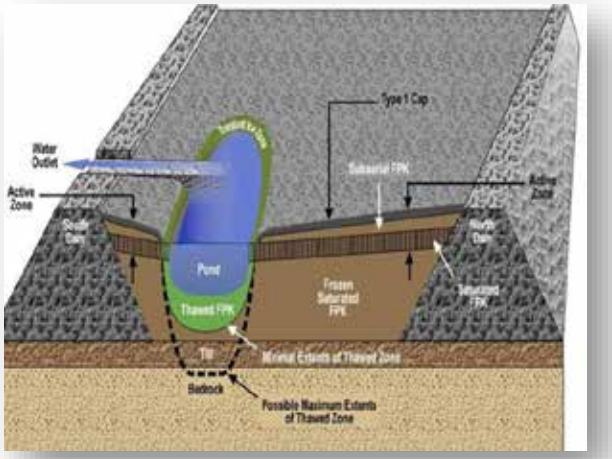
CRP V4

- Evaluated hydrocarbon option
- Change default plan to limited breach

TK Panel North Inlet Recommendations

- Further consideration is required to determine if this area would be a no-go zone for wildlife, or if wildlife use would be encouraged in this zone
- Do not reconnect the North Inlet to Lac de Gras unless the sediments and water are of the same quality as the lake

5. Processed Kimberlite Containment



CRP V4

- Updated to approved closure concept
- Option to go to underground

TK Panel PKC Recommendations

- Cover the area with sand and soil and promote re-vegetation, restore eskers, create wildlife habitat and marshy areas and plant willows
- Return the PKC lake and shoreline to their natural condition, line the lake with rock, re-vegetate with water plants and re-stock with bugs and fish
- Provide safe access for wildlife over the dam by re-sloping and open some sections of the dam to re-create water flow to Lac de Gras
- Leave some areas steep to encourage denning for wolverine, bear, foxes, etc.
- Remove the PK slimes from the mine site at closure
- Conduct toxicological testing on the PK slimes to determine if it is harmful

TK Panel PKC Recommendations Cont'd

- Create barriers to prevent wildlife from moving between the NCRP and the PKC, e.g. steep slopes, boulders
- Filter streams flowing from the PKC by using mosses; monitor this water
- Place a circle of boulders around the PKC pond to deter wildlife from accessing the pond and unstable shore

Additional Questions?

RioTinto

Diavik Dewatering May 11, 2018

Community Presentation

James Sovka

Why Dewater?

- To mine safely.
- Minimize risk of inflows into the workings.
- Maintain stability of the pit walls.
- To efficiently separate clean and dirty water.
- Two systems to handle clean or dirty water.

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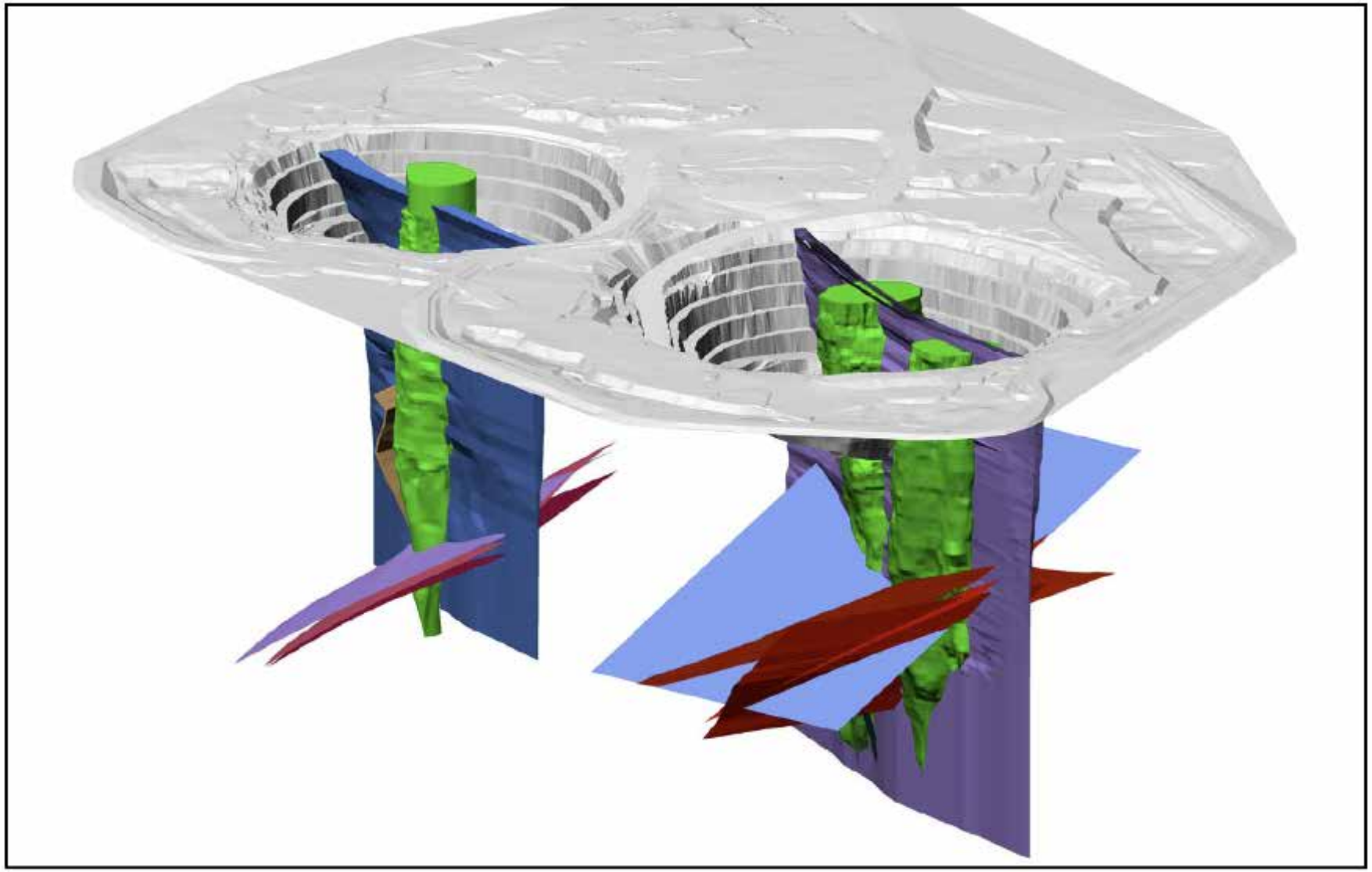
Fault Systems – Primary Conduits

- Faults and cracks in the ground carry water from the lake.
- This water is clean!
- Goal: intercept this clean water before it reaches the mine workings.
- Method: drill holes to capture water.
- The faults are the primary target.



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The “Mackenzie Diabase Dyke” in the A418 pit.

The “Mackenzie Diabase Dyke” in the A418 pit.

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The “East-West Fault” in the lower A418 A-ramp.

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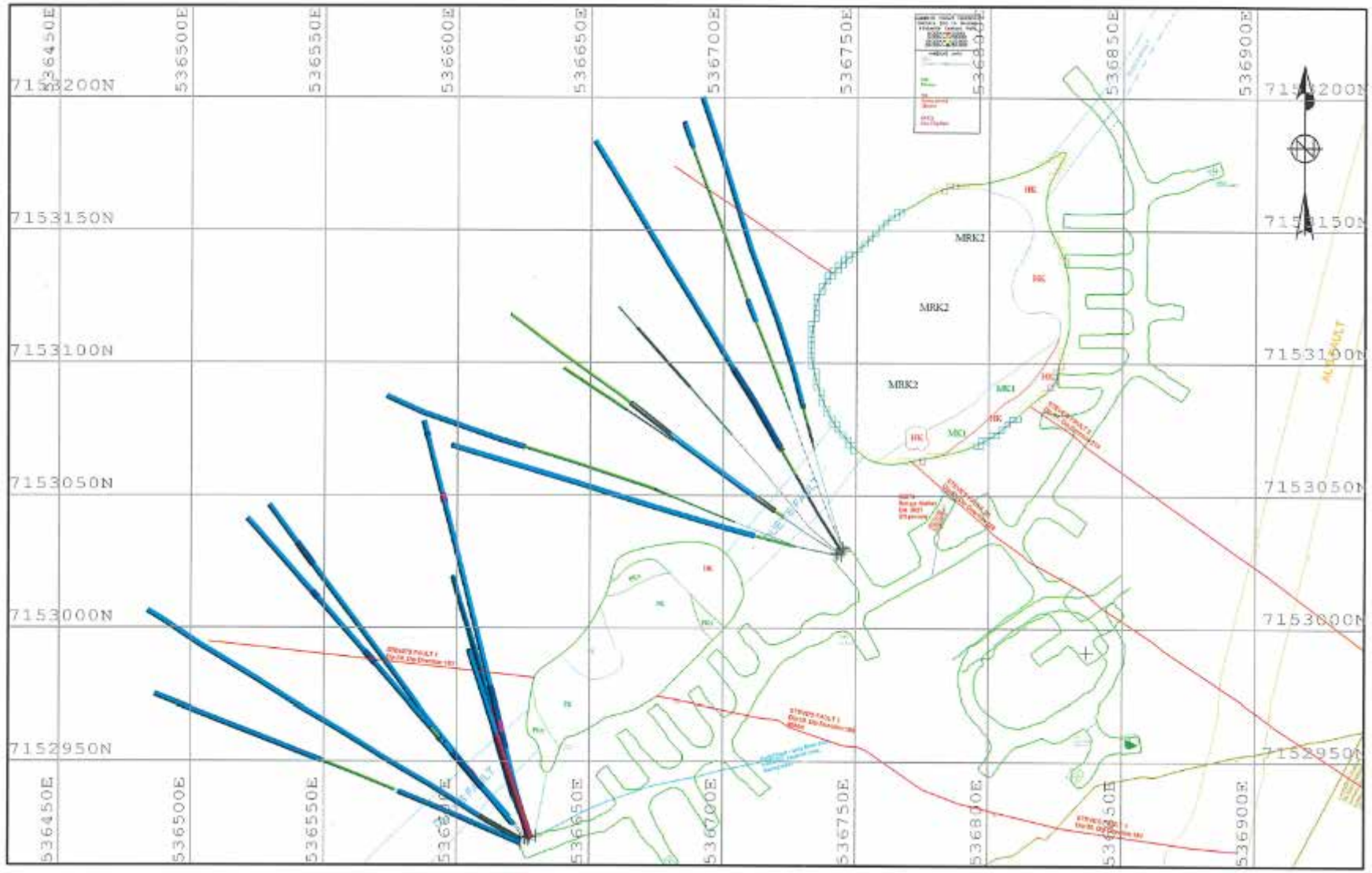
The “Amir’s Fault 3” in the lower A418 A-ramp.

RioTinto

The “Amir’s Fault 3” in the lower A418 A-ramp.

Drill Holes

- We’ve drilled several thousand kilometers of drill holes!
- Some holes hit over 500gpm of water!
- But other holes are dry…
- Understanding the geology is critical.



Diamond drill set up on a hole in progress.

Drain Holes

- Drain holes contain clean water, from the faults, which is drawn from the lake.
- Need pipe to connect.
- This water is flown into the pump stations.
- Very good “security” in the case of high inflow or high pressure.

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Hole connected with proper collar security.

Drill controls and a recently completed drain hole, piped into the system.

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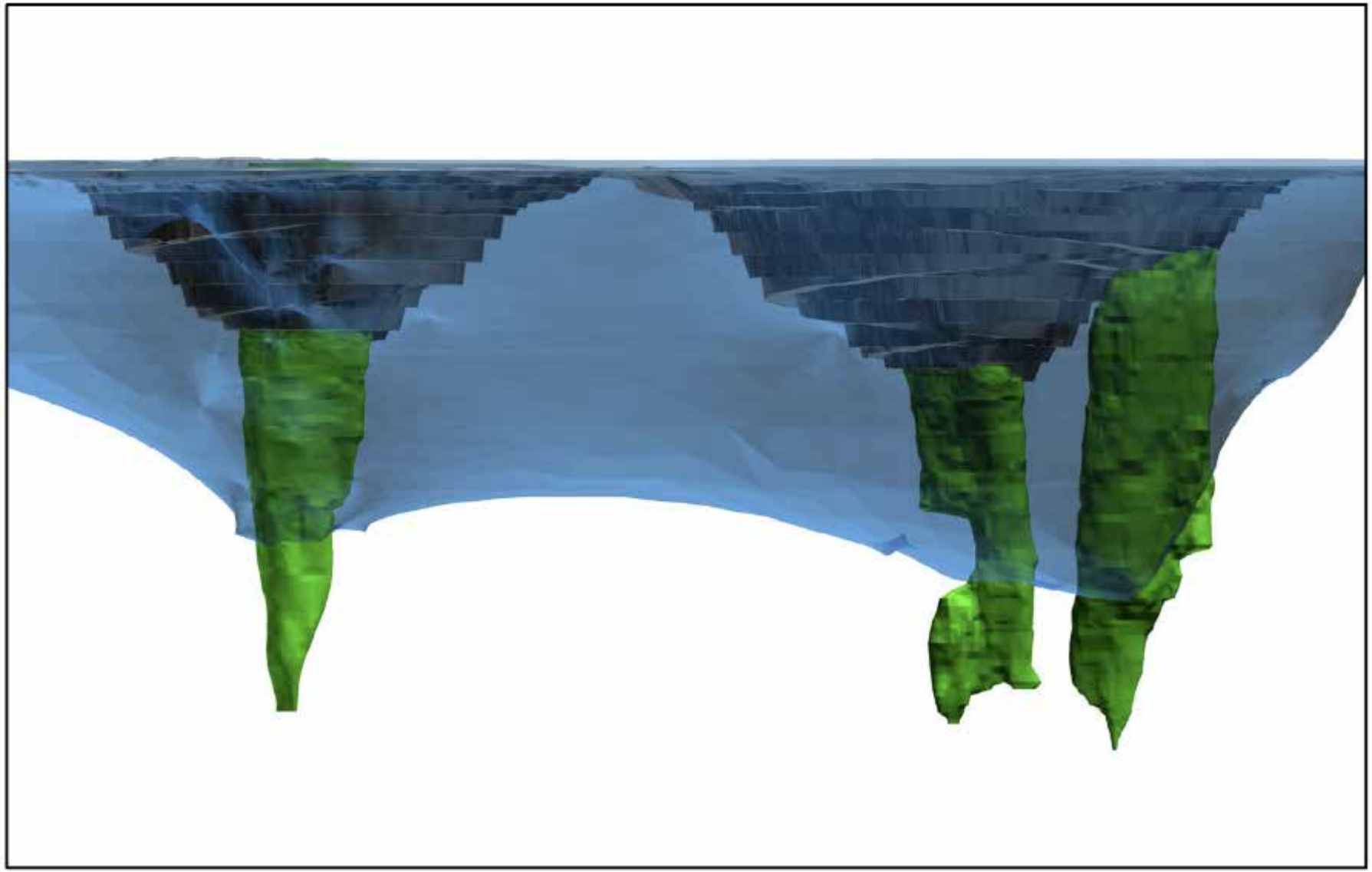
Configurations can get a little crazy!

The Water Table

- We’ve drawn down the water table.
- This is a model of the current water table.
- It can still be wet above, but there will be no pressure.
- The drawdown affects the pressure, which affects the safety of the mine workings.



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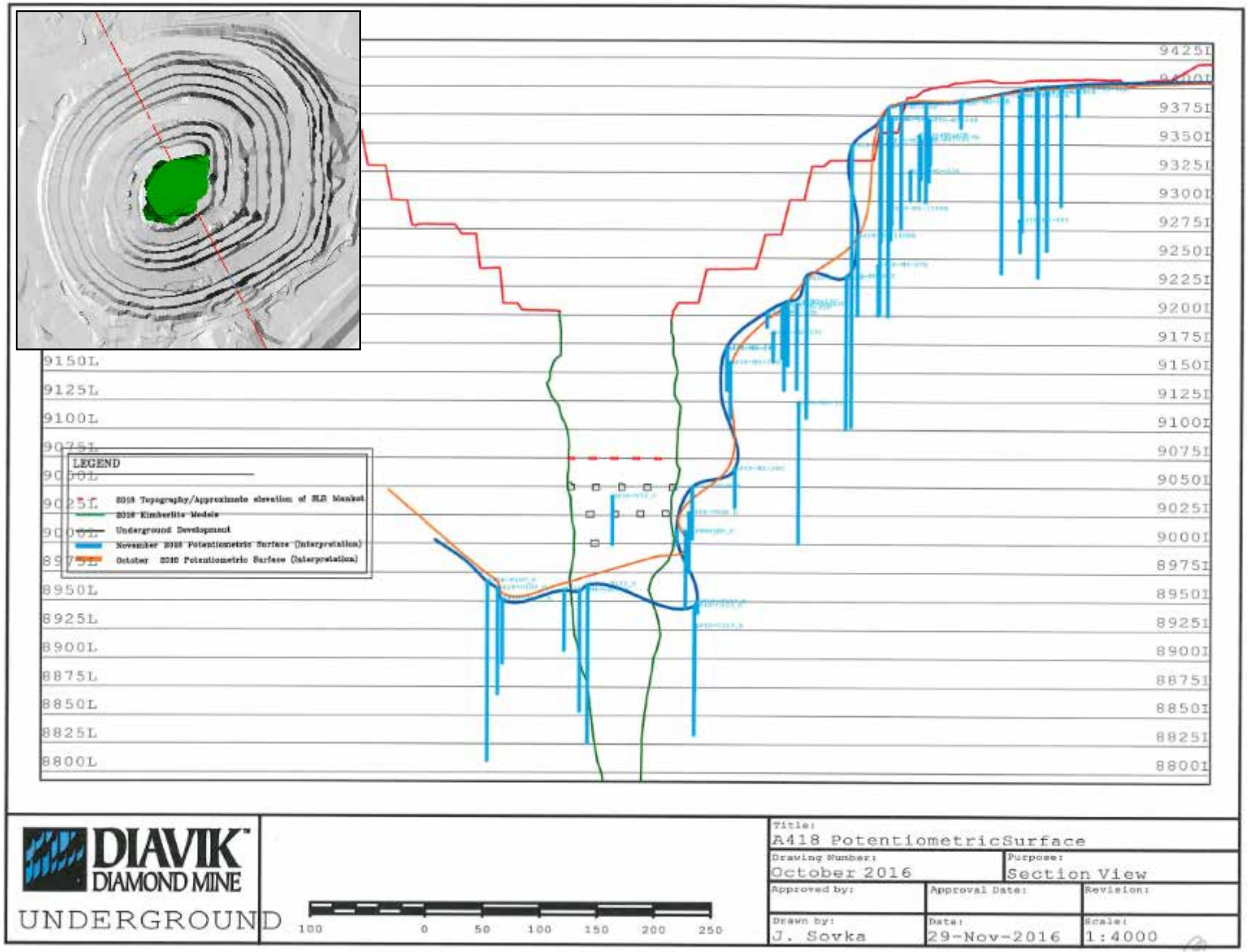
The Water Table

- Section View.
- Each instrument reads a certain level of water above it.
- From many instruments, we can compose a contour.
- This allows for detailed control of when it is safe to release levels for mining.



Questions?

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PK to A418

Water License Amendment

1. Overview
2. Processed Kimberlite Production and Storage Options
3. A418 Pit and Underground, Concept Drawings
4. Environment – Monitoring and Closure
5. Next steps and how you can help

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Overview

- Kimberlite is the rock that contains diamonds.
- It is processed on site and any remaining material is deposited on site.
- The remaining material is referred to as ‘processed kimberlite’ (PK).

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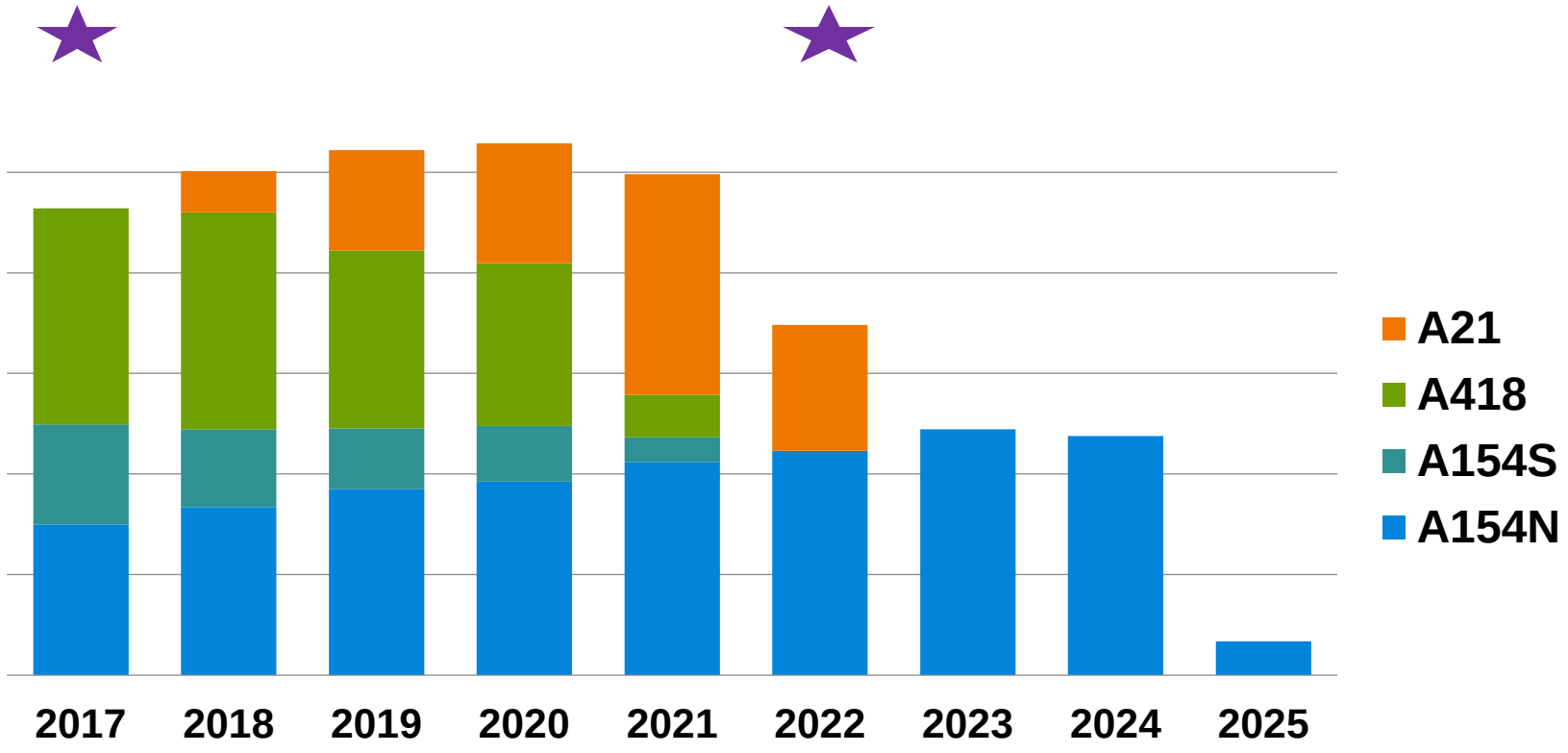
Overview

- Processed kimberlite is currently stored within the Processed Kimberlite Containment (PKC) Facility

PK Production and Storage

- Based on the current mine plan, the PKC will be full in 2021.
- ★ DDMI requires a short-term option for PK deposition (2017-2022), and a long-term option (2022-closure)



PK Storage Options Analysis

- Multiple options were explored for PK storage:
  1. Traditional PKC Dam raise to hold full PK volume
  2. Remaining PK stored in A418 once mining is complete
  3. Alternative storage locations (North Inlet, collection ponds, etc.)
  4. Combination PKC Dam Raise and A418 storage

- Option 4 was the preferred option based on technical, engineering, closure and cost factors.

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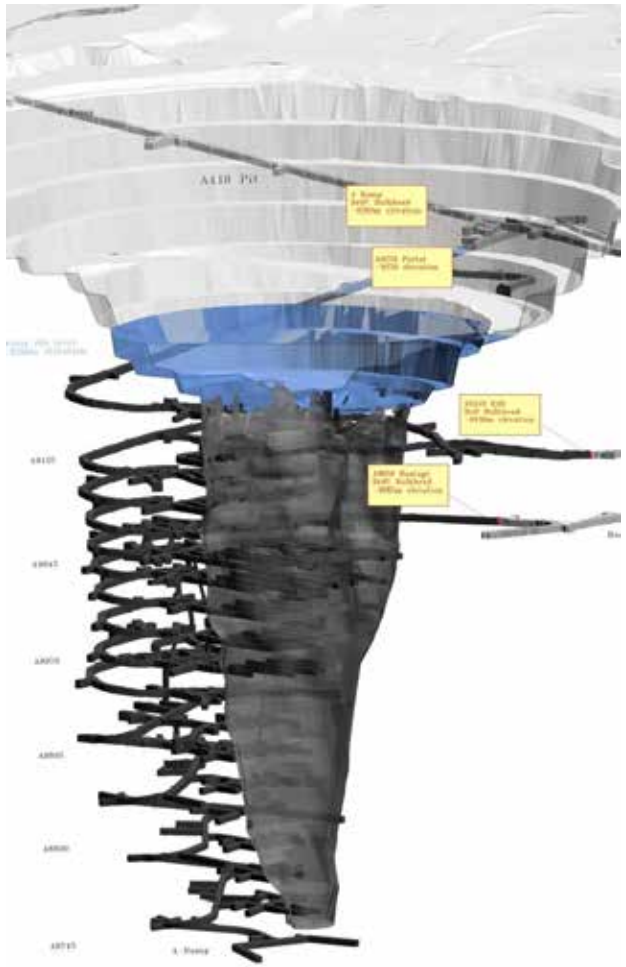
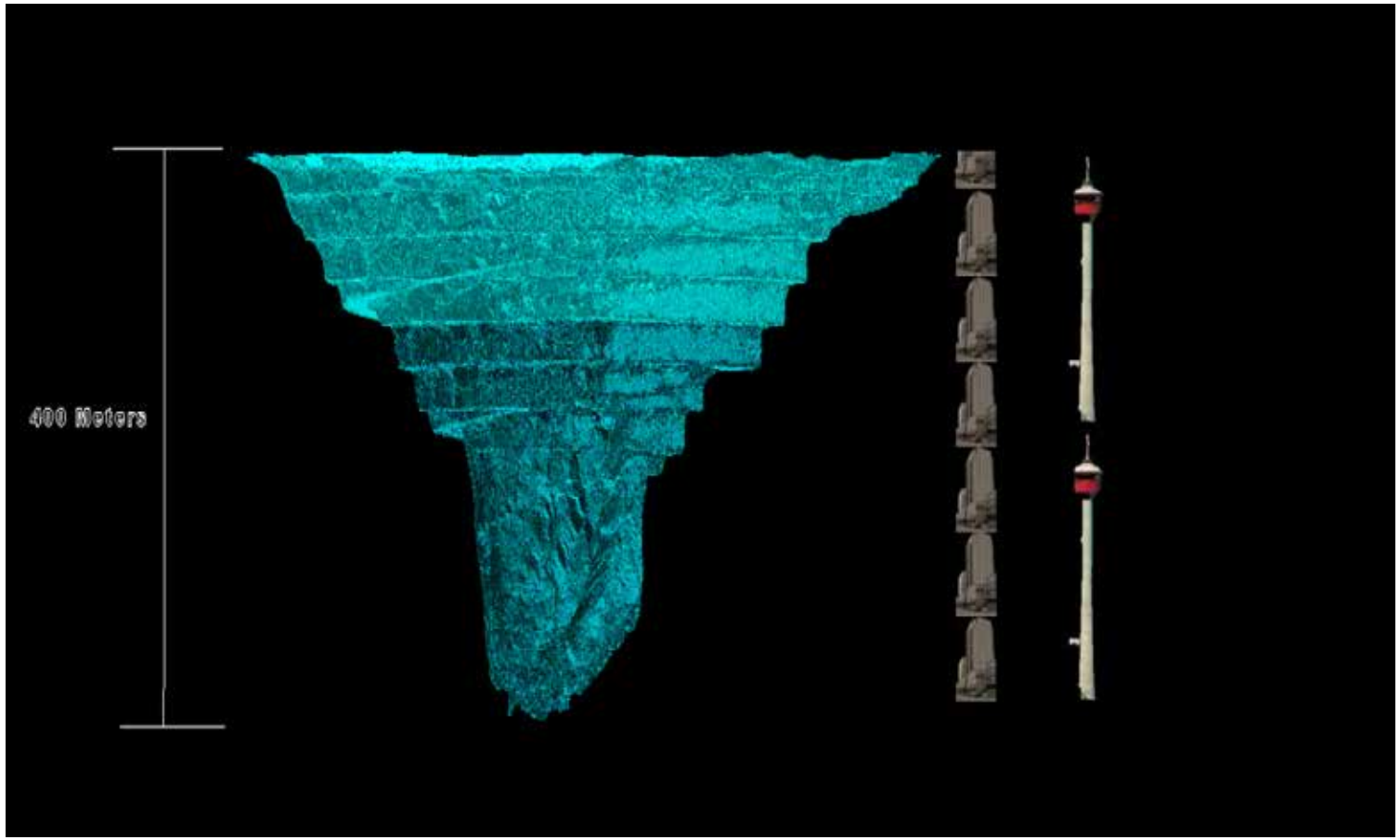
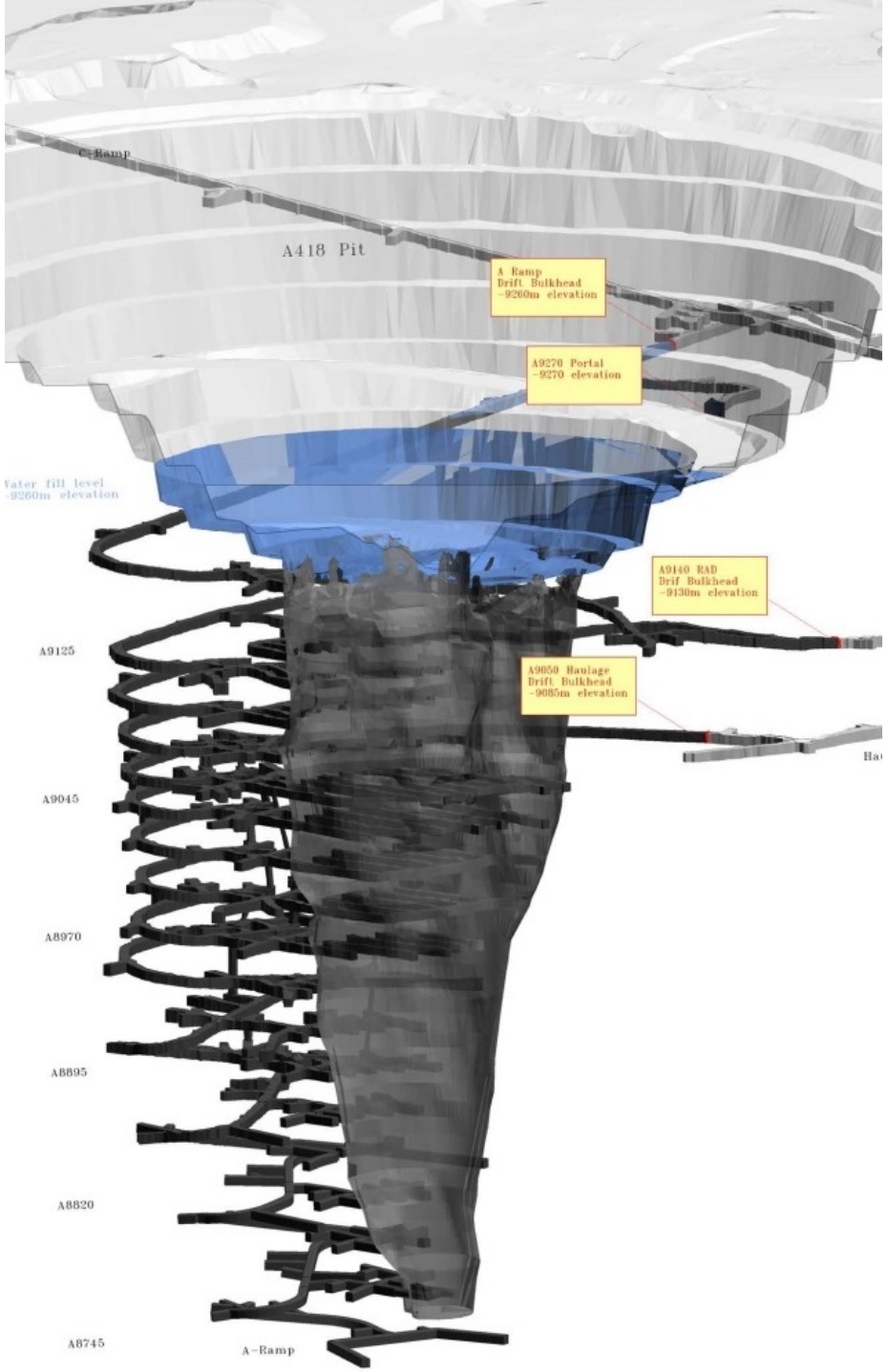
PK Storage – Current and Future Operations



A418 Pit and Underground

- We have explored options for what we can to do with PK, using existing facilities within the mine footprint.





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A418 Pit and Underground

- A Water Licence Amendment is required to place and store PK in A418

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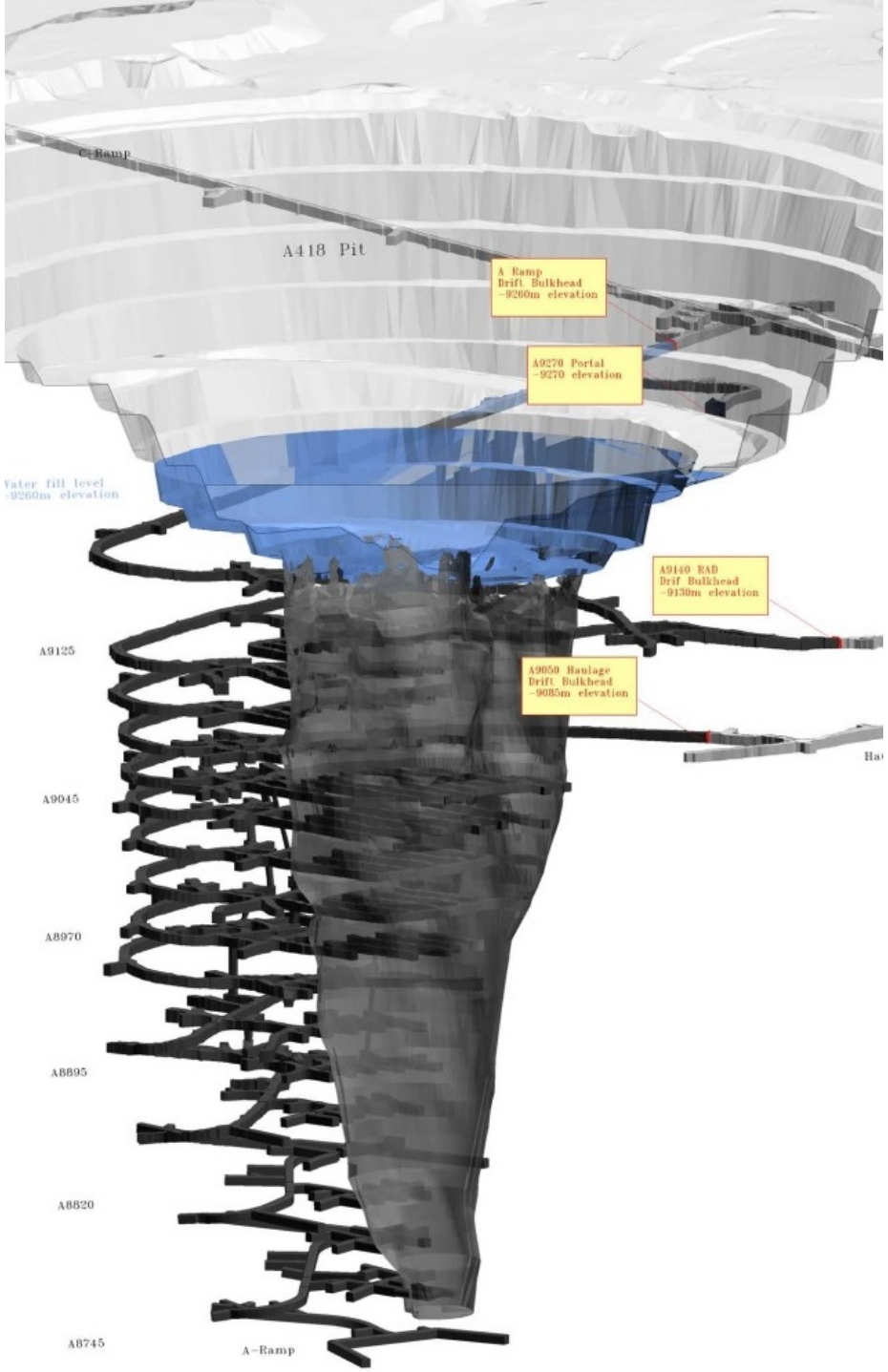
Conceptual Drawing



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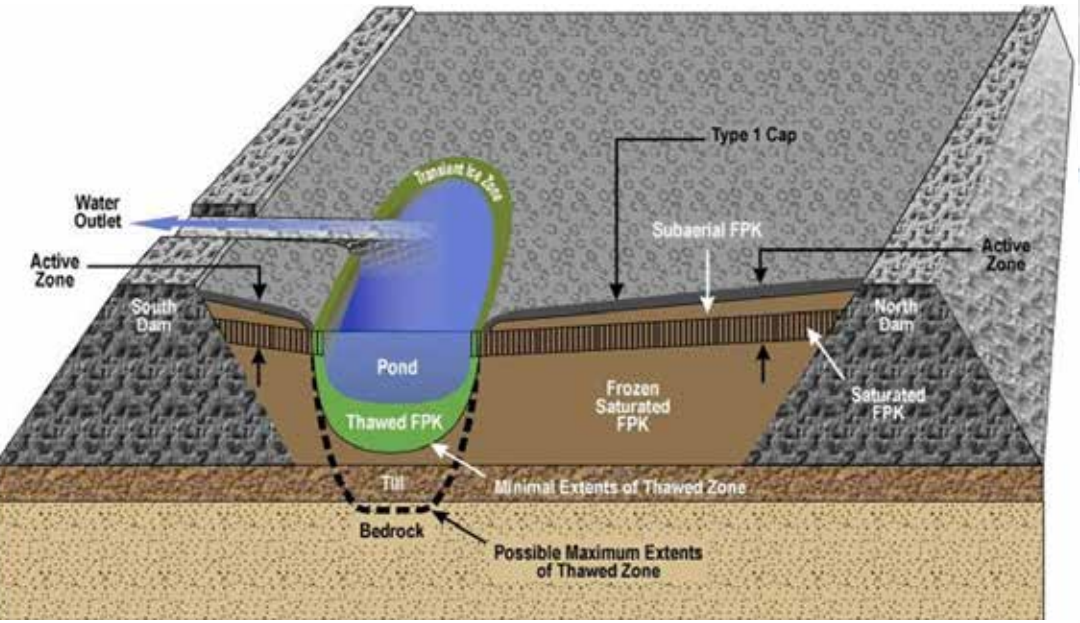
Environmental Considerations – Monitoring & Closure

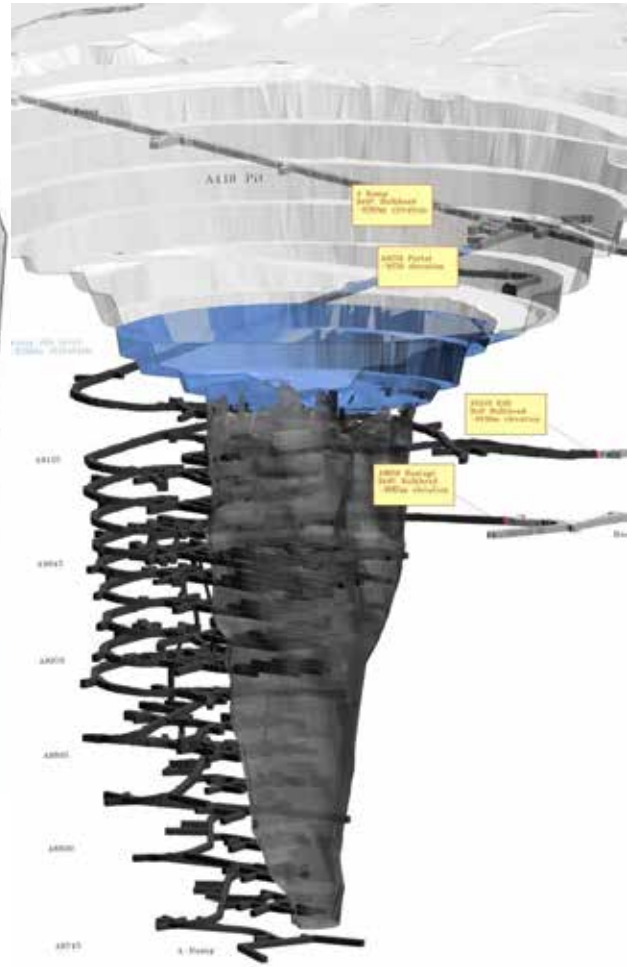
- **Monitoring:**
  - Aquatic Effects Monitoring Program (AEMP) in Lac de Gras will continue (lake water quality, sediment, fish and bugs within the water and sediment), including the AEMP TK Study; and
  - More Surveillance Network Program (SNP) stations (site water quality) for A418 PK deposition.
- **Closure Plans:**
  - Likely a positive change to the PKC Facility closure concept; and
  - Closure concept for A418 remains the same with plans to reconnect the area to LDG
- **Toxicological Studies:**
  - Study of PK has been done by the University of Saskatchewan at the TK Panel's request.

Summary of Toxicology Test Results

Toxicity Test	PK Slimes	Pore Water	Leachate
Fish 			OK
Water Flea 		OK OK	OK
Algae 		OK	OK
Benthic (1) 	Reduced survival in [100%]		
Benthic (2) 	Reduced growth in 100%	Reduced growth in 100% and 50%	Reduced growth in 100%

Closure Options for PK





Timelines and Schedule – PK Management

	Spring 2018	June 2018	Summer 2018	Feb 2019	Summer 2019	Summer 2020	2022	2023-2025
PK Management/Operations	Submit updated PKC Facility Plan to WLWB (March)							Commence progressive closure of PKC
		Submit phase 7 dam design	Commence dam raise		Continue dam raise	Complete dam raise	Placement of PK in A418	Placement of PK in A418
Amendment	Amendment Submission (May)				Revised Water Licence – proceed with additional studies & approvals			
A418							A418 UG Completed	

Next Steps - Regulatory

- We have engaged with communities and regulators about the Amendment
- We will submit a Water License Amendment application to the WLWB in May 2018
- The amendment process will follow the WLWB process which includes additional engagement (i.e. initial comments, technical hearing, public hearing, etc.)
- The amendment process is anticipated to take approximately 12 months
- If approved, the amendment will likely allow for deposition of PK in A418, provided Diavik meets certain conditions and additional approvals

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Diavik needs your help!

- What other information do you need to feel comfortable with PK material being placed in mine areas?
  - What questions do you have that you want answered?

- Can you share your knowledge of how fish use deeper waters to help predict fish behaviour in the pits once they are filled with water?

- If Diavik goes ahead with putting the PK in the pits and the mine shafts, what would you want to watch at closure to know that it is good?
  - For example, once the pits are filled with water and before connecting back to Lac de Gras, as well as once re-connected.

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Appendix G

TK Panel Session #11 Recommendations Presented to DDMI

Traditional Knowledge Panel Guidance and Recommendations

Session #11: Options for Processed Kimberlite
May 10-14, 2018

General Comments

- Seeing A154 "with our own eyes" was really important in helping us to think about and consider the option to put PK in the mine area.
- Results from the PK toxicology study helped us feel more comfortable about various options for PK on-site.
- One of our biggest concerns is contamination
- We are always thinking about water
- Climate change impacts are significant and need to be part of any plan: people are noticing increased snow, ice, winds, floods and changing temperatures
- There is concern about stability of the pits (cracks/fissures) and underground and leakage of water

PK and A418 - General

- The TK Panel was interested in learning about the dimensions and volume of A418 compared to the volume of PK generated for operations and closure. Detailed discussions followed and the TK Panel weighed the options of PK in the PKC versus A418.

A418 and Water - General

- The TK Panel recognizes the importance of water to life. The TK Panel questioned whether water quality in the pit might be affected by PK. Discussions centred around how PK may affect fish and how PK in the pits might create a dead lake given that PK does not support much growth.
- The TK Panel is satisfied by the results of the toxicological study of PK and discussions and presentations by Diavik staff.

PKC versus Pits - Recommendations

- 11.1 If the PK goes to the mine area, the TK Panel recommends that all of the PKC slimes also be put into the pits. There is interest in moving as much of the slimes as possible from the PKC into the mine area.
- 11.2 If Diavik moves ahead with putting PKC slimes into the mine areas, the Panel requests to review any changes to the PKC closure plan. For example, if it is not possible to move all of the slimes in the PKC to the mine area and some of the slimes remain in the PKC, the TK Panel may recommend that the PKC is topped with large boulders to discourage wildlife and people from entering.
- 11.3 The beach materials and rough kimberlite should stay in the PKC area (i.e. anything that can support a rock cover).

Fish - Recommendation

- 11.4 TK holders know that fish generally go where there is food (nutrients) and oxygen so they are unlikely to go to the depth where PK would be.
- 11.5 The Panel would like additional scientific research to see what the effects of PK (ingestion) might be on fish specific to Lac de Gras.
- 11.6 If PK were to go in any mine area, the Panel requests an opportunity to learn more about the depth of water for fish habitat to cover PK (TK and western science).

Water - Recommendation

- 11.7 The TK Panel recommends a future TK Panel session dedicated to the health of the North Inlet upon closure and to decide if there is anything to address with the sediments.
- 11.8 The Panel requests that Diavik provide a list of items/equipment that will remain and be removed from underground before flooding or filling the mine with PK/water.

Monitoring PK - Recommendations

- 11.9 The TK Panel recommends that their members are present for at least some of the time when the slimes are moved from the PKC into the A418.
- 11.10 The TK Panel wants to monitor how water behaves when placed on PK. They would like to see the PK and water in the A418 as soon as it is safe to do so and when there is a good visual of the material, as well as at regular intervals afterwards.
- 11.11 The TK Panel recommends that they monitor the fish habitat within the pits, shoreline modifications (e.g. ramps) for wildlife as well as the stability of the dikes on a regular and ongoing basis.
- 11.12 The TK Panel recommends that they monitor freeze-up and break-up within the contained areas (i.e. within the dikes) to see if the formation and melting is any different - with a view towards safety for people and wildlife.
- 11.13 The TK Panel would like to see the PK vegetation plots again.
- 11.14 The TK Panel recommends that we test slimes/PK in a fish tank to see if any water plants would grow on the PK

Wind - General

- 11.15 The TK Panel would like to see wind behaviour on water within the contained pits/dikes over a period of time (i.e. throughout all seasons).
- 11.16 The TK Panel would like to see wind behaviour on Lac de Gras in and around the dikes. [How is the water on the outside of the dikes and breach areas affected by wind?]

Questions

Appendix H

Presentation of DDMI Responses to TK Panel Session #10 Recommendations

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Diavik Response to TK Panel Session 10 Recommendations

TK Panel

10-14 May 2018

Response to Session 10 – SCRP & Monitoring

Supported

- Diavik must return East Island to a caribou-friendly state (as defined by the TK Panel and Elders), other than those areas identified as 'no-go' zones. Caribou pathways should follow caribou corridors identified through traditional knowledge. (10.9) – *to be developed for SCRP*
- Consider alternative uses for A21 material: Cover the Processed Kimberlite Containment (PKC) area after removing slimes; Assuming the slimes are gone, slope the south face/wall between the NCRP and the north end of the PKC to allow for caribou movement; Extend the west end of the NCRP and slope it for caribou; Cover areas that may have been contaminated after clean-up like the hydro-carbon containment area. (10.10) – *most of these uses are being evaluated*
- Avoid disturbing new areas (e.g. tundra) with A21 material at the SCRP as much as possible. The proposed SCRP area is part of a major caribou migration and feeding corridor and should not be disturbed.(10.1) – *trying to use A21 rock/till for other purposes, e.g. NCRP cover, to reduce size*
- We recommend that rock from A21 that could go to SCRP be used to cover the NCRP. (10.4) – *approvals are complete and this work has begun*

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Response to Session 10 – SCRP & Monitoring

Supported Cont'd

- Drain the pond that would be covered by the SCRP before using the proposed area. (10.5) – *completed, fall 2017*
- Have all SCRP water tested (both science and TK) before releasing into Lac De Gras. (10.6) - *DDMI plans to establish a monitoring station in this location*
- Use natural filtration methods in areas where water will run off the SCRP on site. (10.7) – *this will occur in the area downstream of the SCRP*
- Research or monitoring methods that are offensive to elders (e.g. caribou collars) should lead to getting alternative method advice from elders. (10.24) Also want to learn more about operational monitoring programs, methods and results in order to determine if they are suitable for closure monitoring(10.20) - *provide presentation on Diavik's operational monitoring programs to the Panel at future session*

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Response to Session 10 – SCRP & Monitoring

Modify

- Encouraging communities working together and supporting each other long into the future will give us strength. Diavik has helped us do this and we must continue into the future. (10.21)
  - Diavik sees this as a recommendation to the TK Panel members and community organizations; we are pleased that the Panel recognizes the efforts Diavik has undertaken to encourage collaborative work

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Response to Session 10 – SCRP & Monitoring

Pending

- If this area (SCRP) must to be used, minimize the size (i.e. volume/amount) and height of the SCRP and slope all sides like an esker so that animals can easily walk over it. We recommend the slope should be at 3:1. (10.2, 10.8)
  - SCRP closure plan has yet to be developed; currently not planned to re-slope the entire pile, as no closure cover is necessary for the SCRP.
- If the SCRP is large, designated pathways become more important and must follow caribou routes known through TK. (10.3)
  - SCRP Design included all A21 materials, as approval of NCRP cover was pending. Will need to re-evaluate final size and work with Panel/communities to determine preferred route for caribou.
- Many recommendations related to monitoring that would require another TK Panel session to discuss further. Includes:
  - 10.11, 10.12, 10.13, 10.14, 10.15, 10.16, 10.17 and 10.18
- Plan to leave some buildings (and possibly the airstrip) to support Watching Programs for this and other mines in the surrounding area. (10.22)
  - Options for this will continue to be discussed with communities and regulators.

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Response to Session 10 – SCRP & Monitoring

Pending Cont'd

- Start training for watching programs during mine operations by inviting community members to site, i.e. train-the-trainer program. For example, bring up people to work with Environment dept, starting with one weekend a month and scaling up over time (10.19)
  - Diavik currently invites and involves community members in some of their on-site monitoring, largely program-specific. Evaluate options for some weekend community assistants.
- Diavik should support the development of a 'best practices' document that explains the Panel's approach to integrating TK into mine closure planning. (10.23)
  - The Panel's presentations and reports do a good job of summarizing the process and principles that underly the Panel's recommendations and guidance. Something like this may be more valuable further in the future, once closure plans advance and more is learned about how to practically apply these recommendations and guidance.

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Appendix I

Next Steps

Next Steps

Session	Original Plan (2013)	Completed & Revised Plan
6	PKC	PKC
7	Re-vegetation	Re-vegetation
8	Review of Closure Landscape	Fish Habitat Design & Water Quality
9	Post-closure monitoring: Wildlife & Water	Post-closure Wildlife Monitoring
10	Fish Habitat Design Reviews	SCRP & TK Monitoring Plan
11	PK Management (A418)	**PK Management (A418)**

Reached the end of the topics you'd originally suggested

Need to plan for future sessions – 1/year is realistic

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Future Topics/Sessions

Monitoring at Closure

Updates on PKC closure options

North Inlet

Closure Details: building demolition, metal disposal, waste disposal, contaminants, laydown areas, airports, roads, etc.

Closure Inspection Criteria

2018 Aquatic Effects Monitoring Program (AEMP) TK Camp

Appendix J

TK Panel Session #11 Evaluation Summary

2018 Diavik TK Panel, Session 11: Evalution Form Summary

Question	Very Good	Good	Neither Good nor Poor	Poor	Very Poor	Total Responses	Comments
How would you rate the session for working and communicating together?	11	3		0	0	**14**	
How would you rate the session for mutual respect among participants?	10	4		0	0	**14**	
How would you rate the recording and documenting of TK during the session?	8	5		1	0	**14**	Lots of good info to bring back
How would you rate the facilitation of the session?	9	5		0	0	**14**	Keeping all/everyone on track
How would you rate the outcomes and findings of the session?	7	7		0	0	**14**	Good info. Lots of sharing. For the elders, should be closer to the kitchen from their rooms.
How would you rate the venue and food for the session?	8	4	2	1	0	**15**	Always good. Too much!
How would you rate the logistics for the session (e.g. hotel, travel, honoraria)	7	5	1	1	0	**14**	Very well done. This may be better if done through EMAB due to the processing of cheques.
Overall, how would you rate the session?	8	5		0	0	**13**	1 blank response.

Question	Too long/ many	Enough	Too short/few	Total Responses	Comments
How would you rate the opportunities for you to share your knowledge and experiences?	2	11		**13**	
How would you rate the amount of time to discuss the topics during the session?	3	7	3	**13**	ed to do break exercises. 1 blank response.

What were the strengths of the session? What did you enjoy most about the session?

Everybody coming together and expressing their concerns. I enjoyed being here and hopefully I come back in the next session. It is very important that we continue to share our knowledge with the youth. There was a lot of information on the cone (pit) and fish and caribous and water. Presentation to DDMI. Always double checking that we are happy with our comments and recommendations. Reviewing and clarifying that each statement is what we mean. You always do a good job! Communication and understanding. Given knowledge from different cultures. Listening to Elders about the animals and especially the land given to us. Given information about Diavik closure and how they want us to nurture. Understand gave more so I can understand in good way. I felt the session had a very friendly atmosphere and was pleased with the ideas and findings from the group. The respect of the panel. Working together giving advice while learning from one another. Change in venue. Different subject entirely.

How could the session be improved?

Future improvements to closure plan be implemented as the mine is coming into closure. More youth. More youth from the region, one female and one male. This is my first time here and I couldn't say much except for the hospitaility. Would be good to have more visuals for the Elders.That is the only one and to have the elders stay closer to the kitchen area so it is not too far to walk for them. Would be good to have a table out for those who would like to take notes. Information from the previous sessions to the newcomers and follow-up slideshow for topics and ideas given. For next time if you have a meeting at Diavik Mine make elders stay closer. Also people who have problems with knees. This will be good. Thank you for your understanding. Can't think of anything.